

**DRAFT ENVIRONMENTAL ASSESSMENT**  
*for the*  
**Disposal and Reuse**  
*of*  
**Navy and Marine Corps Reserve Center (NMCRC)**  
**Tacoma, Washington**



**April 2009**

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**DRAFT**  
**ENVIRONMENTAL ASSESSMENT**  
**FOR THE DISPOSAL AND REUSE OF**  
**NAVY AND MARINE CORPS RESERVE CENTER (NMCRC)**  
**TACOMA, WASHINGTON**

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**Lead Agency:** Department of the Navy  
**Title of Proposed Action:** Environmental Assessment for the Closure and Reuse of NMCRC Tacoma  
**Affected Region:** City of Tacoma, Pierce County, Washington  
**Designation:** Draft Environmental Assessment

**ABSTRACT**

The Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 (NEPA) (Public Law [Pub. L.] 91-190, 42 United States Code [U.S.C.] §§ 4321-4370f); the Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA (40 Code of Federal Regulations [C.F.R.] Parts 1500-1508); and Department of Navy Base Realignment and Closure (BRAC) Implementation Guidance (NBIG). The purpose and need for the proposed federal action is to dispose of surplus federal property at NMCRC Tacoma for subsequent reuse. NMCRC Tacoma was designated for closure under the authority of the 2005 Amendment to the Defense Base Closure and Realignment Act (DBCRA) of 1990 (10 U.S.C. §2687 note) that directed the Department of Defense (DoD) to reduce and realign United States military operations. The Navy considered the stated purpose and need of the Local Redevelopment Authority's (LRA's) Redevelopment Plan in developing reasonable reuse alternatives for this EA. The LRA concluded in its Redevelopment Plan that the highest and best use of the property was inclusion in the Port at Tacoma's current plan to expand its maritime facilities. This Environmental Assessment (EA) analyzes two reuse alternatives: the Proposed Action (LRA's Redevelopment Plan) and Alternative 1. Also evaluated is the No Action Alternative, in which the Navy would retain ownership of NMCRC surplus federal property in caretaker status.

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## 1 ACRONYMS AND ABBREVIATIONS

2	AHERA	Asbestos Hazard and Emergency Response Act
3	ACM	asbestos containing material
4	ANSI	American National Standards Institute
5	AOC	Administrative Executive Order on Consent
6	AST	aboveground storage tanks
7	BHTRP	Blair-Hybelos Peninsula Terminal Redevelopment Project
8	BMPs	Best Management Practices
9	BRAC	Base Realignment and Closure
10	CAA	Clean Air Act
11	CB/NT	Commencement Bay Nearshore Tidelands Industrial Superfund Site
12	cm	centimeter
13	CEQ	Council of Environmental Quality
14	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
15	CFR	Code of Federal Regulations
16	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
17	Cis-1,2-DCE	cis-1,2-dichloroethylene
18	CLE	Contingency level seismic event
19	CNEL	Community Equivalent Noise Level
20	CO	Carbon Monoxide
21	COMPACFLT	Commander Pacific Fleet
22	CONNEX	Container Export
23	CSHI	Comprehensive Scheme of Harbor Improvements
24	DAHP	Washington State Department of Archaeology and Historic Preservation
25	dB	Decibels
26	dBA	A-weighted decibels
27	DBCRA	Defense Base Closure and Realignment Act
28	DHS	Department of Homeland Security
29	DoD	Department of Defense
30	EA	Environmental Assessment
31	EB	eastbound
32	ECB	Environmental Condition of Property
33	Ecology	Washington State Department of Ecology
34	EIS	Environmental Impact Statement
35	Enterococci	<i>E.coli</i>
36	ESA	Endangered Species Act
37	ESD	Explanation of Significant Difference
38	FMR	Federal Management Regulation
39	FONSI	Finding of No Significant Impact
40	FS	Feasibility Study
41	HAP	Hazardous Air Pollutant
42	HHM	Hardy Heck Moore, Inc.
43	HUD	Housing and Urban Development
44	HVAC	heating, ventilating and air-conditioning
45	I-5	Interstate 5

1	IR	Installation Restoration
2	IRP	Installation Restoration Program
3	LBP	lead-based paint
4	L <sub>DN</sub>	Day-night average sound level
5	LRA	Local Reuse Authority
6	LOS	level of service
7	MCL	Maximum contaminant level
8	MEP	Maximum extent practicable
9	MLLW	Mean Low Low Water
10	mph	miles per hour
11	MS4	Municipal Separate Storm Sewer System
12	NAAQS	National Ambient Air Quality Standards
13	Navy	United States Department of Navy
14	NB	northbound
15	NBIG	Department of Navy Base Realignment and Closure Implementation Guidance
16	NCHB	Navy Cargo Handling Battalion
17	NEPA	National Environmental Policy Act of 1969
18	NMCB	Naval Mobile Construction Battalion
19	NMCRC	Navy and Marine Corps Reserve Center
20	NMFS	National Marine Fisheries Service
21	NO	Nitrogen Oxide
22	NO <sub>2</sub>	Nitrogen Dioxide
23	NOA	Notice of Availability
24	NOI	Notice of Intent
25	NPDES	National Pollutant Discharge Elimination System
26	NPL	National Priorities List
27	NRHP	National Register of Historic Places
28	NRMTF	Naval Reserve Maintenance Training Facility
29	O <sub>3</sub>	Ozone
30	OCC	Occidental Chemical Corporation
31	OEA	Office of Economic Adjustment
32	OLE	Operating level seismic event
33	OMMP	Operations Monitoring, and Maintenance Plan
34	PA	Preliminary Assessment
35	PAHs	Polycyclic Aromatic Hydrocarbons
36	Pb	Lead
37	PCBs	polychlorinated biphenyls
38	PCE	Tetrachloroethylene
39	PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 microns in diameter
40	PM <sub>10</sub>	particulate matter less than or equal to 10 microns in diameter
41	PMI	Port Maritime Industrial
42	Port	Port of Tacoma
43	PSRC	Puget Sound Regional Council
44	REC	recognized environmental condition
45	RI	Remedial Investigation
46	ROD	Record of Decision

1	ROG	Reactive Organic Gases
2	ROI	Region of Influence
3	RRUI	Road, Rail and Utility Infrastructure
4	SARA	Superfund Amendments and Reauthorization Act of 1986
5	SB	southbound
6	SBL	southbound left-turn
7	SEPA	State of Washington's State Environmental Policy Act
8	SIP	State Implementation Plan
9	SO <sub>2</sub>	Sulfur Dioxide
10	SQO	Sample Quality Objective
11	SR	State Route
12	SR 509	State Route 509
13	SVOCs	Semi-volatile organic compounds
14	SWPPP	Storm Water Pollution Prevention Plan
15	TCE	trichloroethylene
16	TEU	twenty-foot equivalent units
17	TFD	Tacoma Fire Department
18	TMDL	Total maximum daily load
19	TOTE	Totem Ocean Trailer Express
20	TPH	Total petroleum hydrocarbons
21	TPCHD	Tacoma Pierce County Health Department
22	TSCA	Toxic Substances Control Act
23	TSP	Total Suspended Particulates
24	TWLT	two-way left-turn
25	USEPA	U.S. Environmental Protection Agency
26	USTs	underground storage tanks
27	VOCs	volatile organic compounds
28	vph	vehicles per hour
29	v/c	volume to capacity
30	WAAQS	Washington Ambient Air Quality Standard
31	WAC	Washington Administrative Code
32	WB	westbound,
33	WDOE	Washington Department of Ecology
34	WSDOT	Washington State Department of Transportation
35	YTTI	Yusen Terminals Tacoma, Inc.

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DISPOSAL AND REUSE OF NMCRC TACOMA  
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## EXECUTIVE SUMMARY

### 1 ES.1 INTRODUCTION

2 Navy and Marine Corps Reserve Center (NMCRC) Tacoma was designated for closure under the  
3 authority of the 2005 Amendment to the Defense Base Closure and Realignment Act (DBCRA)  
4 of 1990 (10 U.S.C. §2687 note) that directed the Department of Defense (DoD) to reduce and  
5 realign United States (US) military operations. The 2005 BRAC Commission recommended the  
6 closure of 22 Navy Reserve Centers, one of which was NMCRC Tacoma. President Bush  
7 approved this recommendation and Congress accepted it on November 9, 2005.

8 This Environmental Assessment (EA) evaluates the potential impacts on the natural and human  
9 environment that could result from the United States Department of Navy (Navy) disposal of  
10 surplus federal property within the NMCRC Tacoma and subsequent reuse of this federal  
11 property. NMCRC Tacoma consists of improved land located within Pierce County and the City  
12 of Tacoma, Washington. NMCRC Tacoma is located within an area predominately owned and  
13 utilized by the Port of Tacoma (Port) as a public port facility under a charter from the State of  
14 Washington.

15 This document has been prepared by the Navy in accordance with the National Environmental  
16 Policy Act of 1969 (NEPA) (Public Law [Pub. L.] 91-190, 42 United States Code [U.S.C.] §§  
17 4321-4370f); the Council on Environmental Quality (CEQ) regulations implementing the  
18 procedural provisions of NEPA (40 Code of Federal Regulations [C.F.R.] Parts 1500-1508); and  
19 Department of Navy Base Realignment and Closure (BRAC) Implementation Guidance (NBIG).

### 20 ES.2 PURPOSE AND NEED

21 The purpose and need for the proposed federal action is to dispose of surplus federal property at  
22 NMCRC Tacoma for subsequent reuse. The Navy considered the stated purpose and need of the  
23 Local Redevelopment Authority's (LRA) Redevelopment Plan in developing reasonable reuse  
24 alternatives for this EA. This purpose and need focused on reusing NMCRC Tacoma property to  
25 support the highest and best use of the property while taking into consideration relevant social  
26 and economic factors. The LRA concluded in its Redevelopment Plan that the highest and best  
27 use of the property was inclusion in the Port of Tacoma's current plan to expand the Port  
28 maritime facilities. It was also concluded that the size, location and character of the NMCRC site  
29 made it impracticable to redevelop for uses not directly related to the Port's actively expanding  
30 terminal operations.

### 31 ES.3 DISPOSAL AND REUSE PROCESS

32 The Federal Property and Administrative Services Act of 1949 (40 U.S.C. §§ 471 et seq.)  
33 establishes methods for the disposal of federal property and is implemented by the Federal  
34 Management Regulation (FMR) (41 C.F.R. Part 102-75). The FMR requires the Navy to notify  
35 other military departments and DoD entities, as well as other federal agencies, that a property or  
36 facility is "excess." Any DoD or other federal agency that expresses an interest in the site during  
37 the process is given consideration before the property is determined to be "surplus." Once the  
38 property has been transferred, federal restrictions on reuse can only be authorized where it is  
39 authorized by statute.

1 In the case of the NMCRC Tacoma property, expressions of interest were received from some  
2 DoD and other federal agencies, but none of the interested parties ultimately submitted a federal  
3 request for transfer of the property. As a result, the NMCRC Tacoma site was determined to be  
4 surplus to the requirements of the Federal Government.

5 The second priority for “surplus” base property was modified in 1994 with respect to BRAC  
6 properties. At that time, the 103<sup>rd</sup> Congress modified the Stewart B. McKinney Act of 1987  
7 (Pub. L. 100-77, codified as amended, at 42 U.S.C. §§ 11341-11448) (McKinney Act) with the  
8 adoption of the Base Closure Community and Redevelopment Assistance Act of 1994  
9 (Redevelopment Act) (Pub. L. 103-421, 10 U.S.C. §§ 2687). This act provided the affected local  
10 community greater opportunity to participate in the decision regarding disposal of military  
11 properties by requiring homeless providers to work through LRAs. The homeless component of  
12 the Redevelopment Plan for NMCRC Tacoma was developed by the LRA with input from  
13 Housing and Urban Development (HUD) and Pierce County and City of Tacoma Homeless  
14 Associations. Section 2.2 describes the details of this process.

15 The Navy issued a Notice of Surplus Determination in the *Federal Register* on May 10, 2006  
16 that the property would be available for disposal when the installation closes in 2010. In  
17 December 2006, the LRA for NMCRC Tacoma was formed with the approval of the DoD Office  
18 of Economic Adjustment (OEA) as the entity responsible for the redevelopment of the NMCRC  
19 Tacoma property. The LRA Redevelopment Plan calls for the property to be conveyed to the  
20 Port of Tacoma, a municipal agency chartered under the State of Washington.

## 21 **ES.4 ALTERNATIVES CONSIDERED**

22 Navy can either retain NMCRC surplus property in federal ownership (No Action Alternative) or  
23 dispose of the property for subsequent reuse (Disposal Alternative). Navy disposal of surplus  
24 property at NMCRC is the federal action evaluated in this EA for potential environmental and  
25 socioeconomic impacts. Under the federal action, approximately 9.03 acres (3.65 hectares [ha])  
26 of federal property that comprises NMCRC Tacoma would be conveyed to non-federal entities.  
27 The federal action, Navy disposal, is assumed as part of each reuse alternative.

### 28 **Reuse Alternatives**

29 This section presents a detailed description of the two reuse alternatives developed and evaluated  
30 in this EA: Proposed Action and Alternative 1. The Proposed Action represents full  
31 implementation of the development scenario described in the Redevelopment Plan developed by  
32 the LRA. Alternative 1 represents redevelopment of the NMCRC Tacoma site in accordance  
33 with the probable land uses and levels of activity under existing industrial zoning should the Port  
34 not move forward with its master redevelopment program for the Blair Peninsula.

#### 35 ***Proposed Action***

36 The Proposed Action includes the development of the NMCRC site as a portion of the Port’s  
37 comprehensive master redevelopment program for Blair Peninsula, which would transform the  
38 existing industrial and commercial landscape into primarily international and marine terminal  
39 facilities. The redevelopment program includes road, rail and utility (RRI) infrastructure to  
40 support marine terminals. The Proposed Action site is located within the proposed Yusen

1 Terminals Tacoma, Inc. (YTTI) redevelopment area and also includes portions of the new Totem  
2 Ocean Trailer Express (TOTE) and RRI redevelopment areas. The Proposed Action would result  
3 in the following development on the NMCRC property:

- 4 • A portion of the YTTI inter-modal rail yard;
- 5 • YTTI main truck gate;
- 6 • A portion of the new vessel maintenance area for TOTE; and
- 7 • Portions of the RRI

8 The NMCRC site is located near the functional center of the envisioned 167-acre (68 ha) YTTI  
9 Terminal. Elements of the planned YTTI Terminal's container yard, intermodal rail yard, and  
10 truck gate are proposed within the NMCRC property. A portion of the new intermodal working  
11 rail would cross the NMCRC site to serve the YTTI Terminal. The intermodal yard would  
12 connect back to arrival/departure track and storage facilities located on the southern portion of  
13 the Peninsula. Rail access to existing rail-served customers would be maintained. The YTTI  
14 Intermodal Yard would provide six working tracks spanned by overhead rail-mounted gantry  
15 cranes. The containers would be lifted from truck chassis or bombcarts to/from railcars by  
16 overhead cranes.

### 17 ***Alternative 1***

18 Alternative 1 represents redevelopment of the NMCRC Tacoma site in accordance with the  
19 probable land uses and levels of activity under existing industrial zoning should the Port not  
20 move forward with its master redevelopment program for the Blair Peninsula. This alternative  
21 was derived from the *Blair-Hylebos Terminal Redevelopment Program EIS* and is referred to as  
22 the "No Action" alternative in the Port's EIS. Under this alternative, it is assumed that some  
23 level of redevelopment would occur on the Blair Peninsula through the buildout horizon year  
24 (2013), including the development of two new cargo and container terminals, retention of the  
25 TOTE operations at its current terminal, additional auto/break bulk storage and improvements at  
26 the Washington United Terminal.

### 27 **ES.5 ENVIRONMENTAL CONSEQUENCES**

28 The potential environmental consequences associated with implementation of the Proposed  
29 Action, Alternative 1, and the No Action Alternative are presented in Table 2-1 in Chapter 2,  
30 *Proposed Action and Alternatives*. For a detailed description and analysis, refer to Chapters 3  
31 and 4, *Affected Environment* and *Environmental Consequences*, respectively. As shown in Table  
32 2-1, implementation of the Proposed Action or Alternative 1 would not result in significant  
33 impacts to any resource area. The No Action Alternative would also not result in significant  
34 impacts to any resource area, but it would not provide for the disposal and reuse of the surplus  
35 Navy property. Therefore, the No Action Alternative is not considered a reasonable alternative  
36 because it does not meet the purpose of and need for the Proposed Action. The Proposed Action  
37 is the preferred alternative.

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## CHAPTER 1.0 PURPOSE OF AND NEED

This Environmental Assessment (EA) evaluates the potential impacts on the natural and human environment that could result from the United States Department of Navy (Navy) disposal of surplus federal property within the Navy and Marine Corps Reserve Center (NMCRC) Tacoma and subsequent reuse of this federal property. NMCRC Tacoma consists of improved land located within Pierce County and the City of Tacoma, Washington. NMCRC Tacoma is located within an area predominately owned and utilized by the Port of Tacoma (Port) as a public port facility under a charter from the State of Washington.

This document has been prepared by the Navy in accordance with the National Environmental Policy Act of 1969 (NEPA) (Public Law [Pub. L.] 91-190, 42 United States Code [U.S.C.] §§ 4321-4370f); the Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA (40 Code of Federal Regulations [C.F.R.] Parts 1500-1508); and Department of Navy Base Realignment and Closure (BRAC) Implementation Guidance (NBIG).

### 1.1 PURPOSE AND NEED

The purpose and need for the proposed federal action is to dispose of surplus federal property at NMCRC Tacoma for subsequent reuse. NMCRC Tacoma was designated for closure under the authority of the 2005 Amendment to the Defense Base Closure and Realignment Act (DBCRA) of 1990 (10 U.S.C. §2687 note) that directed the Department of Defense (DoD) to reduce and realign United States (US) military operations. The 2005 BRAC Commission recommended the closure of 22 Navy Reserve Centers, one of which was NMCRC Tacoma. President Bush approved this recommendation and Congress accepted it on November 9, 2005. Upon final operational closure of NMCRC Tacoma, the Navy will dispose of the property in accordance with applicable laws and regulations, including the 2005 Amendment to the DBCRA. DBCRA requirements related to the disposal of surplus property include:

- Compliance with NEPA;
- Environmental restoration of the property;
- Consideration of the local community's reuse plan before Navy disposes of the property;
- and
- Compliance with specific federal property disposal laws and regulations.

Under DBCRA the decision to close, relocate, or realign bases is exempt from NEPA documentation requirements. However, once the decision has been made to close, relocate, or realign a specified base, the cognizant military service is required to prepare appropriate NEPA documentation evaluating the environmental effects of the disposal and subsequent reuse of the property.

As authorized under BRAC regulations, a Local Reuse Authority (LRA) was established for the NMCRC site in December 2006, and subsequently the LRA took action to prepare a Redevelopment Plan for the site (the LRA is discussed further in Section 2.2, Reuse and Planning Process). The Navy considered the stated purpose and need of the LRA's Redevelopment Plan in developing reasonable reuse alternatives for this EA. This purpose and need focused on reusing NMCRC Tacoma property to support the highest and best use of the

1 property while taking into consideration relevant social and economic factors. The LRA  
2 concluded in its Redevelopment Plan that the highest and best use of the property was inclusion  
3 in the Port's current plan to expand the Port maritime facilities. It was also concluded that the  
4 size, location and character of the NMCRC site made it impracticable to redevelop for uses not  
5 directly related to the Port's actively expanding terminal operations (LRA 2007).

6 The Navy will use this EA to assist in making a decision as to the final disposition of the surplus  
7 federal property at NMCRC Tacoma. Following the completion of the Final EA and assuming  
8 that no significant impacts are identified, the Navy will issue a Finding of No Significant Impact  
9 (FONSI). Following disposal, no additional NEPA review by the Navy will be required.

## 10 **1.2 OVERVIEW OF NMCRC TACOMA**

11 NMCRC Tacoma consists of approximately 9.03 acres (3.65 hectares [ha]) of improved and  
12 unimproved land located on the Blair Peninsula within the Port of Tacoma in an industrially  
13 zoned area approximately 5 miles (8 kilometers [km]) north of downtown Tacoma in Pierce  
14 County, Washington (Figure 1-1). The NMCRC site is located within a maritime setting typical  
15 of the Tacoma Tidelands area. The Z-shaped property's northern boundary extends slightly into  
16 the Hylebos Waterway. To the northwest lies Port-owned property which currently hosts  
17 America Fast Freight, a transportation and logistics company providing ocean freight  
18 forwarding, trucking, project logistics and warehousing distribution services. To the site's  
19 northeast lies Totem Ocean Trailer Express (TOTE) Terminal, a privately owned shipping  
20 company that provides domestic service between the Ports of Tacoma, Washington and  
21 Anchorage, Alaska. Immediately southeast of the site lies a vacant parcel owned by the Port that  
22 is being used to stage construction equipment and materials for the rehabilitation of Hylebos  
23 Bridge. In addition, a number of small commercial and industrial businesses align the southerly  
24 East 11<sup>th</sup> Street right of way. The reuse plan area is shown on Figure 1-2.

25 The existing NMCRC site consists of seven buildings, an asphalt parking lot, and two piers on  
26 the Hylebos Waterway. A brief description of the buildings is included in Table 1-1 and shown  
27 on Figure 1-2.

28 Although the Naval Reserve has been active in Tacoma since 1911, the NMCRC did not occupy  
29 its current site until 1947. During the early 1900s, the NMCRC Tacoma property was part of a  
30 larger shipyard owned and operated by Todd-Pacific Shipyards Corporation. The shipyard  
31 constructed naval ships during World War I and closed immediately following the war.  
32 Woodworking plants then occupied the former shipyard area during the 1920s and 1930s. In  
33 1939, the Seattle-Tacoma Shipbuilding Corporation began construction of a new shipyard on the  
34 former Todd-Pacific property to support production of naval ships for World War II. At the end  
35 of the war, the shipyard closed, and the NMCRC Tacoma property was turned over to the War  
36 Assets Administration.



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# Regional Site Map

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 1-1

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**DRAFT**

**LEGEND**

- Buildings
- Navy Property Boundary
- Local Streets
- Main Station Entrance

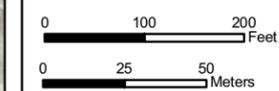
**SITE LOCATION MAP**



**NOTES & SOURCES**

Coordinate System: UTM Zone 10  
 NAD 83, meter  
 Data Sources: N&MCRTC Data  
 WA Site Plan (23 September 1999)  
 WA General Development Map Existing  
 & Planned Pre-M Day (18 September 2002)  
 Topographic Map with Property Lines (June 1984)

**Internal Working Document -  
 Not for Release under FOIA**



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**Reuse Plan Area**

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 1-2

<b>TABLE 1-1 NMCRC Tacoma Existing Buildings</b>		
<b>Building/Structure Number</b>	<b>Occupant</b>	<b>Purpose</b>
5	Navy/NCHB 5	Equipment maintenance shop, Lecture Hall, Offices
6	Coast Guard	Boathouse
40 (Pier)	NAVSEA Barge Berthing	Boat mooring
51	Navy/NAVSEA	Old boiler house
55	Navy/Coast Guard	Main Building (offices, classrooms, medical exam rooms, gym)
56	Navy/Coast Guard	Maintenance bays, storage area and weight room)
57	Coast Guard	Firearm ammunition storage
60 (Pier)	Navy/Fletcher Oil	Former fueling pier (not in use)
65	Navy	Boiler House
Storage Lockers/CONNEX	Not applicable	Hazardous Waste Storage

1 Following World War II, the Naval Reserve reorganized and established a peacetime reserve  
 2 force. As a result of the reorganization, the Navy established the NMCRC Tacoma in 1947 on  
 3 its current site. The Navy renovated 15 existing buildings and structures on the property  
 4 originally constructed for the shipbuilding industry. In 1961, the Navy acquired a fueling pier  
 5 operated by Fletcher Oil Company. Little information is available pertaining to the facility's  
 6 operations between 1948 and the early 1960s.

7 To support a growing military reserve training operation utilizing the facility, the Navy received  
 8 federal appropriations to build a permanent facility in 1963. Most of the original facilities were  
 9 demolished during the construction of three new buildings. Upon completion, the reserve center  
 10 was dedicated in 1964 as a facility to support Army, Navy, Marine Corps and Coast Guard  
 11 Reserves. In 1995, the Army reserves relocated to other facilities.

12 The Naval Reserve Maintenance Training Facility (NRMTF), Puget Sound, became a tenant of  
 13 the Reserve Center from 1982 to 1988 and operated a repair and oily waste barge moored on the  
 14 northern section of Pier 40 (URS 1996). In 1988, the NRMTF repair barge was moved to the  
 15 Puget Sound Naval Shipyard, Bremerton, Washington. The oily waste barge was also removed  
 16 from NMCRC Tacoma by early January 1995 after the oily waste contents were properly  
 17 disposed and the barge was steam cleaned (URS 1996).

18 At the time NMCRC Tacoma was designated for closure in 2005, it was used as a drill facility  
 19 for approximately 450 Navy reservists. The primary reserve units were Navy Cargo Handling  
 20 Battalion (NCHB) #5, Naval Mobile Construction Battalion (NCMB 18 DET 0218), and Naval  
 21 Reserve Hospital (NR NH Brem DET 1). The Navy permitted portions of the facility to two  
 22 tenants: United States Coast Guard Port Security Unit #313 and the Commander Pacific Fleet  
 23 (COMPACFLT). No Marine Corps Reserve Units occupied the site at the time it was designated  
 24 for closure. At this time, all reserve units and tenants have relocated from the site with the

1 exception of the NCHB #5 and the United States Coast Guard Port Security Unit #313. NCHB is  
2 scheduled to be relocated in 2010 upon completion of a replacement facility at Fort Lewis,  
3 Washington. The Coast Guard is preparing to relocate to Everett, Washington.

### 4 **1.3 DISPOSAL OF NMCRC TACOMA**

#### 5 **1.3.1 Predisposal Actions**

6 The disposal process encompasses several sequential actions, further described below. The  
7 federal government is responsible for disposal of the property.

#### 8 **Caretaker Activities**

9 NMCRC is scheduled for operational closure in 2010, at which time all areas would be available  
10 for disposal. Caretaker activities would include uses on the property between the time the  
11 facility ceases to operate and the date the property is transferred. Caretaker activities include the  
12 actions necessary to protect and maintain facilities after operational closure. Protection consists  
13 of security and fire protection services. Maintenance is limited to identifying critical deficiencies  
14 and taking the minimum action necessary to arrest the deficient condition that, if not corrected,  
15 may cause structural damage.

#### 16 **Interim Leases**

17 Interim leases provide an alternative to early transfers of properties. If the recipient of the  
18 NMCRC Tacoma site has been designated prior to installation closure, it may be beneficial to  
19 both parties to lease all or portions of the property to said recipient pending deed transfer. An  
20 interim lease would potentially save the Navy protection and maintenance costs, and allow the  
21 recipient an early start on the redevelopment of the property.

#### 22 **1.3.2 Disposal Process Requirements**

23 This section briefly highlights some of the key laws and regulations that guide BRAC disposal  
24 and reuse.

25 The Federal Property and Administrative Services Act of 1949 (40 U.S.C. §§ 541 et seq.)  
26 establishes methods for the disposal of federal property and is implemented by the Federal  
27 Management Regulation (FMR) (41 C.F.R. Part 102-75). The first priority for the disposal of  
28 federal property, as identified by the FMR, requires the Navy to notify other military  
29 departments and DoD entities, as well as other federal agencies, that a property or facility is  
30 “excess.” Any DoD or other federal agency that expresses an interest in the site during the  
31 process is given consideration before the property is determined to be “surplus.”

32 In the case of the NMCRC Tacoma property, expressions of interest were received from some  
33 DoD and other federal agencies, but none of the interested parties ultimately submitted a federal  
34 request for transfer of the property. As a result, the NMCRC Tacoma site was determined to be  
35 surplus to the requirements of the Federal Government.

36 The second priority for “surplus” base property was modified in 1994 with respect to BRAC  
37 properties. At that time, the 103<sup>rd</sup> Congress modified the Stewart B. McKinney Act of 1987  
38 (Pub. L. 100-77, codified as amended, at 42 U.S.C. §§ 11341-11448) (McKinney Act) with the

1 adoption of the Base Closure Community and Redevelopment Assistance Act of 1994  
2 (Redevelopment Act) (Pub. L. 103-421, 10 U.S.C. §§ 2687). This act provided the affected local  
3 community greater opportunity to participate in the decision regarding disposal of military  
4 properties by requiring homeless providers to work through LRAs. The homeless component of  
5 the Redevelopment Plan for NMCRC Tacoma was developed by the LRA with input from  
6 Housing and Urban Development (HUD) and Pierce County and City of Tacoma Homeless  
7 Associations. Section 2.2 describes the details of this process.

8 The Navy issued a Notice of Surplus Determination in the *Federal Register* on May 10, 2006  
9 that the property would be available for disposal when the installation closes in 2010. In  
10 December 2006, the LRA for NMCRC Tacoma was formed with the approval of the DoD Office  
11 of Economic Adjustment (OEA) as the entity responsible for the redevelopment of the NMCRC  
12 Tacoma property. The LRA Redevelopment Plan calls for the property to be conveyed to the  
13 Port of Tacoma, a municipal agency chartered under the State of Washington.

#### 14 **1.4 RELATED STUDIES**

15 Several project-related studies have been undertaken or are on-going at NMCRC Tacoma. The  
16 largest of which is the Environmental Condition of Property (ECP) report. The ECP, completed  
17 in June 2006, summarizes the historical, cultural, and environmental conditions of the property,  
18 including a broad evaluation and summary of all known and suspected areas where hazardous  
19 materials or petroleum products have been handled, stored, disposed of, or released within the  
20 boundaries of NMCRC Tacoma and adjacent areas (DON 2006).

21 The Port is proposing redevelopment activities on approximately 548 acres (220 ha) on the Blair  
22 Peninsula and is currently preparing the *Blair-Hybelos Peninsula Terminal Redevelopment*  
23 *Project (BHTRP) Environmental Impact Statement (EIS)* to address potential impacts associated  
24 with the redevelopment project. The Port's Draft EIS was released for public review on October  
25 31, 2008 and a Final EIS is anticipated in Spring 2009. The Port's proposed project would  
26 include redevelopment of an existing terminal and other industrial uses to upgraded and  
27 expanded terminal and support facilities, including road, rail and utility infrastructure. The  
28 proposed project will be reviewed under the State of Washington's State Environmental Policy  
29 Act (SEPA) and the Port is the lead agency under SEPA for the redevelopment project. The  
30 Port's redevelopment area includes the following components:

31 New Totem Ocean Trailer Express (TOTE): Redevelop approximately 56 acres (23 ha) on the  
32 northern end of the Blair Peninsula to accommodate relocation, consolidation and modernization  
33 of the existing TOTE operations. Redevelopment activities would include demolition of existing  
34 onsite and inwater structures and construction of new buildings, storage facilities and gate and  
35 access facilities.

36 Yusen Terminals Tacoma, Inc. (YTTI): Develop an approximately 167-acre (68-ha) terminal for  
37 YTTI (including the area to be vacated by TOTE) to accommodate operations of a new container  
38 shipping tenant. Redevelopment activities would include demolition of certain existing onsite  
39 and in-water structures and construction of new elements including container yard, intermodal  
40 yard and gate and access facilities.

41 Washington United Terminal: Expand an existing, operating gantry-style wharf and associated  
42 cranes on the current Washington United Terminal site to accommodate operations of the west  
43 side of the Blair Waterway.

1 Road, Rail and Utility Infrastructure (RRUI): Redevelop portions of the road and rail  
2 infrastructure on the Blair Peninsula to improve service and expand capacity for existing and  
3 new uses. Improvements would include the realignment and extension of existing roadways  
4 (including Taylor Way), construction of a by-pass road for Taylor Way, vacating portions of  
5 Alexander Way, intersection improvements, expansion of rail corridors and facilities, and the  
6 relocation and extension/improvement of utility systems within the Peninsula.

7 The NMCRC Tacoma site is located within the proposed YTTI redevelopment area and includes  
8 some of the TOTE and RRUI elements.

## 9 **1.5 PUBLIC INVOLVEMENT PROCESS**

10 A Notice of Availability (NOA) of the Draft EA will be prepared and mailed to interested  
11 parties. The NOA will also be posted in the *Tacoma News Tribune*. The Draft EA will also be  
12 posted on the BRAC Web site (<http://www.bracpmo.navy.mil>).

## CHAPTER 2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter describes alternatives for the proposed action and considers Navy disposal alternatives and subsequent reuse alternatives. NEPA requires that an EA objectively evaluate a “reasonable” range of alternatives. Under NEPA, reasonable alternatives are those that are practical or feasible from a technical and economic perspective and that are based on common sense (Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations [CEQ 40 Most Asked Questions], 46 Fed. Reg. 18026, March 23, 1981, as amended 51 Fed. Reg. 15618, April 25, 1986).

This chapter of the EA is organized into five primary sections. Section 2.1 discusses Navy disposal alternatives. Section 2.2 discusses the generation of reuse alternatives. Section 2.3 provides a detailed description of the proposed action which is the LRA’s Redevelopment Plan. Section 2.4 includes a description of the reuse alternatives as well as the No Action Alternative. Section 2.5 provides a list of permits and approvals required for the disposal and subsequent reuse of NMCRC Tacoma. Section 2.6 provides a summary comparison of the potential impacts and corresponding mitigation for each alternative.

### 2.1 NAVY DISPOSAL

The Navy can either retain NMCRC Tacoma surplus property in federal ownership (No Action Alternative) or dispose of the property for subsequent reuse (Disposal Alternative). The description of retaining NMCRC Tacoma in federal ownership is included in the No Action Alternative (Section 2.4.2). Navy disposal of surplus property at NMCRC Tacoma is the federal action evaluated in this EA for potential environmental and socioeconomic impacts. Under the federal action, approximately 9.03 acres (3.65 ha) of federal property that comprises NMCRC Tacoma would be conveyed to non-federal entities.

Although it will not retain control of the property after its disposal, the Navy is required, in accordance with DBCRA, to evaluate the reasonable foreseeable impacts arising from reuse. Consequently, this EA evaluates the potential environmental and socioeconomic impacts associated with the reuse of the NMCRC Tacoma property. The federal action, Navy disposal, is assumed as part of each reuse alternative.

### 2.2 REUSE PLANNING PROCESS

In December 2006, an LRA for NMCRC Tacoma was formed with the approval of the DoD OEA for the purpose of preparing a Redevelopment Plan for the NMCRC Tacoma property. Recognition of the LRA by DoD was publicly noticed in the *Federal Register* on December 27, 2006. The LRA is comprised of representatives from the public and private sectors of the greater Tacoma-Pierce County area and includes the following individuals: Deputy Director of the Port of Tacoma, Assistant Director of Community and Economic Development from the City of Tacoma, the Executive Director of the Economic Development Board for Tacoma/Pierce County, the Economic Development Manager of Pierce County, and the President of the Pierce Chamber of Commerce.

1 A Redevelopment Plan was prepared by the LRA based on the results of required screening and  
2 outreach efforts discussed below and on a thorough consideration of social and economic factors  
3 affecting the property. This process, described in detail in the Final Redevelopment Plan (LRA  
4 2007), included substantial public input and technical direction with the OEA, Navy, HUD, the  
5 Port of Tacoma and the City of Tacoma. The Redevelopment Plan was completed and adopted  
6 by the LRA in October 2007. It was then submitted to HUD for their approval relative to  
7 homeless assistance needs, and it is being considered by the Navy in connection with making its  
8 final disposal decision on the NMCRC site.

9 The LRA conducted a public outreach and screening process intended to explore all potential  
10 uses of the NMCRC property. A number of public meetings were held to provide maximum  
11 opportunity to view the property, access information and ask questions. Announcements  
12 regarding the process and invitations to participate were published and meetings were scheduled  
13 to enable as much participation as possible to assist the LRA in preparing the Redevelopment  
14 Plan for NMCRC Tacoma.

15 In accordance with the DBCRA and the Redevelopment Act, part of the public outreach and  
16 screening process was intended to determine the suitability of the property for fulfilling the needs  
17 of the homeless in the Tacoma area. The LRA designed a program intended to reach out to as  
18 many homeless providers as possible. HUD, Pierce County and City of Tacoma Homeless  
19 Associations were contacted to help generate a comprehensive list of potential candidates. These  
20 candidates were contacted and invited to participate in planning the redevelopment of the  
21 NRCMC Tacoma property.

22 The homeless outreach program did not elicit any expressions of interest from homeless  
23 assistance providers for utilizing the NMCRC Tacoma property for homeless related purposes.  
24 This was believed to be due to the fact that as with many military reserve installations throughout  
25 the U.S., housing was never a component of this installation, nor is there other housing in the  
26 vicinity of the property. In addition, the area is heavily industrialized and does not lend itself to  
27 residential development in the foreseeable future.

28 The 90-day period for submitting expressions of interest in the land and facilities at NMCRC  
29 Tacoma by homeless assistance providers and other eligible parties commenced on February 14,  
30 2007. A public meeting was conducted on February 14, 2007 at NMCRC Tacoma at which all  
31 parties that attended (30 people) received a binder of information about the property and an  
32 invitation to participate in submitting a Notice of Interest. The public meeting was followed by a  
33 tour of the property. Subsequent follow-up communications via email were distributed during  
34 the 90-day period. Information regarding the property was also made available on the Port of  
35 Tacoma website.

36 The deadline for submitting Notices of Interest was April 23, 2007. Only two submittals were  
37 received. One was from the Port of Tacoma and the other was from the GEO Group, Inc. The  
38 GEO Group, Inc. is a contractor to the Department of Homeland Security (DHS) which had been  
39 using classrooms at NMCRC Tacoma for training of detention operators. After discussions with  
40 the Navy and DoD OEA, it was determined The GEO Group, Inc. did not qualify under any  
41 Federal programs to acquire an interest in the property and they were so notified.

1 A public meeting was held on September 15, 2007 by the LRA's Redevelopment Planning Team  
2 to review the Redevelopment Plan. The meeting included an overview of the proposed plan and  
3 invitations to the public to contribute and discuss their ideas regarding the future use of the site.  
4 The draft Redevelopment Plan was available both electronically and in hard copy upon request.  
5 All known stakeholders were invited to review the plan prior to the meeting. Notice was also  
6 provided in the local newspapers regarding the availability of the information.

7 The redevelopment planning strategy was directed toward achieving the highest and best use of  
8 the NMCRC property while taking into consideration relevant social and economic factors.  
9 Ultimately that strategy focused planning efforts on the goals of economic development and the  
10 creation of jobs within the context of the existing Port of Tacoma Master Plan.

11 The conclusion reached through the LRA's outreach and planning effort was that the highest and  
12 best use of the NMCRC property would be achieved through a Redevelopment Plan which was  
13 in itself a specific part of the larger Port of Tacoma Master Plan. It was concluded that the given  
14 the size, location and industrialized nature of the property, it would be impracticable to redevelop  
15 for uses not directly related to the Port's actively expanding terminal operations.

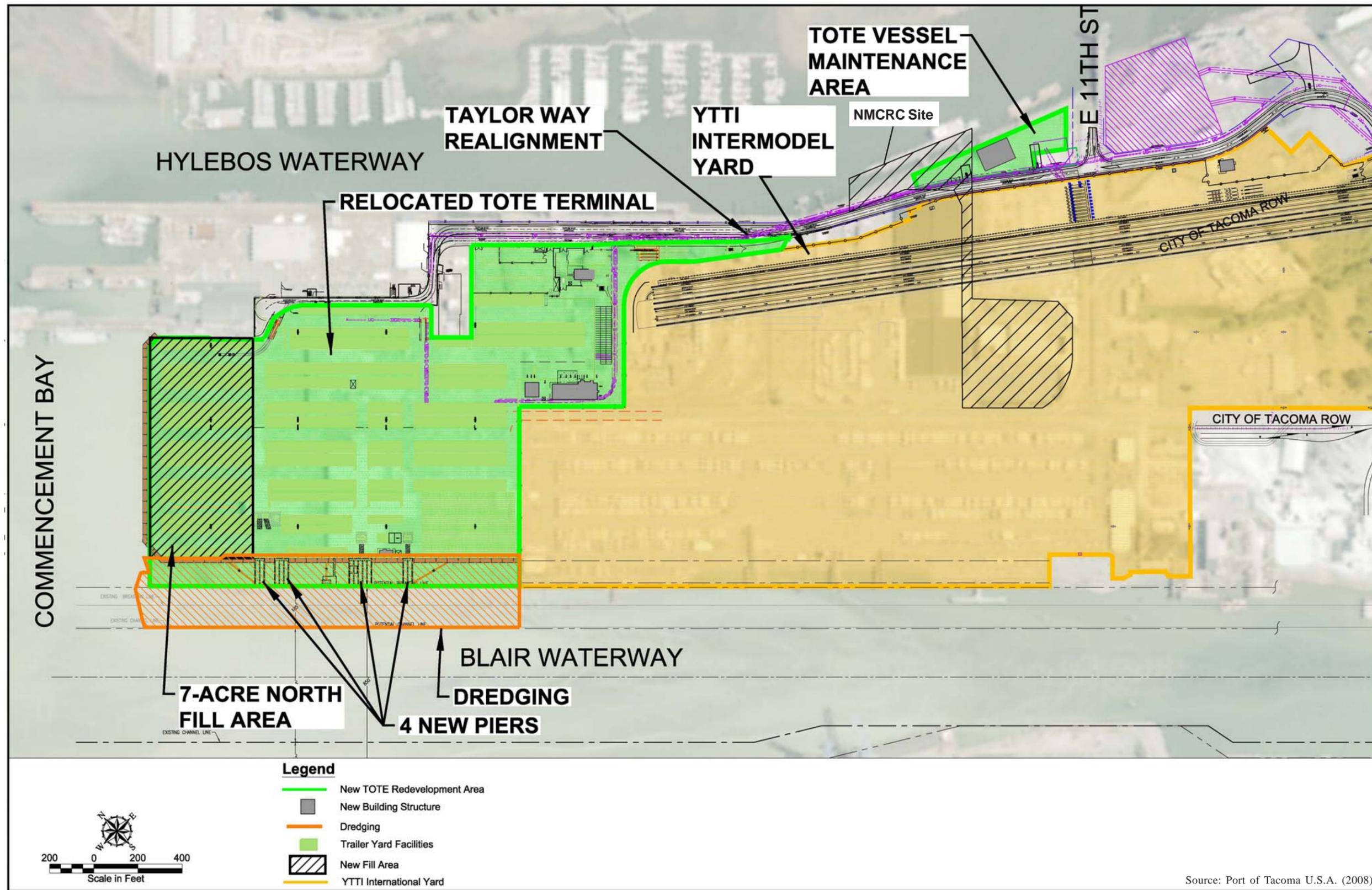
### 16 **2.3 DETAILED DESCRIPTION OF PROPOSED ACTION**

17 As required by DBCRA, the Redevelopment Plan prepared by the LRA is to be treated as part of  
18 the proposed federal action. As discussed in Section 2.2, it was concluded in the Redevelopment  
19 Plan that the highest and best use for the NMCRC Tacoma property would be inclusion into the  
20 Port's Master Plan. As discussed in Section 1.4, the Port is proposing a comprehensive master  
21 redevelopment program for Blair Peninsula transforming the existing industrial and commercial  
22 landscape into primarily international and marine terminal facilities. The redevelopment program  
23 includes road, rail and utility infrastructure (RRI) to support marine terminals. As shown on  
24 Figure 2-1, the Proposed Action site is located within the proposed YTTI redevelopment area  
25 and also includes portions of the TOTE and RRI redevelopment areas. Specifically, the  
26 proposed action would result in the following development on the NMCRC property:

- 27 • A portion of the YTTI inter-modal rail yard;
- 28 • YTTI main truck gate;
- 29 • A portion of the new vessel maintenance area for TOTE; and
- 30 • Portions of the RRI

31 The NMCRC site is located near the functional center of the envisioned 167-acre (68-ha) YTTI  
32 Terminal. Elements of the planned YTTI Terminal's container yard, intermodal rail yard, and  
33 truck gate are proposed within the NMCRC property. A portion of the new intermodal working  
34 rail would cross the NMCRC site to serve the YTTI Terminal. The intermodal yard would  
35 connect back to arrival/departure track and storage facilities located on the southern portion of  
36 the Peninsula. Rail access to existing rail-served customers would be maintained. The YTTI  
37 Intermodal Yard would provide six working tracks spanned by overhead rail-mounted gantry  
38 cranes. The containers would be lifted from truck chassis or bombcarts to/from railcars by  
39 overhead cranes.

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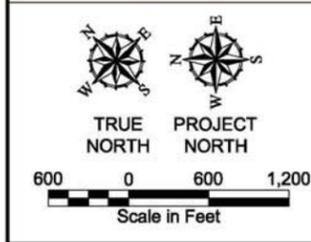
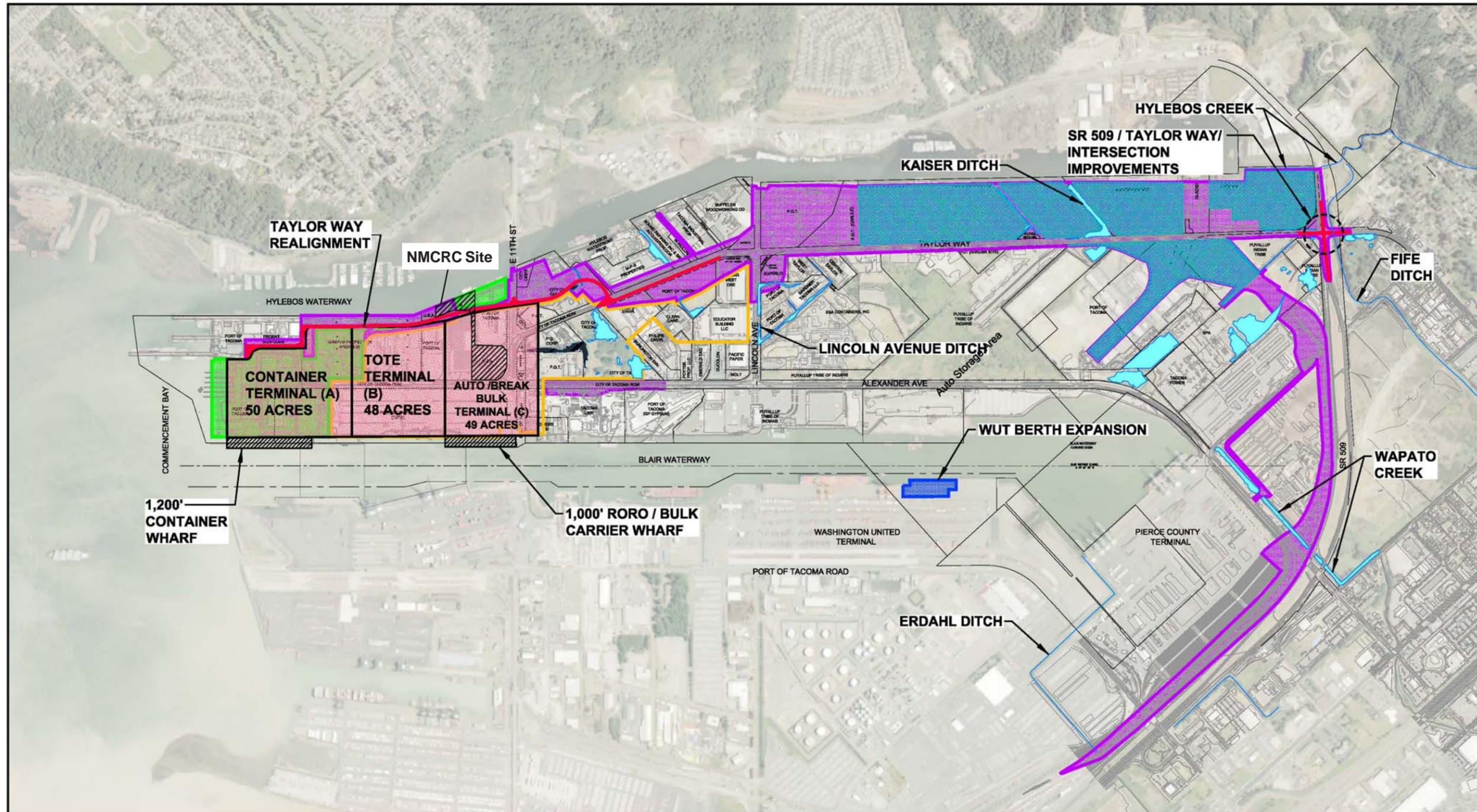


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### Proposed Reuse Elements on NMCRC Site

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 2-1



Legend	
	Approximate location of wetlands, ditches, stormwaters, streams, and Wapato Creek not impacted by the no action
	New TOTE Redevelopment Area
	YTTI Redevelopment Area
	RRI Redevelopment Area
	WUT Redevelopment Area
	Roadway Improvements
	Auto Storage Area
	Approximate location of surface water features impacted by the Port's No Action Alternative
	NMCRC Site

Source: Port of Tacoma U.S.A. (2008)

### Alternative 1

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 2-2

1 The main truck gate for the YTTI Terminal would be provided via Taylor Way near 11<sup>th</sup> Street.  
2 The truck gate would be equipped with cameras, intercoms, radiation monitors and other modern  
3 security features required by US Customs and Border Control and the YTTI Security Plan.

4 The new vessel maintenance area for TOTE would be partially located on the northeastern  
5 portion of the NMCRC site adjacent to the Hylebos Waterway (Figure 2-1). The proposed vessel  
6 maintenance building associated with the TOTE facility would be located directly east of the  
7 NMCRC boundary. According to the *Blair-Hylebos Terminal Redevelopment Program Draft*  
8 *EIS*, this building would be a one-story, 31-foot-high (9.4-meter) warehouse containing  
9 approximately 15,000 square feet (1,400 square meters) of building space.

10 The Port's RRI program includes redevelopment of portions of the road and rail infrastructure to  
11 improve service and expand capacity required for existing and new terminal uses. One of the  
12 proposed improvements includes the extension of Taylor Way, which currently terminates at 11<sup>th</sup>  
13 Street, through the NMCRC site. The proposed roadway corridor would be located adjacent to  
14 Hylebos Waterway in order to maintain access to the existing land uses as well as the  
15 reconfigured and expanded TOTE Terminal. The road would consist of two 12-foot (3.7-meter)  
16 lanes with 8-foot (2.4-meter) shoulders and no sidewalks. It is assumed that the portion of  
17 Taylor Way through the NMCRC site would be a private road.

18 All of the buildings on the NMCRC site would be demolished in order to accommodate the  
19 YTTI rail intermodal yard, the vessel maintenance area and the extension of Taylor Way. The  
20 site would then be re-graded (along with the rest of the Port redevelopment project area) and  
21 placement of fill would occur to raise the on-site elevation by approximately one to four feet (0.3  
22 to 1.2 meters). The wharf structures would remain and would not be demolished.

23 Existing utility infrastructure would either be abandoned in place, remain in place where  
24 feasible, or be relocated to accommodate the Port's full-buildout development plan for the Blair  
25 Peninsula. The utilities relocation would primarily occur in easements along the relocated  
26 Taylor Way corridor. Utilities would be above or below ground as required by code or by the  
27 direction of the utility provider.

## 28 **2.4 ALTERNATIVES TO THE PROPOSED ACTION**

### 29 **2.4.1 Alternatives Eliminated From Detailed Review**

30 In determining the scope of alternatives to be considered under NEPA, the emphasis is on what  
31 is "reasonable." The term "reasonable" is used primarily to insure that federal agencies  
32 preparing environmental documents make the effort to explore a number of common sense-based  
33 alternatives that meet the purpose and need of the proposed action. Reasonable alternatives  
34 include those that are practical or feasible from a technical and economic standpoint (Question  
35 2a, CEQ 40 Most Asked Questions, 46 Fed. Reg. 18026 [March 23, 1981]). An alternative can  
36 be eliminated from further discussion if it does not meet the purpose and need of the proposed  
37 action.

38 During the reuse planning process, the LRA developed a purpose and need statement that served  
39 as the basis for evaluating reuse alternatives and for refining the Redevelopment Plan. This  
40 purpose and need focused on reusing NMCRC Tacoma property to support the highest and best  
41 use of the property while taking into consideration relevant social and economic factors. The  
42 LRA concluded in its Redevelopment Plan that the highest and best use of the property was for

1 inclusion in the Port's current plans to expand their maritime facilities. It was also concluded  
2 that the size, location and character of the NMCRC site made it impracticable to redevelop for  
3 uses not directly related to the Port's actively expanding terminal operations. Therefore, any  
4 reuse alternatives not associated with the Port's terminal operations were eliminated from further  
5 discussion.

#### 6 **2.4.2 Detailed Description of Reuse Alternative to the Proposed Action (Alternative 1)**

7 This section provides a detailed description of the reuse alternative (Alternative 1) which has  
8 been carried forward for evaluation in this EA. Navy disposal is assumed as part of this reuse  
9 alternative. Alternative 1 represents redevelopment of the NMCRC Tacoma site in accordance  
10 with the probable land uses and levels of activity under existing industrial zoning should the Port  
11 not move forward with its master redevelopment program for the Blair Peninsula. This  
12 alternative was derived from the *Blair-Hylebos Terminal Redevelopment Program EIS* and is  
13 referred to as the "No Action" alternative in the Port's EIS. Under this alternative, it is assumed  
14 that some level of redevelopment would occur on the Blair Peninsula through the buildout  
15 horizon year (2013), including the development of two new cargo and container terminals,  
16 retention of the TOTE operations at its current terminal, additional auto/break bulk storage and  
17 improvements at the Washington United Terminal.

18 Under Alternative 1, Taylor Way would be extended through the NMCRC site in the same  
19 alignment as the Proposed Action (Figure 2-2). There would be no rail improvements on the  
20 NMCRC Tacoma site. As shown in Figure 2-2, the remaining portion of the NMCRC site would  
21 include portions of Terminal C. According to the Port's EIS, Terminal C would occupy 49 acres  
22 (19.8 ha) and would include construction of four buildings for operation which would occupy  
23 approximately one acre (0.4 ha). It is anticipated that Terminal C would accommodate either an  
24 auto or a break bulk (cargo transported not in a container which could be in loose packages or  
25 loose form) and would include terminal facilities and cranes for cargo loading and unloading.

26 It is assumed that the existing buildings on the NMCRC site would be demolished to provide  
27 space for the extension of Taylor Way corridor as well as additional area for elements of the  
28 Terminal C described above. Similar to the Proposed Action, the wharf structures would remain  
29 and would not be demolished.

30 Existing utility infrastructure would either be abandoned in place, remain in place where  
31 feasible, or relocated to accommodate the probable land uses and levels of activity under existing  
32 industrial zoning for the Blair Peninsula. The primary location for relocation would occur in  
33 easements along the relocated Taylor Way corridor. Utilities would be above or below ground as  
34 required by code or by the direction of the utility provider.

#### 35 **2.4.3 No Action Alternative**

36 No action may be defined as the continuation of an existing plan, policy, or procedure or as a  
37 failure to implement an action. The No Action Alternative provides a benchmark to compare the  
38 magnitude of the environmental effects of the various reuse alternatives.

39 Under the No Action Alternative, the Navy would retain ownership of NMCRC Tacoma. After  
40 the facility is closed in 2010, all buildings would remain vacant and all facilities would remain  
41 unused. The property would be held in an inactive or caretaker status. No construction would  
42 occur under this alternative.

## 1 2.5 PERMIT REQUIREMENTS AND RELATED COORDINATION

2 Approvals and permits would be required for the disposal and subsequent reuse of NMCRC  
 3 Tacoma. Table 2-1 lists the federal, state, and local permits, and actions that may be required  
 4 and lists the agencies that may use the information presented in this EA to make decisions  
 5 regarding issuance of permits or approvals.

<b>Table 2-1 Permits or Actions Potentially Required</b>		
<b>Issuing Agency</b>	<b>Permit or Action</b>	<b>Requirement</b>
<b>Permits Required Prior to Disposal</b>		
U.S. Environmental Protection Agency; Department of Ecology	CERCLA, 42 U.S.C. §§ 9601-9675	Requires deed that contains hazardous substance information and, in most cases, covenant warranting necessary remedial action has been taken or, in an early transfer, deferral with governor's approval.
State of Washington Department of Archaeology and Historic Preservation (DAHP)	National Historic Preservation Act, Section 106 Compliance, 16 U.S.C. § 470f (West 1985 & Supp. 1998)	Requires the Navy to take into account effects on historic properties by following the procedures found in the regulations implementing Section 106. The DAHP concurred with the findings of the Historic Resources Survey report in a letter dated March 25, 2009 that the NMCRC Tacoma site is not eligible for the National Register of Historic Places either as a district or as individual buildings. The DAHP concurrence letter is included in Appendix A of this EA.
Department of Ecology	Coastal Zone Management Act of 1972 (16 U.S.C. 1451 – 1456)  State of Washington Coastal Zone Management Program – Federal Consistency	Requires the Navy to prepare a federal consistency determination. The determination describes the activity and whether the activity impacts coastal resources.

<b>Table 2-1 (cont.) Permits or Actions Potentially Required</b>		
<b>Issuing Agency</b>	<b>Permit or Action</b>	<b>Requirement</b>
<b>Permits Related to Reuse/Responsibility of Local Reuse Authority</b>		
U.S. Environmental Protection Agency; U.S. Army Corps of Engineers	River and Harbors Act, Sections 9 and 10, 33 U.S.C. §§ 401, 403	Permit required for future construction in navigable waters of the U.S.
U.S. Environmental Protection Agency; Department of Ecology	National Pollutant Discharge Elimination System (NPDES) Permit under Clean Water Act Section 402, 33 U.S.C. § 1342	Required for discharge of pollutants from any point source in waters of the U.S. and for stormwater discharges associated with industrial activity and from large and medium municipal storm sewer systems. US EPA must endorse NPDES permits issued by the Department of Ecology. Requires preparation and implementation of a storm water pollution prevention plan (SWPPP) and associated monitoring.
Department of Ecology	Coastal Zone Management Certification	Certification that project would not impact coastal zone
City of Tacoma	Shoreline Management Act Substantial Development Permit Approval	Permit required for development in a coastal zone
City of Tacoma	Demolition Permit Approval Grading Permit Approval Building Permit Approval	Various permits and approvals required to accommodate proposed reuse development.
City of Tacoma	Stormwater Management Plan Approval	Approval required by City of Stormwater Management Plan.
US Coast Guard	Aid to Navigation Permit	Permit required for navigational hazards.
Port of Tacoma	EIS certification Consistency with Port Policies Redevelopment Plan adoption	Various permits and approvals required to accommodate proposed reuse development.

## 1 **2.6 SUMMARY OF ENVIRONMENTAL CONSEQUENCES**

2 This section provides a comparison of environmental consequences and mitigation measures  
3 between the proposed action, Alternative 1 and the No Action Alternative (Table 2-2).

**Table 2-2  
Summary of Potential Environmental Consequences by Resource**

<i>Resource Area</i>	<i>Proposed Action</i>	<i>Alternative 1</i>	<i>No Action Alternative</i>
Land Use	The proposed action would be consistent with the Land Use Designation identified in the City of Tacoma Comprehensive Plan, and would be consistent with zoning for the site and the City’s long-term vision for the area. The proposed action would not result in any land use incompatibilities with adjacent or nearby land uses. Therefore, no significant land use impacts would result from the proposed action. No mitigation is required.	Alternative 1 would result in development of the NMCRC site consistent with the Land Use Designation identified in the City of Tacoma Comprehensive Plan, and would be consistent with zoning for the site and the City’s long-term vision for the area. Alternative 1 would introduce uses similar to those already occurring in the area and not result in any land use incompatibilities with adjacent or nearby land uses. Therefore, no significant land use impacts would result from implementation of Alternative 1. No mitigation is required.	The existing facilities within the NMCRC site would remain in place and unused under this alternative, with the property held in an inactive or caretaker status, resulting in no significant land use impacts. No mitigation is required.
Visual Resources	The proposed action would change the appearance of the existing NMCRC site through the demolition of existing structures and the construction of new structures. However, new uses to the site are consistent with surrounding development in size, scale, and type. New lighting at the NMCRC site would be consistent with <i>Port of Tacoma Environmental Compliance Program Manual</i> policies and procedures related to lighting. Therefore, no significant impacts to visual resources would occur. No mitigation is required.	Alternative 1 would result in alterations to the appearance of the site via demolition and construction activities. However, new structures that would be constructed under Alternative 1 would be similar to adjacent uses and the change would not result in the creation of any structures that could be considered visibly intrusive. Alternative 1 would not introduce substantial new sources of light and glare to the area. No significant visual resources impacts would occur as a result of Alternative 1. No mitigation is required.	While the No Action Alternative would not substantially change the existing visual appearance of the site as all of the existing structures would remain, a slight visible change associated with the property being unoccupied would occur. No significant impact to visual resources would occur. No mitigation is required.
Socioeconomics	The proposed action would result in the creation of approximately 166 jobs and would contribute to the overall Port redevelopment plan, which would also generate a large number of jobs. These jobs are likely to be filled by persons already living locally in the area, and would not induce population growth, result in the need for construction of new housing, or impact schools. No significant socioeconomic impacts would occur as a result of the proposed action and no mitigation is required.	Alternative 1 would result in the creation of new jobs that are likely to be filled by persons already residing within or near Tacoma. Alternative 1 would not result in a decrease in employment, growth inducement, demand for additional housing, or increased student enrollment in local schools. No significant socioeconomic impacts would occur as a result of Alternative 1 and no mitigation is required.	Under the No Action Alternative, the NMCRC would remain in place and unused under this alternative, with the property held in an inactive or caretaker status. No significant socioeconomic impacts would occur and no mitigation would be required.

<b>Table 2-2 (cont.)</b>			
<b>Summary of Potential Environmental Consequences by Resource</b>			
<i>Resource Area</i>	<i>Proposed Action</i>	<i>Alternative 1</i>	<i>No Action Alternative</i>
Cultural Resources	While the proposed action would result in the removal of all structures at the site, none of the structures is considered eligible for the National Register of Historic Places. The proposed action would not result in any significant impacts to archaeological resources due to disturbance at the site associated with fill activities and industrial activities. Implementation of the proposed action would result in no significant impacts to cultural resources. No mitigation is required.	No structures present on-site are considered eligible for the National Register of Historic Places and no archaeological resources are anticipated to be present in the area due to disturbance at the site associated with fill activities and industrial activities. Implementation of Alternative 1 would not result in any significant impacts to cultural resources and no mitigation is required.	No demolition of structures on the NMCRC site would occur. There would be no significant impacts to historic resources or archaeological resources as a result of the No Action Alternative and no mitigation would be required.
Transportation	The NMCRC site would generate approximately 120 net new daily trips under the proposed action. During the PM peak hour, the NMCRC site would generate less traffic than is currently being experienced. Five intersections would operate at LOS E or worse under the proposed action. These five intersections would also operate at deficient levels under the No Action scenario; therefore, the proposed action does not cause the deficiencies. The proposed action would not result in any significant traffic impacts associated with LOS, demand on public transportation, demand on pedestrian and bicycle facilities, construction truck traffic, parking, emergency access, or goods movement. No mitigation is required.	Alternative 1 would result in a reduction of 51 daily trips associated with the NMCRC site. During the PM peak hour, the NMCRC site would generate less traffic than is currently being experienced. Four intersections would operate at LOS E or worse under Alternative 1. These four intersections would also operate at deficient levels under the No Action scenario; therefore, Alternative 1 does not cause the deficiencies. However, Alternative 1 would improve operations to LOS D at the Taylor Way/SR 509 – Marine View Drive intersection as less traffic would be coming to and from the Port. Emergency access would not be improved with Alternative 1 due to the closure of Alexander Avenue north of SR 509. As the closure of Alexander Avenue would occur as part of the overall development of the area, and not as a result of the disposal and reuse of the NMCRC site, no significant impacts associated with emergency access would occur as a result of Alternative 1. Additionally, Alternative 1 would result in increased train blockage of area roadways; however, this increase would occur as a result of development consistent	Five study intersections would operate at LOS E or worse under the No Action Alternative. The No Action Alternative would not generate any trips that would significantly contribute to the existing congestion and LOS deficiencies at any intersections. The No Action Alternative would not result in any significant traffic impacts associated with LOS, demand on public transportation, demand on pedestrian and bicycle facilities, construction truck traffic, parking, emergency access, or goods movement. No mitigation is required.

<b>Table 2-2 (cont.)</b>			
<b>Summary of Potential Environmental Consequences by Resource</b>			
<i>Resource Area</i>	<i>Proposed Action</i>	<i>Alternative 1</i>	<i>No Action Alternative</i>
Transportation (cont.)		with the Port's master plan, not as a result of the disposal and reuse of the NMCRC site. Alternative 1 would not result in any significant traffic impacts associated with LOS, demand on public transportation, demand on pedestrian and bicycle facilities, construction truck traffic, parking, emergency access, or goods movement. No mitigation is required.	
Air Quality	The proposed action would result in increases in emissions of air pollutants; however, estimated emissions associated with construction and operation of the proposed action would be below the <i>de minimis</i> thresholds for CO and PM <sub>10</sub> , and would be below major source thresholds for all other pollutants. No significant air quality impacts would occur. The proposed action would satisfy the conditions of a Clean Air Act Record of Non-Applicability. No mitigation is required.	Emissions associated with Alternative 1 would be below the <i>de minimis</i> thresholds for CO and PM <sub>10</sub> , and would be below major source thresholds for all other pollutants. No significant air quality impacts would occur. No mitigation is required.	Because no construction or operational activities would occur, no air emissions would result from the No Action Alternative. The No Action Alternative would therefore not result in any impacts on the air quality in the area. No mitigation is required.
Noise	Proposed demolition/construction activities and site operations would conform with all applicable regulatory requirements, including schedules and noise abatement criteria. Accordingly, no significant noise impacts would be associated with implementation of the proposed action and no mitigation is required.	Proposed demolition/construction activities and site operations would conform with all applicable regulatory requirements, including schedules and noise abatement criteria. Accordingly, no significant noise impacts would be associated with implementation of Alternative 1 and no mitigation is required.	Noise generated at the NMCRC would largely cease as the property would be held in caretaker status. No new noise sources would occur and there would be no significant noise impacts. No mitigation is required.

<b>Table 2-2 (cont.)</b>			
<b>Summary of Potential Environmental Consequences by Resource</b>			
<i>Resource Area</i>	<i>Proposed Action</i>	<i>Alternative 1</i>	<i>No Action Alternative</i>
Biological Resources	The proposed action would not result in any direct impacts to biological resources associated with the terrestrial portions of the NMCRC site. Compliance with NPDES Construction Discharge Permit (and related local standards) would reduce impacts to sensitive species located within the Hylebos and Blair waterways to a less than significant level. The proposed action would result in no significant impacts to biological resources. No mitigation is required.	Alternative 1 would not result in any direct impacts to biological resources associated with the terrestrial portions of the NMCRC site. Sensitive species located within the Hylebos and Blair waterways could be affected by degradation of water quality due to runoff from the site. Compliance with NPDES Construction Discharge Permit (and related local standards) would reduce impacts to sensitive species located within the waterways to a less than significant level. Alternative 1 would result in no significant impacts to biological resources. No mitigation is required.	Under this alternative, the site would remain unchanged and in caretaker status. No significant impacts to biological resources would occur. No mitigation is required.
Geology and Soils	The site is located within a seismically active area, with potential for liquefaction, lateral spreading, and settlement. Adherence to geotechnical/engineering recommendations and applicable regulatory and/or industry standards would avoid significant impacts because exposure would not result in risks higher than commonly accepted. No mitigation is required.	The site is located within a seismically active area, with potential for liquefaction, lateral spreading, and settlement. Adherence to geotechnical/engineering recommendations and applicable regulatory and/or industry standards would avoid significant impacts because exposure would not result in risks higher than commonly accepted. No mitigation is required.	No impacts to geology or soils would occur. No mitigation is required.

<b>Table 2-2 (cont.)</b>			
<b>Summary of Potential Environmental Consequences by Resource</b>			
<i>Resource Area</i>	<i>Proposed Action</i>	<i>Alternative 1</i>	<i>No Action Alternative</i>
Water Resources	The proposed action would result in alterations to drainage facilities on-site, but overall existing drainage patterns would not be substantially altered. Construction and operational activities could result in potential water quality impacts associated with erosion, hazardous materials use, and demolition debris. However, the proposed action would be required to comply with applicable NPDES requirements and conditions of the grading permit and storm water pollution plan. No significant flooding impacts would result from the proposed action in association with surcharged storm drain facilities, tsunamis, or sea level rise. No significant water resources impacts would occur and no mitigation is required.	Drainage facilities on-site would be modified under Alternative 1, but overall existing drainage patterns would not be substantially altered. Construction and operational activities could result in potential water quality impacts associated with erosion, hazardous materials use, and demolition debris. Alternative 1 would be required to comply with applicable NPDES requirements. No significant flooding impacts associated with surcharged storm drain facilities, tsunamis, or sea level rise would occur. No significant water resources impacts would occur and no mitigation is required.	The No Action Alternative would result in somewhat greater potential impacts related to flooding hazards from surcharged storm drain facilities than described for either of the development alternatives. No storm drain improvements would occur under the No Action Alternative. Existing facilities subject to surcharging include outfall nos. 550 and 554, which may not be adequate to convey flows from larger storm events. However, the inadequacies do not indicate a major flooding concern, so no significant impacts would occur. No mitigation is required.
Utilities	New utility infrastructure would be provided for the proposed action as part of the overall Port redevelopment plan. Utility improvements would be constructed as part of the proposed action and sized to adequately meet demand. No significant impact would occur and no mitigation is required.	Alternative 1 would require upgrades and/or installation of new utilities to serve the site. As these utilities would be designed and installed as a piece of the larger terminal development area, they would be sized appropriately to adequately handle demand. For this reason, no significant impacts to utilities would occur and no mitigation is required.	Demand for utilities at the site would decrease to levels necessary for caretaker status. Storm drain conditions would not change. The No Action Alternative would have no impact on either the capacity or function of on-site utility systems and no construction of any on-site utility systems would be required. No significant impacts would occur and no mitigation is required.

<b>Table 2-2 (cont.)</b>			
<b>Summary of Potential Environmental Consequences by Resource</b>			
<i>Resource Area</i>	<i>Proposed Action</i>	<i>Alternative 1</i>	<i>No Action Alternative</i>
Public Services	While not a part of the proposed action, as a result of the overall Port redevelopment plan, the demolition of Fire Station would occur. The Port is coordinating with the Tacoma Fire Department to ensure continued fire response service to the Peninsula during construction and with operation of overall Port redevelopment plan. The loss of Tacoma Fire Station #15 would be addressed by providing alternative service to the area within acceptable response times, either via the construction of a new facility or coverage of the area by existing fire stations. No new police facilities would be required and no increase need for emergency medical services would result from the proposed action. No significant public service impacts would occur and no mitigation is required.	Tacoma Fire Station #15 would remain in its current location and continue to operate. Alternative 1 would not result in the development of the site with uses which are likely to require increased fire protection, police protection, or emergency medical services demand. No significant public service impacts would occur and no mitigation is required.	With the site being held in caretaker status, demand for fire protection, police protection, and emergency medical services would decrease. No significant impacts would occur and no mitigation is required.
Hazardous Materials and Waste	Hazardous wastes generated at the NMCRC site consists of used oil and antifreeze, flammable solvents, and flammable debris. All hazardous materials and wastes (other than structural materials such as asbestos and lead-based paint) would be removed in accordance with the NMCRC hazardous waste management plan before the property is transferred or conveyed. Construction and operation associated with the proposed action would involve the on-site use and storage of hazardous materials. Compliance with local, state, and federal regulations relating to the potential use, or storage of hazardous materials would minimize risks of an accidental release. Additionally, adherence to regulatory requirements during the removal of asbestos containing materials, lead-based paint, and	The routine transport, use, or disposal of hazardous materials, substances, or wastes would occur with implementation of Alternative 1. All hazardous wastes and hazardous materials other than structural materials such as asbestos and lead-based paint would be removed in accordance with the NMCRC hazardous waste management plan before the property is transferred or conveyed.  As discussed for the proposed action, these earthwork activities are not likely to disturb subsurface petroleum-contaminated soil in the vicinity of Site 1, former AST area, and the former UST 2 and UST 4 areas. Re-grading at the site will add 1 to 4 feet (0.3 to 1.2 meters) of clean fill soil. In addition, the	All hazardous wastes and hazardous materials other than structural materials such as asbestos and lead-based paint (LBP) would be removed in accordance with the NMCRC hazardous waste management plan before the property was placed in inactive or caretaker status. ACM left in existing buildings would not be impacted as normal maintenance operation in buildings would not release ACM. The former USTs and petroleum-contaminated soil above cleanup goals have been removed. The ongoing site investigations and/or remedial actions associated with offsite clean-up activities would also continue. The No Action Alternative would not have any significant impact associated with hazardous materials and environmental contamination.

<b>Table 2-2 (cont.)</b>			
<b>Summary of Potential Environmental Consequences by Resource</b>			
<i>Resource Area</i>	<i>Proposed Action</i>	<i>Alternative 1</i>	<i>No Action Alternative</i>
<p>Hazardous Materials and Waste (cont.)</p>	<p>polychlorinated biphenyls would ensure no significant impact related to the accidental release of these materials would occur.</p> <p>Earthwork activities are not likely to disturb subsurface petroleum-contaminated soil in the vicinity of Site 1, former AST area, and the former UST 2 and UST 4 areas. Re-grading at the site will add 1 to 4 feet (0.3 to 1.2 meters) of clean fill soil. In addition, the top of the USTs is generally at 4 to 5 feet (1.2 to 1.5 meters) below ground surface. As discussed in Section 4.10 (<i>Water Resources</i>), potential erosion and sedimentation impacts associated with earthwork activities would be addressed through required conformance with the NPDES Construction Discharge Permit (and related locals standards) as well as requirements of the grading permit. If any evidence of contaminated soils is observed during grading (or other construction) activities, appropriate remediation would be implemented pursuant to applicable regulatory requirements (e.g., testing and appropriate disposal of contaminated soils).</p> <p>Long-term operation and maintenance activities under the proposed action would also involve continuing the on-going site investigations and/or remedial actions associated with offsite clean-up activities. Continued access to the monitoring well located at NMCRC Tacoma would ensure that no significant impacts would occur.</p>	<p>top of the USTs is generally at 4 to 5 feet (1.2 to 1.5 meters) below ground surface. As discussed previously, potential surface transport of soil (erosion and sedimentation) would be addressed through required conformance with the NPDES Construction Discharge Permit (and related locals standards) as well as requirements of the grading permit. In addition, as noted above in Section 4.13.1, if any evidence of contaminated soils is observed during construction activities, appropriate remediation would be implemented pursuant to applicable regulatory requirements (e.g., testing and appropriate disposal of contaminated soils).</p> <p>Alternative 1 would also involve continuing the site investigations and/or remedial actions associated with offsite clean-up activities. Continued access to the monitoring well located at NMCRC Tacoma would ensure that no significant impacts would occur.</p>	

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**CHAPTER 3.0**  
**AFFECTED ENVIRONMENT**

Chapter 3 sets forth the affected environment of the proposed action. The affected environment describes the present physical conditions within the area of the proposed action. The area, or region of influence, is defined for each environmental issue based upon the aerial extent of physical resources that may be affected directly or indirectly by the proposed action and appropriate guidelines of regulatory agencies or common professional practice. Table 3.1-1 summarizes the environmental issues and associated region of influence described in the affected environment sections of this EA.

<b>Environmental Issue</b>	<b>Region of Influence</b>
Land Use	Redevelopment plan area
Visual Resources	Redevelopment plan area and viewshed
Socioeconomics	Pierce County
Cultural Resources	Redevelopment plan area
Transportation	Blair Peninsula
Air Quality	Puget Sound area
Noise	Redevelopment plan area
Biological Resources	Redevelopment plan area, the adjacent Hylebos Waterway, and the nearby Blair Waterway
Geology and Soils	Geology: Puyallup River Valley Soils: Redevelopment plan area
Water Resources	Redevelopment plan area and Blair and Hylebos waterways
Utilities	Tacoma and regional utility service areas
Public Services	Tacoma
Hazardous Materials and Waste	Redevelopment plan area

This section of the EA describes the baseline conditions for each environmental resource against which the potential impacts of the proposed action will be compared. Generally, the baseline used for the analysis of environmental impacts under NEPA reflects the conditions present at or about the time the EA is initiated. However, in the case of closures of military installations, EA documents often are initiated in the trough between full-scale military operations at the former military installation and commencement of the civilian redevelopment project being studied. Because the trough is temporary, constantly changing, and a wholly artificial situation that cannot provide a stable and meaningful basis for measuring the environmental impact of subsequent redevelopment, military closure EAs typically use pre-closure conditions during full operations as a baseline to realistically reflect the environmental impact of reuse. However, in the case of the NMCRC site, operations at the site at the initiation of the EA were representative of full operation at the site. While the site has historically had higher levels of operations, some

1 of these operations had ceased at the site prior to the 2005 closure decision, and were not  
2 related to the closure action. Therefore, the environmental baseline year for the EA is  
3 2008.

### 4 **3.1 LAND USE**

5 This section describes regulatory considerations, the LRA's Redevelopment Plan and  
6 land uses within the NMCRC Tacoma property and surrounding land. Land uses reflect  
7 the baseline (2008) conditions.

#### 8 **3.1.1 Regulatory Considerations**

9 The following subsections discuss the public plans, policies, and regulatory agencies that  
10 affect disposal and reuse of NMCRC Tacoma.

#### 11 **City of Tacoma**

12 The NMCRC site is located within the jurisdictional boundaries of the City of Tacoma.  
13 Development of the NMCRC site would be subject to Tacoma policies, plans, and  
14 regulations, the Tacoma Planning Commission and/or Tacoma Planning Department.

#### 15 City of Tacoma Comprehensive Plan

16 The City of Tacoma Comprehensive Plan is a compilation of 24 policy plans and  
17 implementation programs which provides a map for the City's development over a  
18 twenty-year time period. The Comprehensive Plan is long-term plan that addresses all  
19 factors that influence or are influenced by the physical development of the City. It  
20 contains policies to address development of all land use types within the City.

21 The Comprehensive Plan separates the City into eight neighborhoods. The NMCRC site  
22 is located in the New Tacoma Neighborhood, which consists of a mix of industrial,  
23 residential, and commercial land uses. The NMCRC property is within an area identified  
24 by the Comprehensive Plan's Generalized Land Use Plan Map as a  
25 Manufacturing/Industrial Center with high land use intensity (City of Tacoma 2007a).  
26 Manufacturing/Industrial centers are employment concentrations of local and/or regional  
27 importance which are well served by major transportation facilities and are priority  
28 locations for future growth and infrastructure investment. High intensity industrial areas  
29 provide goods for local, regional, national, and international markets and often consist of  
30 heavy manufacturing, processing, refining, shipping operations, general warehousing,  
31 and rail distribution yards. These areas often generate large amounts of automobile,  
32 truck, rail, or waterborne traffic and require direct access to major transportation routes.  
33 The Port Industrial area is one of the two principal high intensity industrial areas in the  
34 City. The NMCRC site is also designated as a "Tier 1 –Primary Growth Area" by the  
35 Comprehensive Plan, which are identified as areas already characterized by urban  
36 development. Tier 1 Primary Growth Areas include mixed-use centers and major  
37 employment centers.

## 1 Master Program for Shoreline Development

2 The Tacoma Master Program for Shoreline Development includes goals, policies and  
3 development regulations for all shoreline areas including Commencement Bay and its  
4 waterways, the Narrows, and Wapato Lake. The City of Tacoma first adopted the Master  
5 Program for Shoreline Development in 1976, with the most recent comprehensive  
6 amendment to the Program completed in 1996. There are two main components to the  
7 Master Program for Shoreline Development. Part I is the Shoreline Plan, which provides  
8 long-range goals and policies adopted by resolution. Part II establishes shoreline  
9 districts, shoreline environment designations, use regulations, and permitting procedures  
10 to govern development and other activities in the City's shorelines.

11 The City of Tacoma is currently undergoing an update to the adopted Master Program for  
12 Shoreline Development; however, the 1996 Master Program for Shoreline Development  
13 is the currently adopted program. The in-progress update to the Master Program for  
14 Shoreline Development is "an extensive overhaul of the program requiring the City to re-  
15 evaluate all shoreline policies, designations and regulations and must be based upon  
16 scientific and technical information to assure no net loss of shoreline ecological functions  
17 while providing for appropriate uses within shoreline areas" (City of Tacoma, 2008). A  
18 recommendation regarding the Master Program for Shoreline Development is expected in  
19 early 2009.

## 20 City of Tacoma Land Use Regulatory Code

21 The Tacoma Land Use Regulatory Code (Title 13 of the Tacoma Municipal Code)  
22 establishes land use procedures including the land uses permitted within zoning districts  
23 and the specific standards that define the range of allowable physical characteristics of  
24 proposed development. The City of Tacoma Community and Economic Development  
25 Department is responsible for implementation of the Land Use Regulatory Code.

26 The NMCRC site is zoned Port Maritime Industrial (PMI) and is located within the  
27 Shoreline District – Port Industrial (S-10) overlay zone. The S-10 designation is intended  
28 to allow the continued development of the Port Industrial Area, with an increase in the  
29 intensity of development and a greater emphasis on terminal facilities within the City  
30 (City of Tacoma 2007b). The S-10 designation is designated as an "urban" environment.

31 The PMI district is intended to allow all industrial uses and uses that are not permitted in  
32 other districts. The Port facilities, including facilities supporting the operation of the Port,  
33 as well as other public and private maritime and industrial activities make up the majority  
34 of uses in the PMI district. With proximity to deepwater berthing and sufficient back-up  
35 land available between the berths and the public right-of-ways, the PMI district includes  
36 24-hour operations to accommodate regional and international shipping and distribution  
37 schedules, raw material processing and manufacturing, transport of raw materials for  
38 manufacturing and finished goods, and freight mobility infrastructure. Heavy truck  
39 traffic and higher levels of noise and odors are present within the PMI district, with uses  
40 primarily including marine and industrial uses.

## 1 **Port of Tacoma**

2 NMCRC is located within an area predominately owned and utilized by the Port of  
3 Tacoma as a public port facility under a charter from the State of Washington.

### 4 Port of Tacoma Comprehensive Scheme of Harbor Improvements

5 The State of Washington requires Port districts to prepare and update Comprehensive  
6 Scheme of Harbor Improvements (CSHI) outlining development goals for the Port. The  
7 CSHI also defines the geographic boundaries within the Port District for facilities  
8 development and industrial improvements. The Port of Tacoma Comprehensive Scheme  
9 of Harbor Improvements (CSHI) was most recently updated in 2006. The CSHI includes  
10 growth projections for the Port through an estimate of cargo growth based on existing and  
11 future West Coast cargo projections and growth in Asian trade. These projections  
12 indicate the need to “purchase, develop and improve lands within the Tideflats for  
13 maritime terminal development and road infrastructure transportation.”

### 14 Blair Peninsula Redevelopment Project

15 As discussed in Section 1.4 of this EA, the Port is currently in the planning stages of the  
16 Blair-Hylebos Peninsula Redevelopment Project, and on October 31, 2008 released the  
17 Draft EIS for the project. The Port is proposing various construction and redevelopment  
18 activities on an approximately 548-acre (220-ha) portion of the approximately 1,200-acre  
19 (485-ha) Blair Peninsula. Redevelopment activities are proposed to meet forecasted  
20 container and cargo growth, modernize existing facilities and utilities, and improve the  
21 roadway and railway infrastructure that serves the site. The redevelopment project is  
22 comprised of the following four key components which are broken down into four  
23 Redevelopment Areas: TOTE, YTTI, WUT and RRI. These redevelopment areas are  
24 described in Section 1.4 of this EA.

### 25 **3.1.2 NMCRC Tacoma Redevelopment Plan**

26 As discussed in Section 1.2 of this EA, a LRA was formed in December 2006 for the  
27 purpose of preparing a proposed Redevelopment Plan for the NMCRC property. A  
28 Redevelopment Plan was prepared by the LRA based on the results of required screening  
29 and outreach efforts conducted by the LRA and on a thorough consideration of social and  
30 economic factors affecting the property. The Redevelopment Plan for the NMCRC  
31 property is a “conceptual land use plan” to act as a guideline in converting the NMCRC  
32 property into a viable and productive source of employment for the local area. The  
33 NMCRC property was screened by other DoD components and other Federal agencies  
34 and was determined to be surplus property. Potential redevelopment scenarios were  
35 considered and analyzed to determine that potential economic impacts of various  
36 alternatives. The Redevelopment Plan determined that the NMCRC parcel, although  
37 small in size, is a strategic component to the full build out vision of the Blair Peninsula.  
38 Given the irregular shape of the NMCRC parcel, the plans of the surrounding land, the  
39 reduction of access to the area, the Redevelopment Plan concludes that the integration of  
40 the NMCRC property with Port-owned property for expansion of marine terminal and  
41 inter-modal facilities represents the highest and best use of the property.

1    **3.1.3    Existing Site and Surrounding Land Uses**

2    The NMCRC site is located on the Blair Peninsula within a maritime setting very typical  
3    of the Tacoma Tidelands area. The site consists of seven buildings, an asphalt parking lot,  
4    and two piers on the Hylebos Waterway. The seven buildings include a main building, a  
5    boathouse, an old boiler house, the current boiler house, firearm ammunition storage, a  
6    building housing an equipment maintenance ship and lecture hall, and a building housing  
7    maintenance bays and storage areas. The main building consists of offices, classrooms,  
8    medical exam rooms, and a gym. In addition to the seven buildings, the NMCRC site  
9    contains storage lockers for hazardous waste storage. The NMCRC site is surrounded by  
10   12-foot-high (3.6-meter) chain link fence topped with barbed wire.

11   Adjacent land uses include similar maritime uses on the Blair Peninsula. The Port owns  
12   all of the adjacent property and the waterway immediately surrounding the NMCRC site.  
13   To the northwest lies property which currently hosts America Fast Freight, a  
14   transportation and logistics company providing ocean freight forwarding, trucking,  
15   project logistics and warehousing distribution services. To the site's northeast lies the  
16   TOTE Terminal, a privately owned shipping company that provides domestic service  
17   between the Ports of Tacoma, Washington and Anchorage, Alaska. Immediately  
18   southeast of the site is a currently vacant parcel owned by the Port that is being used to  
19   stage construction equipment and materials for the rehabilitation of Hylebos Bridge. In  
20   addition, a number of small commercial and industrial businesses align the southerly East  
21   11<sup>th</sup> Street right of way.

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## 1    **3.2    VISUAL RESOURCES**

2    Visual resources address the appearance of the landscape and the factors influencing how  
3    the landscape is perceived by the viewing public. Landscape includes both natural and  
4    engineered features.

### 5    **3.2.1    Visual Character of Redevelopment Plan Area**

6    The NMCRC site is located within a portion of the Commencement Bay tideflats. The  
7    character of the NMCRC site reflects the character of the surrounding urban, industrial  
8    area. The NMCRC site is flat, and consists of asphalt and buildings. The irregular,  
9    Z-shaped parcel is currently developed with seven buildings, an asphalt parking lot, and  
10   two piers on the Hylebos Waterway. A number of storage lockers are present on the  
11   NMCRC site for storage of hazardous materials.

12   A concrete sign and a gate mark the entrance to the NMCRC site from Alexander  
13   Avenue. Upon entering the site at the marked gate, a large parking lot fronts the site that  
14   is divided into two sections by a concrete sidewalk. Six of the seven on-site buildings are  
15   located on the larger portion of the site, at the corner of Alexander Avenue and 11<sup>th</sup>  
16   Street. Buildings 5 and 55 are located on the front portion of the site, facing Alexander  
17   Avenue. Buildings 6, 56, 57, and 65 are located northeast of Buildings 5 and 55. A long,  
18   narrow alley connects this larger portion of the site to the waterfront portion of the site.  
19   The waterfront portion of the site houses the seventh building, Building 51, and two  
20   piers. A 12-foot (3.6-meter) high chain link fence encloses the NMCRC site. The seven  
21   buildings and two piers are described below.

22   Building 55 is a two-story, rectangular building with precast concrete-panel construction  
23   and a flat build-up roof. The exterior of Building 55 consists of concrete panels, glass  
24   lights, and semi-attached piers. The piers extend beyond the building, creating a narrow  
25   porch-like extension around the building.

26   Building 56 has an elongated, rectangular footprint, and the exterior walls have a smooth,  
27   stucco finish. The building has extended eaves with exposed concrete beams. The front  
28   façade consists of three sections, with the middle section taller than the two outer  
29   sections. The mid-section consists of two bays and a single sliding overhead metal door.  
30   Each side section along the front façade has five bays with a single metal doors or sliding  
31   overhead metal doors.

32   Building 57 rests on a concrete slab-on-grade foundation. Its exterior walls are clad with  
33   sheet metal siding and there are two single metal doors on the front and two large vents  
34   that extend from the low-pitched side-gable roof.

35   Building 51 is a wood frame building near the docks at the rear of the NMCRC site. The  
36   building has three sets of double wood doors with fixed transoms (a horizontal crosspiece  
37   over a door or between a door and a window above it) on the north façade.

38   Pier 40 is a 591-foot wood pier located on the NMCRC's waterfront, parallel to the  
39   shoreline. The pier consists of approach and utility trestles, a main pier, and walkways at  
40   each end of the main pier.

1 Building 5 is a two-story, steel frame, L-shaped structure. The building features a metal  
2 roof and exterior walls consisting of ribbed metal panels. The building's primary entry  
3 (on the southwestern façade of the building) consists of double, aluminum-frame, glazed  
4 storefront doors. Aluminum-frame windows flank the entry doors. Sliding, metal  
5 overhead garage doors are located on the southwest and northeast elevations of the  
6 building.

7 Building 6 is a rectangular building consisting of a steel frame with a flat, metal roof.  
8 Building 6 has six bays located on the northwest façade, each of which consists of a  
9 sliding, overhead metal garage door. A small single, metal door is located on the  
10 southeast elevation of the building.

11 Pier 60 is a wood pier parallel to the NMCRC waterfront property on the Hylebos  
12 Waterway. Pier 60 is a T-shaped structure with an approach ramp.

13 Building 65 is a rectangular, steel-framed building on a concrete slab-on-grade  
14 foundation. The building features a front-gabled roof sheathed with standing-seam metal.  
15 Standing-seam metal is also on the building's exterior walls. Two single overhead garage  
16 doors are located on the southwest façade, with two large cylindrical metal flues with  
17 hoods extending from the roof.

18 Landscaping on-site consists of some lawn areas and trees. A small grass lawn extends  
19 along the Alexander Avenue frontage of the site, and two larger lawns are located  
20 adjacent to Building 55. In addition to grass lawns, landscaping at the site also includes a  
21 row of red leaf maple trees along Alexander Avenue and small groupings of maple trees  
22 in the north and south lawns.

### 23 **3.2.2 Visual Characteristics of Surrounding Area**

24 The majority of the Blair Peninsula is characterized by Port-related maritime activities.  
25 The Peninsula consists of relatively flat land, covered by existing buildings, support  
26 structures, and infrastructure. The existing visual character of the area surrounding the  
27 NMCRC consists primarily of industrial and Port-related activities. Adjacent land uses  
28 consist of Port-related maritime activities and industrial uses. To the northwest of the  
29 NMCRC site is a property currently utilized by America Fast Freight, a transportation  
30 and logistics company providing ocean freight forwarding, trucking, project logistics and  
31 warehousing distribution services. To the northeast of the NMCRC site is the TOTE  
32 Terminal. Immediately southeast of the NMCRC site is a currently vacant parcel owned  
33 by the Port that is being used to stage construction equipment and materials for the  
34 rehabilitation of Hylebos Bridge. Other small commercial and industrial businesses are  
35 located along the southerly East 11<sup>th</sup> Street right of way.

36 To the north of the NMCRC site, across Hylebos Waterway, residential uses are visible at  
37 the top of the adjacent bluff. Industrial and commercial uses are visible at the bottom of  
38 the bluff. The bluff is steep and heavily vegetated and provides contrast between the  
39 residential uses at the top of the bluff and the surrounding industrial uses below the bluff.  
40 A small marina is also visible from the waterfront portion of the NMCRC site, located to

1 the north of the site across Hylebos Waterway. The Hylebos Bridge is located to the  
2 northeast of the NMCRC site and is visible from the waterfront portion of the site.

### 3 **3.2.3 Key Views and Visibility of Site**

4 Views looking toward the site vary by location and elevation. Views to the site from the  
5 Hylebos Waterway consist of the piers along the waterfront, Building 51, and the various  
6 storage lockers for hazardous materials storage present on the waterfront portion of the  
7 site. Views of the site from across the Hylebos Waterway are similar to those from the  
8 Waterway—the piers, Building 51 and storage lockers are visible. The residential uses at  
9 the top of the bluff across Hylebos Waterway have views of the site, and are able to view  
10 more of the site than those viewers at the bottom of the bluff and on the Hylebos  
11 Waterway due to their higher elevations.

12 Views to the site from the surrounding industrial uses consist of views from 11<sup>th</sup> Street,  
13 Alexander Avenue, and the properties adjacent to the NMCRC site. As viewed from  
14 Alexander Avenue and the property southwest of Alexander Avenue, views of the site  
15 primarily consist of the front entrance, the parking lot, and Buildings 5 and 55. From 11<sup>th</sup>  
16 Street and the properties east of 11<sup>th</sup> Street, views of the NMCRC site consist of  
17 Buildings 6 and 55. Due to the large building on the adjacent property to the west, views  
18 to the site from that direction are largely obstructed.

### 19 **3.2.4 Views from the Site**

20 Views from the site consists of the Hylebos Waterway and the heavily vegetated bluff to  
21 the north, a large warehouse buildings to the northwest, the TOTE terminal to the  
22 northeast, and a parcel currently being utilized to stage construction equipment to the  
23 southeast.

### 24 **3.2.5 View Group/Sensitivity**

25 Given the setting of the NMCRC site, sensitive view groups in the area are limited. As  
26 adjacent properties consist of maritime industrial uses, they would not be considered  
27 sensitive viewers. The residential uses located on the top of the bluff to the north of the  
28 NMCRC site, across Hylebos Waterway, would be considered a sensitive view group.  
29 The NMCRC site is located within the viewshed for these residential uses.

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## 1    **3.3    SOCIOECONOMICS**

2    Socioeconomics is generally defined as the basic social and economic attributes  
3    associated with the human environment, with particular emphasis on population,  
4    employment, personal income, and housing. Socioeconomics also includes the concept of  
5    environmental justice, which is defined as the fair treatment and meaningful involvement  
6    of all people regardless of race, color, national origin, or income with respect to the  
7    development, implementation, and enforcement of environmental laws, regulations, and  
8    policies. Executive Order 12898 requires each federal agency to achieve environmental  
9    justice by addressing “disproportionately high and adverse human health and  
10   environmental effects on minority and low-income populations.”

### 11   **3.3.1   Population Trends and Conditions**

#### 12    **Pierce County**

13   The City of Tacoma is located within Pierce County, which covers an area of  
14   approximately 1,790 square miles (4,640 square km). The City of Tacoma is located  
15   approximately halfway between the Oregon and Canadian borders. With a population of  
16   approximately 773,500, Pierce County is the second most populous metropolitan area in  
17   the State of Washington. Pierce County encompasses 21 cities/towns with the major  
18   cities being Tacoma, Lakewood, Puyallup, and University Place. The County has had an  
19   average population growth rate of 1.6 percent from 1995 to 2006.

20   According to the American Community Survey, in 2006, Pierce County had a total of  
21   309,222 housing units. The survey indicated that 286,031 (approximately 93 percent) of  
22   these units were occupied, with the remaining 23,191 units (approximately 7.5 percent)  
23   unoccupied. There is a 1.3 percent homeowner vacancy rate and a 6.8 percent rental  
24   vacancy rate in Pierce County. In 2006, Pierce County had an average household size of  
25   2.61 persons.

#### 26    **City of Tacoma**

27   The City of Tacoma is the County seat and the largest city within Pierce County. It is the  
28   third largest city in the State of Washington, with a 2008 population of 202,700. The  
29   average annual growth rate in Tacoma from 1995 to 2006 was 0.74 percent.

30   According to the American Community Survey, a total of 84,587 housing units were  
31   located within the City of Tacoma in 2006. Of these units, 77,166 (approximately 91  
32   percent) were occupied housing units, with the remaining 7,421 units (approximately 9  
33   percent) unoccupied. There is a 2.4 percent homeowner vacancy rate and a 9.1 percent  
34   rental vacancy rate within the City of Tacoma. Tacoma has slightly higher vacancy rates  
35   than Pierce County, as an overall total, and for both homeowner and rental units. In 2006,  
36   Tacoma had an average household size of 2.49 persons.

37   The NMCRC site is located in the New Tacoma Neighborhood in the City of Tacoma,  
38   which consists of a mix of industrial, residential and commercial land uses. The  
39   immediate vicinity of the NMCRC site is characterized by industrial and Port-related

1 uses. There are no residential uses within the immediate vicinity of the site; the nearest  
2 residential uses are located on the top of the bluff to the north of the NMCRC site.

### 3 **3.3.2 Economic Trends and Conditions**

#### 4 **Pierce County**

5 Pierce County boasts a diversified economy, including a manufacturing sector which  
6 produces forest products, chemicals, metals, computer/semiconductor products,  
7 aerospace products and a strong agricultural production. The Port of Tacoma is  
8 considered a key driver in the County and the State's economic development.

9 Major private employers within the County include MultiCare, Franciscan and Good  
10 Samaritan healthcare facilities, The Boeing Company, Safeway and Fred Meyer stores,  
11 Intel Corporation and Russell Investment Group. Pierce County is also home to Fort  
12 Lewis (the third-largest army post in the United States), McChord Air Force Base,  
13 Madigan Army Medical Center, and Camp Murray. The employment impact of military  
14 on the State is substantial. Washington has a large component of military relative to other  
15 states. Consequently, Washington ports are frequently utilized to transport military cargo.

16 Of the 596,600 persons 16 and over living within Pierce County, 393,242 are in the labor  
17 force. Approximately 96 percent of the labor force is within the civilian labor force. The  
18 civilian labor force includes those people who are employed (except in the Armed  
19 Forces), and those people who are unemployed but are considered to be actively looking  
20 for work. People who have never held a job, people who have stopped looking for work,  
21 and people who have been unemployed for a long period of time are not considered to be  
22 in the labor force. The remaining four percent of the labor force in Pierce County is in the  
23 Armed Forces. Approximately 6.9 percent of the civilian labor force is unemployed in  
24 Pierce County.

#### 25 **City of Tacoma**

26 Downtown Tacoma has over 20,000 employees, projected to increase 33 percent by  
27 2010. It is home to the University of Washington Tacoma campus, Washington State  
28 History Museum, U.S. Federal Courthouse, Tacoma Convention Center, Broadway  
29 Center for the Performing Arts, and Tacoma Art Museum (LRA 2008).

30 In Tacoma, 158,408 persons are over the age of 16. Of those, 96,899 people are in the  
31 labor force. The Civilian labor force in Tacoma consists of 95,324 people (98 percent of  
32 the labor force), and the remaining 1,575 persons (two percent) are in the Armed Forces.  
33 In Tacoma, approximately 7.6 percent of the civilian labor force is unemployed. This is  
34 slightly higher than the 6.9 percent unemployment rate for Pierce County.

1    **3.3.3   Minority Population Trends**

2    **Pierce County**

3    According to the 2000 U.S Census, the total population of Pierce County in 2000 was  
4    700,820. The majority of the population was white (664,977 individuals or 95 percent)  
5    with the remaining five percent comprised of minority population.

6    **City of Tacoma**

7    According to the 2000 U.S Census, which is the most current census date available, the  
8    total population of the City of Tacoma in 2000 was 193,556. The majority of the  
9    population was white (181,404 or 94 percent). The remaining six percent included  
10   minority population.

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## 1    **3.4    CULTURAL RESOURCES**

### 2    **3.4.1    Summary of Previous Investigations**

3    The NMCRC site and surrounding area has been subject to dredging and fill activities.  
4    Extensive industrial development in the area has also occurred for a long period of time.  
5    The NMCRC site is located within a portion of the Commencement Bay tideflats that was  
6    historically mudflat associated with the Puyallup River estuary. The NMCRC property  
7    was developed in a manner typical of the Commencement Bay tideflats – the mudflat  
8    shoreline was filled with dredged material and structural fill to create developable upland.  
9    The NMCRC site is located within an area of historic and cultural interest due to the  
10   historic uses of the area by local Native American people.

11   A cultural resources assessment prepared for the Port of Tacoma’s Blair Waterway  
12   Infrastructure Improvements Project and Gog-le-hi-te II Mitigation Action Area was  
13   prepared by Northwest Archaeological Associates, Inc. in August 2005. This assessment  
14   analyzed the Blair Bridge Reach Widening Area (and other areas). The NMCRC site is  
15   located just northeast of the Blair Bridge Reach Widening Area. The assessment  
16   determined that the Blair Bridge Reach Widening Area exhibited extensive build-up of  
17   fill and cited a 1981 archaeological investigation that determined that at least 7.5 feet  
18   (2.3 meters) of fill rested on top of alluvial deposits at the studied location. Given the  
19   extensive modification of the area dues to dredging, fill placement, and extensive  
20   industrial development, the 2005 assessment concluded that there is a low probability for  
21   encountering significant cultural resources.

22   The NMCRC site was previously a mudflat. The site was filled with dredged material  
23   from the surrounding waterways, followed by upland material to build up the landscape.  
24   Because the NMCRC site is located is close proximity to the Blair Bridge Reach  
25   Widening Area and has a similar history, and because the Blair Bridge Reach Widening  
26   Area was determined to have a low probability for encountering significant cultural  
27   resources, the NMCRC site is also considered to have a low probably for encountering  
28   significant cultural resources.

29   A Cultural Resources Survey and Assessment was prepared for the NMCRC site in 1997  
30   by Hardy, Heck, Moore & Myers. This survey determined that at the time the  
31   Assessment was prepared, no buildings construction prior to 1946 met the National  
32   Register Criteria as individual resources, no buildings constructed after 1946 contained  
33   concentrations of resources meeting National Register requirements for a historic district,  
34   and no buildings constructed after 1946 met National Register requirements of  
35   extraordinary significance for resources less than 50 years of age.

36   Hardy Heck Moore, Inc. (HHM) prepared a Historic Resources Survey (Update) for the  
37   NMCRC site in November 2008 to determine what resources are present on-site. The  
38   report is contained in Appendix A of this EA and the results of the survey are discussed  
39   below.

### 1 **3.4.2 Summary of Known Resources**

2 Three facilities located at the NMCRC site date to World War II. These facilities are  
3 Piers 40 and 60, and Building 51, the Boiler Plant. Although these structures meet the  
4 50-year age threshold for National Register of Historic Places (NRHP) eligibility, the  
5 facilities have been changed and modified since their construction. The three structures  
6 are tangible links to the World War II era when the surrounding property was part of a  
7 large ship building operation; however, no research or historical evidence suggests that  
8 they were important within the operations of the shipbuilding enterprise. The three  
9 structures are also not considered eligible for listing as they do not derive significance for  
10 associations with any historical figures that made important contributions to the past, nor  
11 are they considered distinctive due to design, method of construction, or physical  
12 attributes. Changes to the buildings and the surrounding area, including the demolition of  
13 other World War II-era buildings, have diminished the ability of these three resources to  
14 convey their significance. For this reason, Piers 40 and 60, and Building 51, lack  
15 sufficient integrity to meet National Register Criteria and they are recommended to be  
16 not eligible for the NRHP.

17 The remaining buildings at the NMCRC site have been associated with the Naval  
18 Reserve Program since the main building and associated structures were completed in  
19 1964. Building 55, which was constructed in 1964, has served as the primary  
20 administrative facility for the site. Although it is in good condition and has not had any  
21 significant physical changes, it does not meet the recommended 50-year age threshold for  
22 NRHP eligibility. Although the structure was built during the Cold War, there is no  
23 information to indicate that Building 55 derives significance for its contributions to the  
24 Cold War. It is one of almost 200 similar Navy training facilities throughout the country  
25 and it played a very minor and supportive role to the Cold War. The building was  
26 designed by a locally prominent firm; however, the building is not particularly significant  
27 and does not display any noteworthy design techniques, principles, or methods of  
28 construction. The other structures on the NMCRC site also lack sufficient significance to  
29 meet National Register Criteria Consideration and are recommended to be not eligible for  
30 the NRHP.

31 The structures at the NMCRC site create a distinctive grouping within a well-defined  
32 area; however, the structures date from the 1940s to 2000 and do not have a cohesive feel  
33 or character. For this reason, the NMCRC site does not possess sufficient integrity to  
34 meet National Register Criteria as a historic district.

35 The Historic Resources Survey (Update) prepared by HHM dated November 2008 was  
36 submitted to the Washington State Department of Archaeology and Historic Preservation  
37 (DAHP) for review. The DAHP concurred with the findings of the report in a letter dated  
38 March 25, 2009 that the NMCRC Tacoma site is not eligible for the National Register of  
39 Historic Places either as a district or as individual buildings. The DAHP concurrence  
40 letter is included in Appendix A of this EA.

## 1    **3.5 TRANSPORTATION**

2    This section describes the existing roadway network, traffic volumes and level of service, public  
3    transportation, pedestrian and bicycle circulation, parking, and goods movement on and around  
4    NMCRC, based on a Transportation Report prepared by Transpo Group (December 2008). The  
5    Transportation Report is contained in Appendix B of this EA.

6    Specific study locations were selected based on travel to and from the NMCRC site. The  
7    locations represent areas where the Port's redevelopment project would have the highest level of  
8    traffic impact. The study area for this traffic analysis is shown in Figure 3.5-1. The study area is  
9    consistent with the Port of Tacoma's BHTRP Draft EIS.

### 10   **3.5.1 Roadway Network**

11   The transportation analysis primarily focuses on the local and regional facilities providing access  
12   to the site. These facilities are described below.

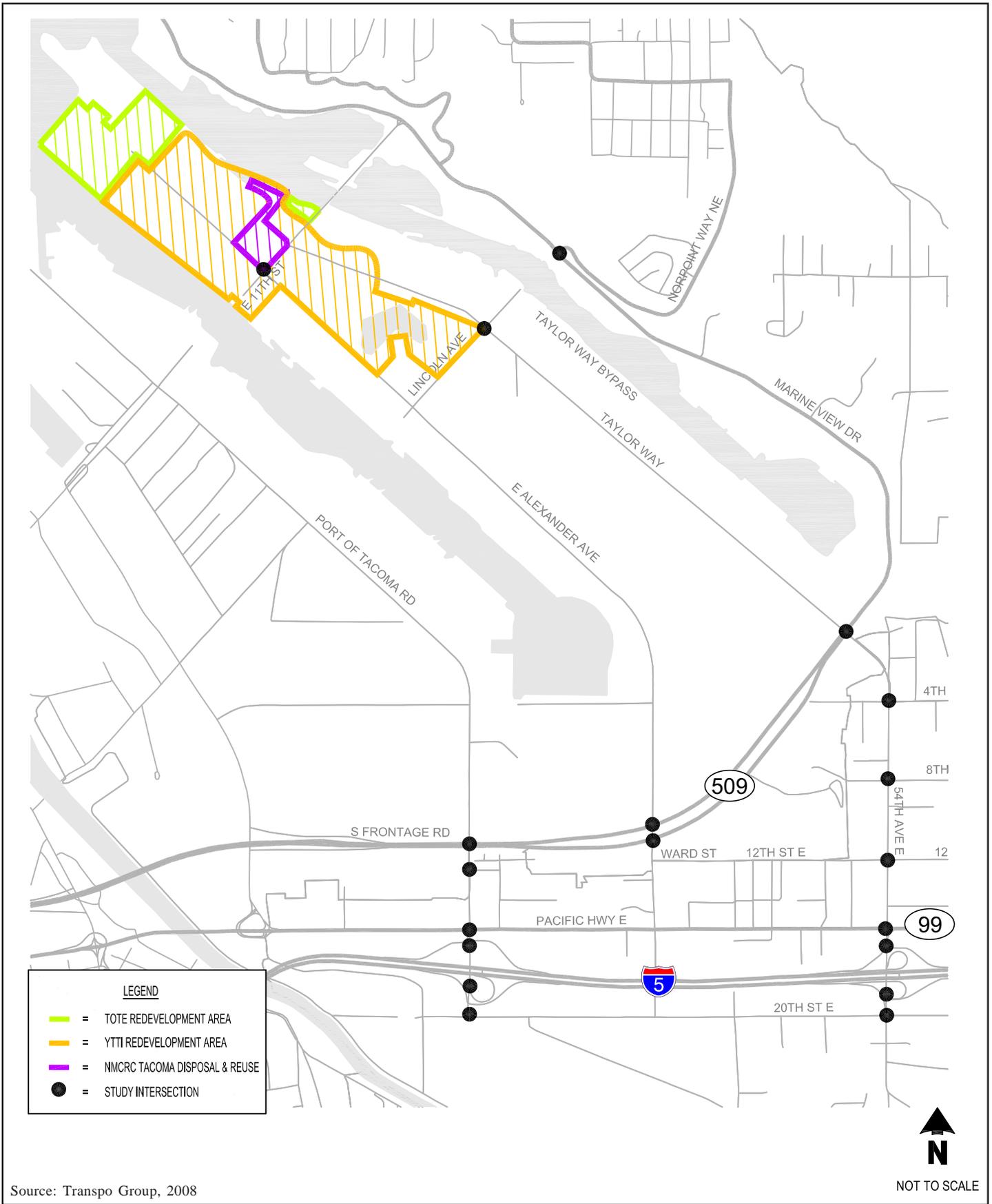
13   **Interstate 5 (I-5)** is a freeway which extends through the western United States from the Mexico  
14   border into Canada. This roadway runs east-west in the vicinity of the Port of Tacoma. Within  
15   the study area, I-5 has four general purpose lanes per direction. The posted speed limit is 60  
16   miles per hour (mph).

17   **E 11th Street** is a principal arterial which runs in the northeast-southwest direction from south  
18   of Alexander Avenue to Marine View Drive. This is a five lane roadway with two lanes per  
19   direction and a center two-way left-turn (TWLT) lane. Sidewalks and parking are not provided  
20   along E 11th Street. This roadway bridges over the Hylebos Waterway north of Taylor Way. The  
21   Hylebos Bridge is currently closed; however, it is planned to be re-opened in 2010. The posted  
22   speed limit is 35 mph. This roadway is a designated truck route.

23   **State Route (SR) 509** is a principal arterial which runs in the northeast-southwest direction from  
24   downtown Tacoma to north of Taylor Road. It is a four-lane divided highway with turn lanes at  
25   intersections and bike lanes on both sides. Sidewalks and parking are not provided along SR 509.  
26   The speed limit is 50 mph from Milwaukee Way to Taylor Way and 40 mph hour from Taylor  
27   Way north. North of Taylor Way, this roadway becomes **Marine View Drive** which runs along  
28   the coast to Slayden Road NE. Marine View Drive is a five lane roadway with two lanes per  
29   direction and a TWLT lane. There are sidewalks on both sides of the roadway but no on-street  
30   parking. The posted speed limit is 40 mph.

31   **Alexander Avenue** is a collector arterial which extends in the northwest-southeast direction  
32   from 20th Street E to north of E 11th Street. It is two-lanes with no sidewalks and on-street  
33   parking. The speed limit is 40 mph south of Lincoln Avenue and 35 mph north of Lincoln  
34   Avenue. North of 11th Street E, this roadway is a designated truck route.

35   **Taylor Way** is a minor arterial which extends in the northwest-southeast direction from E 11th  
36   Street to SR 509. It is three-lanes south of Lincoln Avenue and five lanes at the SR 509  
37   intersection. The posted speed limit is 40 mph between Lincoln Avenue and SR 509. North of  
38   Lincoln Avenue, it is two-lanes and the speed limit is 30 mph. Sidewalks and parking are not  
39   provided along Taylor Way. This roadway is a designated truck route.



I:\ArcGIS\N\NAV-01.18 TacomaReuse\Map\ENV\EA\Fig3.5-1\_TrafficStudyArea.pmd -KF

## Traffic Study Area

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 3.5-1

1 **Lincoln Avenue** is a collector arterial which runs in the northeast-southwest direction from  
2 Alexander Avenue to north of Taylor Way. It is two-lanes and widens to three-lanes at the  
3 Taylor Way intersection. There are no sidewalks or on-street parking. The posted speed limit is  
4 35 mph.

5 Emergency vehicle access to the NMCRC site is provided via Alexander Avenue. Currently, the  
6 primary emergency vehicles access to the Port area and the NMCRC site is by travelling through  
7 the Taylor Way/SR 509 – Marine View Drive intersection following Taylor Way to Lincoln  
8 Avenue and then heading west to Alexander Avenue. This circuitous route adds travel distance  
9 and time to emergency response. There is a secondary (and more direct) emergency access at the  
10 Alexander Avenue/North Frontage Road (SR 509) intersection, which is gated.

### 11 **3.5.2 Traffic Volumes and Level of Service**

12 Traffic volume data were collected for the area to evaluate existing weekday traffic conditions  
13 during the PM peak hour. The PM peak hour is when the highest hourly traffic volumes occur  
14 and when levels of congestion are typically highest. The PM peak hour in the vicinity of the  
15 NMCRC site generally occurs between 4:15 and 5:15 p.m. During the PM peak hour, the highest  
16 traffic volumes were found along SR 509 with approximately 2,400 vehicles per hour (vph)  
17 between Taylor Way and Alexander Avenue. Fifty-fourth Avenue NE carries approximately  
18 1,200 to 1,400 vph between 4th Street E and I-5.

19 Since truck traffic represents a large portion of the Port's traffic, the Port's *Tideflats Area Truck*  
20 *Volume and Route Study* (Heffron Transportation, Inc. 2007) was utilized to provide truck counts  
21 and travel patterns within the Port. Based on the data collected, trucks represent approximately 8  
22 to 12 percent of the daily traffic within the Port. During the PM peak hour, trucks account for  
23 approximately six percent of the traffic. This is indicative of an industrial area with higher truck  
24 activity than urban roadways where trucks typically account approximately 2 percent of the  
25 traffic.

26 The performance measures used for analyzing and assessing the street system are focused on  
27 intersection delay-based level of service (LOS) as well as traffic safety. LOS standards for the  
28 analyzed intersections are established by the jurisdictions in which they reside. The analyzed  
29 intersections are within the City of Tacoma, City of Fife, and Washington State Department of  
30 Transportation (WSDOT) jurisdictions. The standard for all analyzed intersections is LOS D.

31 Existing levels of service, delays, and volume to capacity (v/c) ratios were calculated at the study  
32 intersections in the vicinity of the NMCRC site. Table 3.5-1 identifies the existing (2008)  
33 intersection operations.

<b>Table 3.5-1 Existing (2008) PM Peak Hour LOS Summary</b>				
<b>Intersection</b>	<b>Jurisdiction</b>	<b>2008</b>		
		<b>LOS<sup>1</sup></b>	<b>Delay<sup>2</sup></b>	<b>V/C<sup>3</sup> or WM<sup>4</sup></b>
<b><u>Signalized Intersections</u></b>				
Taylor Way/SR 509 – Marine View Drive	Tacoma	E	65	0.92
54th Avenue E/8th Street E	Fife	A	5	0.45
54th Avenue E/12th Street E	Fife	A	7	0.43
54th Avenue E/Pacific Highway E (SR 99)	Fife	E	59	0.91
54th Avenue E/I-5 SB Ramps	Fife	B	17	0.72
54th Avenue E/20th Street E	Fife	D	43	0.72
Alexander Avenue/North Frontage Road (SR 509)	Tacoma	C	28	0.72
Alexander Avenue/South Frontage Road (SR 509)	Tacoma	B	17	0.66
Norpoint Way NE/Marine View Drive (SR 509)	Tacoma	B	14	0.67
Port of Tacoma Road/North Frontage Road	Tacoma	B	13	0.46
Port of Tacoma Road/South Frontage Road	Tacoma	B	19	0.39
Port of Tacoma Road/Pacific Highway E	Fife	E	63	0.64
Port of Tacoma Road/I-5 SB Ramps	Tacoma	B	13	0.55
Lincoln Avenue/Taylor Way	Tacoma	B	10	0.29
<b><u>Unsignalized Intersections</u></b>				
Taylor Way – 54th Avenue E/4th Street E	Fife	D	31	WB
54th Avenue E/I-5 NB Ramps	Fife	F	130	EB
Port of Tacoma Road/I-5 NB Ramps	Tacoma	B	11	SBL
Port of Tacoma Road/20th Street E	Tacoma	F	>180	EB
E 11th Street/Taylor Way	Tacoma	B	10	NA

Source: Transpo Group 2008.

Notes: SBL = southbound left-turn, WB = westbound, EB = eastbound

1. Level of service, based on 2000 Highway Capacity Manual methodology.

2. Average delay in seconds per vehicle.

3. Volume-to-capacity ratio reported for signalized intersections.

4. Worst movement reported for two-way stop-controlled intersections.

NA = not applicable for all-way stop-controlled intersections.

1 As shown in Table 3.5-1, five intersections are currently operating below the LOS D standard,  
 2 with the remaining intersections operating at LOS D or better. The five intersections operating  
 3 below LOS D include:

- 4 • Taylor Way/SR 509 – Marine View Drive operates at LOS E due to high traffic  
 5 volumes and insufficient left-turn capacity.

- 1 • 54th Avenue E/Pacific Highway E (SR 99) operates at LOS E due to high traffic  
2 volumes and insufficient capacity.
- 3 • Port of Tacoma Road/Pacific Highway E operates at LOS E due to high traffic  
4 volumes and insufficient capacity.
- 5 • 54th Avenue E/I-5 NB Ramps operates at LOS F due to high traffic volumes and the  
6 need for a traffic signal.
- 7 • Port of Tacoma Road/20th Avenue E operates at LOS F due to high left and right-  
8 turning traffic volumes.

### 9 **3.5.3 Collision Summary**

10 Collision records at the analyzed intersections are summarized in Table 3.5-2. As shown in the  
11 table, all of the signalized intersections have an average of less than 10 collisions per year except  
12 the 54th Avenue E/Pacific Highway E (SR 99), 54th Avenue E/I-5 SB Ramps, Alexander  
13 Avenue/South Frontage Road (SR 509), and Port of Tacoma Road/I-5 SB Ramps intersections.  
14 In addition, all unsignalized intersections have an average of less than five collisions per year  
15 except the 54th Avenue E/I-5 NB Ramps intersection.

**Table 3.5-2  
Summary of 2005 – 2007 Collision Records**

Location	Number of Reported Collisions <sup>1</sup>			Annual Average
	2005	2006	2007	
1. Taylor Way/SR 509 – Marine View Drive	3	3	0	2.0
2. Taylor Way – 54th Avenue E/4th Street E	0	0	0	0.0
3. 54th Avenue E/8th Street E	0	0	0	0.0
4. 54th Avenue E/12th Street E	0	0	0	0.0
5. 54th Avenue E/Pacific Highway E (SR 99)	25	27	23	25.0
6. 54th Avenue E/I-5 SB Ramps	16	9	11	12.0
7. 54th Avenue E/I-5 NB Ramps	26	26	20	24.0
8. 54th Avenue E/20th Street E	3	3	18	8.0
9. Alexander Avenue/North Frontage Road (SR 509)	0	2	4	2.0
10. Alexander Avenue/South Frontage Road (SR 509)	8	11	13	10.7
11. Norpoint Way NE/Marine View Drive (SR 509)	6	4	3	4.3
12. Port of Tacoma Road/North Frontage Road	1	5	2	2.7

**Table 3.5-2 (cont.)  
Summary of 2005 – 2007 Collision Records**

Location	Number of Reported Collisions <sup>1</sup>			Annual Average
	2005	2006	2007	
13. Port of Tacoma Road/South Frontage Road	4	1	4	3.0
14. Port of Tacoma Road/Pacific Highway E	1	2	8	3.7
15. Port of Tacoma Road/I-5 SB Ramps	18	15	7	13.3
16. Port of Tacoma Road/I-5 NB Ramps	4	3	1	2.7
17. Port of Tacoma Road/20th Street E	0	1	4	1.7
18. Lincoln Avenue/Taylor Way	1	0	0	0.3

1. Collision records for January 1, 2005 through December 31, 2007 were obtained from City of Tacoma and WSDOT.

1 A majority of the collisions at the 54th Avenue E/Pacific Highway E (SR 99) intersection are due  
 2 to a failure to grant right-of-way to right-turning traffic. This is likely due to the design of the  
 3 intersection which provides wider lanes and large radii to accommodate truck traffic. Collisions  
 4 at the 54th Avenue E/I-5, Port of Tacoma Road/I-5 and Alexander Avenue/South Frontage Road  
 5 intersections are primarily rear-end. Rear-end collisions are typical of signalized intersections,  
 6 stop and go traffic, and closely spaced intersections.

#### 7 **3.5.4 Public Transportation**

8 Transit service to and from the NMCRC site is provided via Route 60. This is the only route that  
 9 circulates within the Port; the remaining routes travel near the Port along SR 509. Each route is  
 10 described below.

11 **Route 60** operates between Downtown Tacoma and the Port with stops along Alexander Avenue  
 12 in the vicinity of the NMCRC site. Service is available on weekdays only during typical  
 13 commuter hours from approximately 5:00 to 8:00 a.m. from Downtown to the Port and from  
 14 approximately 3:00 to 6:00 p.m. from the Port to Downtown. Headways are approximately  
 15 30 minutes.

16 **Route 61** runs between Downtown Tacoma and north of the Port into Browns Point via SR 509.  
 17 Service is provided on weekdays only between approximately 6:00 a.m. and 6:00 p.m. with  
 18 one hour headways.

19 **Route 500** operates between Downtown Tacoma, Fife, and the Federal Way Transit Center via  
 20 SR 509. Service is available on weekdays between approximately 5:00 and 12:00 a.m. with  
 21 30 minute headways. On weekends service is from approximately 7:00 and 12:00 a.m. with one  
 22 hour headways.

#### 23 **3.5.5 Pedestrian and Bicycle Circulation**

24 Pedestrian and bicycle facilities within the area are limited. Bike lanes are provided along  
 25 SR 509. Many of the roadways have wide shoulders where pedestrians and bicyclist typically

1 travel. There are no planned sidewalks within the study area. The City of Tacoma  
2 *Comprehensive Plan* identifies future bicycles lanes along Alexander Avenue and E 11th Street.

### 3 **3.5.6 Parking**

4 The majority of the roadways in the vicinity of the NMCRC site do not have on-street parking.  
5 The NMCRC Tacoma site has approximately 130 parking spaces in the front of the building. In  
6 addition, there is storage and parking for military equipment and vehicles in the rear of the  
7 building.

### 8 **3.5.7 Goods Movement**

9 Tacoma Rail Tideflats Division operates all trains within the vicinity of the NMCRC site. Rail  
10 facilities within the Port of Tacoma consist of industrial spurs which serve the uses on-site. The  
11 Port of Tacoma handles more than two-million train containers per year. All rail crossings are at  
12 grade. All of the crossings in the vicinity of the NMCRC site are unsignalized, except at the  
13 Taylor Way/Lincoln Avenue intersection. Trains are operated 24 hours a day and seven days a  
14 week. During the day, there are trains that occupy at-grade crossings, which block vehicular  
15 traffic and cause traffic delays.

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## 1 3.6 AIR QUALITY

2 The baseline year for this air quality analysis is 2008. Air emissions associated with current  
3 activities include minor emissions associated with motor vehicles used by tenants traveling to the  
4 site, and minor maintenance activities.

### 5 3.6.1 Meteorology and Climate

6 The Pacific Northwest region has a mild and varied climate with only rare occurrences of severe  
7 weather such as thunderstorms or tornadoes. The normal movement of air masses is from west to  
8 east, so most of the systems moving across the region have been moderated by traveling over the  
9 Pacific Ocean. As a result, winter minimum temperatures and summer maximum temperatures in  
10 the region are greatly moderated. The Pacific Ocean also provides unlimited moisture to air  
11 masses traveling across the Pacific, so there is abundant rainfall in western Washington. The  
12 weather impacts air quality, as well as influences human activities.

13 The majority of the precipitation occurs in the fall and winter months (November through  
14 March), with much less precipitation from June to August. Table 3.6-1 presents monthly  
15 average temperature and precipitation data measured at the Tacoma meteorological monitoring  
16 station, located approximately 2.5 miles (4.0 km) south of the NMCRC site.

<b>Table 3.6-1</b>			
<b>Monthly Average Temperatures and Precipitation – Tacoma Meteorological Station</b>			
<b>Month</b>	<b>Temperature, °F</b>		<b>Precipitation, Inches</b>
	<b>Maximum</b>	<b>Minimum</b>	
January	48.4	36.8	5.97
February	50.9	36.9	3.71
March	55.6	40.0	4.07
April	60.7	43.2	3.00
May	66.4	48.0	1.97
June	71.8	52.6	1.57
July	76.6	55.9	0.76
August	77.1	55.6	0.81
September	71.3	51.3	1.17
October	61.4	45.9	3.54
November	52.3	40.3	6.70
December	46.8	35.9	5.71
<b>Annual</b>	<b>61.6<sup>1</sup></b>	<b>45.2<sup>1</sup></b>	<b>38.98<sup>2</sup></b>

Source: www.wrcc.dri.edu

<sup>1</sup>Average temperature

<sup>2</sup>Total precipitation

### 1 **3.6.2 Applicable Regulations, Plans and Policies**

2 Air quality is determined with reference to ambient air concentrations of seven major pollutants  
3 determined by the U.S. Environmental Protection Agency (USEPA) to be of concern with  
4 respect to the health and welfare of the general public. These pollutants, called “criteria  
5 pollutants,” are carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), ozone  
6 (O<sub>3</sub>), suspended particulate matter less than or equal to 10 microns in diameter (PM<sub>10</sub>), fine  
7 particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>), and lead.

8 Ambient air quality is measured by determining the atmospheric concentration of a specific  
9 compound that occurs at a particular geographic location. Ambient air quality data are generally  
10 reported as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume  
11 fraction (e.g., parts per million [ppm] by volume). The USEPA has established National Ambient  
12 Air Quality Standards (NAAQS) for these pollutants. Areas that violate a Federal air quality  
13 standard are designated as non-attainment areas. The Clean Air Act (CAA) allows States to  
14 establish more stringent air quality standards.

15 The State of Washington has adopted the Federal standards and has adopted more stringent  
16 standards for SO<sub>2</sub> and NO<sub>2</sub>. Washington has not yet rescinded the previous 1-hour standard for  
17 ozone or the annual standard for PM<sub>10</sub>.

18 Table 3.6-2 shows both the Federal and State ambient air quality standards. The following notes  
19 apply.

20 • NAAQS (other than ozone, particulate matter, and those based on annual averages or  
21 annual arithmetic mean) are not to be exceeded more than once a year. The ozone  
22 standard is attained when the fourth highest 8-hour concentration in a year, averaged over  
23 three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24-hour standard is  
24 attained when 99 percent of the daily concentrations, averaged over three years, are equal  
25 to or less than the standard. For PM<sub>2.5</sub>, the 24-hour standard is attained when 98 percent  
26 of the daily concentrations, averaged over three years, are equal to or less than the  
27 standard.

28 ○ National Primary Standards: The levels of air quality necessary, with an adequate  
29 margin of safety, to protect the public health.

30 ○ National Secondary Standards: The levels of air quality necessary to protect the  
31 public welfare from any known or anticipated adverse effects of a pollutant.

32 • Washington Ambient Air Quality Standard (WAAQS) for SO<sub>2</sub> (1-hour) requires 0.4 ppm  
33 by volume for a one-hour period more than once per one-year period, and 0.25 ppm by  
34 volume average for a one-hour period more than twice in a consecutive seven-day period.

Pollutant	Averaging Time	NAAQS		WAAQS
		Primary	Secondary	
Ozone (O <sub>3</sub> )	1-Hour	-	Same as Primary Standard	0.12 ppm (180 µg/m <sup>3</sup> )
	8-Hour	0.075 ppm (147 µg/m <sup>3</sup> )		0.075 ppm (147 µg/m <sup>3</sup> )
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m <sup>3</sup> )	None	9 ppm (10 mg/m <sup>3</sup> )
	1-Hour	35 ppm (40 mg/m <sup>3</sup> )		35 ppm (40 mg/m <sup>3</sup> )
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Average	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	0.05 ppm (94 µg/m <sup>3</sup> )
	1-Hour	-		-
Sulfur Dioxide (SO <sub>2</sub> )	Annual Average	80 µg/m <sup>3</sup> (0.03 ppm)	-	52 µg/m <sup>3</sup> (0.02 ppm)
	24-Hour	365 µg/m <sup>3</sup> (0.14 ppm)	-	261 µg/m <sup>3a</sup> (0.1 ppm)
	1-Hour	-	-	0.4 ppm <sup>b</sup> (1048 µg/m <sup>3</sup> )
	1-Hour	-	-	0.25 ppm <sup>c</sup> (655 µg/m <sup>3</sup> )
Total Suspended Particulates (TSP)	24-Hour	-	-	150 µg/m <sup>3</sup>
	Annual Arithmetic Mean	-	-	60 µg/m <sup>3</sup>
Suspended Particulate Matter (PM <sub>10</sub> )	24-Hour	150 µg/m <sup>3</sup>	Same as Primary Standard	150 µg/m <sup>3</sup>
	Annual Arithmetic Mean	-		50 µg/m <sup>3</sup>

<b>Table 3.6-2 (cont.)</b>				
<b>National and State Ambient Air Quality Standards</b>				
<b>Pollutant</b>	<b>Averaging Time</b>	<b>NAAQS</b>		<b>WAAQS</b>
		<b>Primary</b>	<b>Secondary</b>	
Fine Particulate Matter (PM <sub>2.5</sub> )	24-Hour	35 µg/m <sup>3</sup>	Same as Primary Standard	-
	Annual Arithmetic Mean	15 µg/m <sup>3</sup>		-
Lead (Pb)	Calendar Quarter	1.5 µg/m <sup>3</sup>	Same as Primary Standard	-

<sup>a</sup>SO<sub>x</sub> 24-hour standard of 0.1 ppm not to be exceeded more than once per one-year period.

<sup>b</sup>SO<sub>2</sub> 1-hour standard of 0.4 ppm not to be exceeded more than once in a one-year period.

<sup>c</sup>SO<sub>2</sub> 1-hour standard of 0.25 ppm not to be exceeded more than twice in a consecutive seven-day period.

Source: 40 CFR Part 50; WAC Chapters 173-470, 173-474, 173-475

1 Areas in which ambient air concentrations of a pollutant exceed the State and/or Federal standard  
 2 are considered to be non-attainment areas for that pollutant. Non-attainment areas may be  
 3 classified as basic, serious, severe, or extreme non-attainment areas for a given criteria pollutant.  
 4 Non-attainment areas are required to develop and execute plans, known as State Implementation  
 5 Plans (SIPs) that show how the area will meet Federal and State air quality standards. The Puget  
 6 Sound Area was designated as a nonattainment area for PM<sub>2.5</sub> on December 22, 2008, and the  
 7 Puget Sound Clean Air Agency is in the process of developing its SIP for the PM<sub>2.5</sub> standard.  
 8 Areas that have achieved attainment may be designated as “maintenance areas,” which are  
 9 subject to maintenance plans showing how the area will continue to meet Federal and State air  
 10 quality standards. NMCRC Tacoma is located within a maintenance area for CO and PM<sub>10</sub>.

11 The ambient air quality levels measured at a particular location are determined by the  
 12 interactions of emissions, chemical properties and reactions that occur in the atmosphere, and  
 13 meteorology. Emission considerations include the types, amounts, and locations of pollutants  
 14 emitted into the atmosphere. Chemical reactions can transform pollutant emissions into criteria  
 15 pollutants. Meteorological considerations include wind and precipitation patterns affecting the  
 16 distribution, dilution, and removal of pollutant emissions.

17 Pollutant emissions typically refer to the amount of pollutants or pollutant precursors introduced  
 18 into the atmosphere by a source or group of sources. Pollutant emissions contribute to the  
 19 ambient air concentrations of criteria pollutants, either by directly affecting the pollutant  
 20 concentrations measured in the ambient air or by interacting in the atmosphere to form criteria  
 21 pollutants. Pollutants such as CO, SO<sub>2</sub>, lead, and some particulates that are emitted directly into  
 22 the atmosphere from emission sources are referred to as primary pollutants. Some criteria  
 23 pollutants such as ozone, NO<sub>2</sub>, and some particulates, are formed through atmospheric chemical  
 24 reactions that are influenced by meteorology, ultraviolet light, and other atmospheric processes.  
 25 Criteria pollutants formed through these processes are referred to as secondary pollutants.

1 Emissions that lead to formation of secondary pollutants are considered precursors. Thus, for  
2 example, Reactive Organic Gases (ROG) and oxides of nitrogen (NO<sub>x</sub>) are considered precursors  
3 for ozone. In general, emissions that are considered precursors to secondary pollutants are  
4 evaluated and regulated to control the levels of associated criteria pollutants in the ambient air.  
5 PM<sub>10</sub> and PM<sub>2.5</sub> are generated as primary pollutants by various mechanical processes (for  
6 example, abrasion, erosion, mixing, or atomization) or combustion processes. However, PM<sub>10</sub>  
7 and PM<sub>2.5</sub> can also be formed as secondary pollutants through chemical reactions or by gaseous  
8 pollutants condensing into fine aerosols.

9 In addition to those pollutants that are designated criteria pollutants, additional pollutants that are  
10 considered to have the potential for health effects are categorized as hazardous air pollutants  
11 (HAPs) under Section 112 of the CAA. The USEPA has identified 188 substances as HAPs.  
12 Examples of HAPs include benzene, which is found in gasoline; perchloroethylene, which is  
13 emitted from some dry cleaning facilities; and methylene chloride, which is used as a solvent and  
14 paint stripper in some industries. HAPs are regulated under the CAA provisions, including the  
15 National Emission Standards for Hazardous Air Pollutants, which apply to specific sources of  
16 HAPs, and the Urban Air Toxics Strategy, which applies to area sources. Toxic air pollutants in  
17 Washington are covered by the Washington Department of Ecology (WDOE) under the State air  
18 toxics rule.

19 The U.S. Environmental Protection Agency (USEPA) published *Determining Conformity of*  
20 *General Federal Actions to State or Federal Implementation Plans; Final Rule*, in the 30  
21 November 1993, Federal Register (40 CFR Parts 6, 51, and 93). The U.S. Navy published *Clean*  
22 *Air Act Conformity Guidance* in Appendix F, OPNAVINST 5090.1C, dated 30 October 2007.  
23 These publications provide implementing guidance to document Clean Air Act Conformity  
24 Determination requirements.

25 Federal regulations state that no department, agency, or instrumentality of the Federal  
26 Government shall engage in, support in any way or provide financial assistance for, license to  
27 permit, or approve any activity that does not conform to an applicable implementation plan. It is  
28 the responsibility of the Federal agency to determine whether a Federal action conforms to the  
29 applicable implementation plan, before the action is taken (40 CFR Part 1 51.850(a)).

30 Federal actions may be exempt from conformity determinations if they do not exceed designated  
31 *de minimis* levels for criteria pollutants (40 CFR Part 51.853(b)). Under the provisions of 40  
32 CFR 93.153(c)(2)(xix), actions which would result in no emissions increase or an increase in  
33 emissions that is clearly *de minimis*, including “actions (or portions thereof) associated with  
34 transfers of land, facilities, title, and real properties through an enforceable contract or lease  
35 agreement where the delivery of the deed is required to occur promptly after a specific,  
36 reasonable condition is met, such as promptly after the land is certified as meeting the  
37 requirements of CERCLA, and where the Federal agency does not retain continuing authority to  
38 control emissions associated with the lands, facilities, title, or real properties” are also exempt  
39 from the provisions of 40 CFR 93.153. Provided a Federal action is exempt, a Record of Non-  
40 Applicability (RONA) can be prepared for the proposed action and no further demonstration of  
41 conformity is required.

### 1 **3.6.3 Regional and Local Air Quality**

2 The Puget Sound area is classified as attainment/unclassified for the NAAQS for all pollutants  
 3 except PM<sub>2.5</sub>, for which it was recently designated as a nonattainment area. As discussed above,  
 4 the area is classified as a CO and PM<sub>10</sub> maintenance area, indicating that attainment for these  
 5 pollutants was demonstrated since the adoption of the CAA, and the area is subject to a  
 6 maintenance plan for both CO and PM<sub>10</sub>. The Puget Sound Clean Air Agency is currently  
 7 developing its SIP for attainment of the PM<sub>2.5</sub> standard.

8 Air quality in Pierce County is monitored at several stations as part of the EPA's monitoring  
 9 network. Monitoring stations (and the pollutants monitored) are located at 1101 Pacific Avenue  
 10 (CO), 2301 Alexander Avenue (PM<sub>10</sub>), 7802 South L Street (PM<sub>2.5</sub>) in Tacoma. Table 3.6-3  
 11 presents a summary of the federal and State attainment classification for the Project area.

**Table 3.6-3  
 Attainment Status – NMCRC**

<b>Pollutant</b>	<b>Attainment Status</b>
Ozone – 1 hour	N/A
Ozone – 8 hour	Attainment
CO	Maintenance
NO <sub>2</sub>	Attainment
SO <sub>2</sub>	Attainment
PM <sub>10</sub>	Maintenance
PM <sub>2.5</sub>	Nonattainment

12 The following subsections provide a discussion of criteria pollutants and the criteria pollutant  
 13 monitoring data collected in the area.

14 **Ozone.** Ozone is considered a photochemical oxidant, which is a chemical that is formed when  
 15 VOCs and NO<sub>x</sub>, both by-products of combustion, react in the presence of ultraviolet light.  
 16 Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function,  
 17 aggravate asthma and increase susceptibility to respiratory infections. Children and those with  
 18 existing respiratory diseases are at greatest risk from exposure to ozone.

19 Ozone has not been collected in Tacoma, but is collected both at Eatonville and at Mount Rainier  
 20 National Park. Table 3.6-4 summarizes the best representative ambient ozone data in the area  
 21 collected during the past five years (2003-2007) at the Eatonville monitoring station.

<b>Table 3.6-4 Ozone Air Quality Summary 2003-2007</b>				
<b>Year</b>	<b>Days Above 1-Hour NAAQS<sup>1</sup></b>	<b>Maximum 1-Hour Concentration (ppm)</b>	<b>Days Above 8-Hour NAAQS</b>	<b>Maximum 8-hour Concentration (ppm)</b>
<b>Eatonville Monitoring Station</b>				
2003	0	0.090	5	0.081
2004	0	0.089	1	0.078
2005	0	0.079	0	0.069
2006	0	0.123	4	0.108
2007	0	0.100	1	0.085

<sup>1</sup>The 1-Hour NAAQS was rescinded in 2005.

1 As shown in Table 3.6-4, the Eatonville monitoring station did not experience any exceedances  
 2 of the 1-hour NAAQS for ozone, but has measured some exceedances of the 8-hour NAAQS for  
 3 ozone. Pierce County remains designated as an attainment area for ozone, as the standard is  
 4 based on the determination that ozone ambient air quality standards are met at an ambient air  
 5 quality monitoring site when the average of the annual fourth-highest daily maximum 8-hour  
 6 average ozone concentration is less than or equal to the standard. The 8-hour ozone standard has  
 7 recently been lowered to 0.075 ppm; the fourth-highest daily maximum 8-hour ozone  
 8 concentration measured in Pierce County has been less than the standard since the standard was  
 9 implemented.

10 **Carbon Monoxide.** CO is a product of combustion, and the main source of CO in the Pierce  
 11 County is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood  
 12 cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be  
 13 carried to the body's organs and tissues. CO can cause health effects to those with  
 14 cardiovascular disease, and can also affect mental alertness and vision. Elevated CO  
 15 concentrations are generally found only near a significant source of emissions such as a freeway  
 16 or busy intersection. The highest concentrations of CO occur when low wind speeds and a stable  
 17 atmosphere trap the pollution emitted at or near ground level in what is known as a stable  
 18 boundary layer. These conditions occur more frequently in wintertime than in summer. Since  
 19 mobile sources (motor vehicles) are the main source of CO, ambient concentrations of CO are  
 20 dependent on motor vehicle activity. CO concentrations in the State have declined substantially  
 21 due to the wintertime oxygenated fuel programs and reformulated fuels. Increasingly stringent  
 22 motor vehicle emission standards and phase-out of older vehicles has also reduced emissions of  
 23 CO throughout the State.

24 CO has been collected at the Pacific Avenue monitoring station in Tacoma. Table 3.6-5  
 25 summarizes the best representative ambient CO data in the Project area collected during the four  
 26 years from 2003-2006 at the Pacific Avenue monitoring station. CO data were not collected in  
 27 2007.

<b>Table 3.6-5 CO Air Quality Summary 2003-2006</b>				
<b>Year</b>	<b>Days Above 1-Hour NAAQS</b>	<b>Maximum 1-Hour Concentration (ppm)</b>	<b>Days Above 8-Hour NAAQS</b>	<b>Maximum 8-hour Concentration (ppm)</b>
<b>Pacific Avenue Monitoring Station</b>				
2003	0	13.7	0	5.7
2004	0	7	0	5
2005	0	6.6	0	4.6
2006	0	4.1	0	2.3

1 As shown in Table 3.6-5, long-term trends indicate that CO concentrations in the area are well  
2 below the 1-hour and 8-hour NAAQS.

3 **Nitrogen Dioxide.** NO<sub>2</sub> is also a by-product of fuel combustion, and is formed both directly as a  
4 product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with  
5 oxygen. NO<sub>2</sub> is a respiratory irritant and may affect those with existing respiratory illness,  
6 including asthma. NO<sub>2</sub> can also increase the risk of respiratory illness.

7 The majority of the NO<sub>x</sub> that is emitted from combustion sources is emitted as NO, with the  
8 balance emitted as NO<sub>2</sub>. NO<sub>2</sub> is formed in the atmosphere by a reaction of NO with O<sub>2</sub> and O<sub>3</sub>.  
9 Some level of photochemical activity is required for the conversion of NO to NO<sub>2</sub>. Highest  
10 concentrations of NO<sub>2</sub> generally occur during the fall months when inversion can occur to trap  
11 pollutants near the ground but there is adequate ultraviolet radiation to oxidize NO to NO<sub>2</sub>.

12 The nearest monitoring station where NO<sub>2</sub> has been collected in the past five years is at the  
13 Beacon Hill monitoring station in Seattle. Table 3.6-6 summarizes the best representative  
14 ambient NO<sub>2</sub> data in the area collected during the four years from 2003-2006 at the Beacon Hill  
15 monitoring station. NO<sub>2</sub> data were not collected in 2007.

<b>Table 3.6-6 NO<sub>2</sub> Air Quality Summary 2003-2006</b>			
<b>Year</b>	<b>Days Above 1-Hour NAAQS</b>	<b>Maximum 1-Hour Concentration (ppm)</b>	<b>Annual Average (ppm)</b>
<b>Beacon Hill (Seattle) Monitoring Station</b>			
2003	0	0.065	0.018
2004	0	0.073	0.018
2005	0	0.078	0.018
2006	0	0.053	0.018

1 As shown in Table 3.2-6, long-term trends indicate that NO<sub>2</sub> concentrations in the area are well  
2 below the annual NAAQS.

3 **Respirable Particulate Matter and Fine Particulate Matter.** Respirable particulate matter, or  
4 PM<sub>10</sub>, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine  
5 particulate matter, or PM<sub>2.5</sub>, refers to particulate matter with an aerodynamic diameter of 2.5  
6 microns or less. Particulate matter in this size range has been determined to have the potential to  
7 lodge in the lungs and contribute to respiratory problems. PM<sub>10</sub> and PM<sub>2.5</sub> arise from a variety of  
8 sources, including road dust, diesel exhaust, combustion, tire and brake wear, construction  
9 operations and windblown dust. PM<sub>10</sub> and PM<sub>2.5</sub> can increase susceptibility to respiratory  
10 infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis.  
11 PM<sub>2.5</sub> is considered to have the potential to lodge deeper in the lungs. Both PM<sub>10</sub> and PM<sub>2.5</sub> can  
12 either be emitted directly, or formed from the interaction of precursor pollutants such as NO<sub>x</sub>,  
13 SO<sub>x</sub>, VOCs, and ammonia in the atmosphere.

14 The nearest monitoring station where PM<sub>10</sub> has been collected in the past five years is at the  
15 Alexander Avenue monitoring station in Tacoma. The nearest monitoring station where PM<sub>2.5</sub>  
16 has been collected in the past five years is at the South L Street monitoring station in Tacoma.  
17 Table 3.6-7 summarizes the best representative ambient CO data in the Project area collected  
18 during the four years from 2003-2007 at the Tacoma monitoring stations. PM<sub>10</sub> data were not  
19 reported in 2004.

<b>Table 3.6-7 PM<sub>10</sub> and PM<sub>2.5</sub> Air Quality Summary 2003-2007</b>			
<b>Year</b>	<b>Days Above 1-Hour NAAQS</b>	<b>Maximum 1-Hour Concentration (ppm)</b>	<b>Annual Average (ppm)</b>
<b>PM<sub>10</sub> – Alexander Avenue Monitoring Station</b>			
2003	0	68	20
2005	0	50	20
2006	0	60	18
2007	0	64	16
<b>PM<sub>2.5</sub> – South L Street Monitoring Station</b>			
2003	1	50.3	9.96
2004	1	57	10.89
2005	1	45.5	11.5
2006	1	68	9.55
2007	1	58.6	9.67

20 As shown in Table 3.2-7, long-term trends indicate that PM<sub>10</sub> concentrations in the area are well  
21 below the NAAQS; however, exceedances of the 24-hour NAAQS for PM<sub>2.5</sub> have been recorded  
22 in Tacoma. The region is officially classified as nonattainment for PM<sub>2.5</sub>.

1 **Sulfur dioxide.** SO<sub>2</sub> is a colorless, reactive gas that is produced from the burning of sulfur-  
 2 containing fuels such as coal and oil, and by other industrial processes. Generally, the highest  
 3 concentrations of SO<sub>2</sub> are found near large industrial sources. SO<sub>2</sub> is a respiratory irritant that  
 4 can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term  
 5 exposure to SO<sub>2</sub> can cause respiratory illness and aggravate existing cardiovascular disease.

6 The nearest monitoring station where SO<sub>2</sub> has been collected in the past five years is at the Beacon Hill  
 7 monitoring station in Seattle. Table 3.6-8 summarizes the best representative ambient SO<sub>2</sub> data in the  
 8 area collected during the four years from 2003-2007 at the Beacon Hill monitoring station. SO<sub>2</sub> data were  
 9 not collected in 2006.

<b>Table 3.6-8 SO<sub>2</sub> Air Quality Summary 2003-2006</b>					
<b>Year</b>	<b>Days Above 1-Hour NAAQS</b>	<b>Maximum 1-Hour Concentration (ppm)</b>	<b>Maximum 3-Hour Concentration (ppm)</b>	<b>Maximum 24-Hour Concentration (ppm)</b>	<b>Annual Average (ppm)</b>
<b>Beacon Hill (Seattle) Monitoring Station</b>					
2003	0	0.077	0.026	0.01	0.003
2004	0	0.06	0.045	0.019	0.003
2005	0	0.044	0.028	0.014	0.004
2007	0	0.039	0.028	0.007	0.002

10 As shown in Table 3.6-8, long-term trends indicate that SO<sub>2</sub> concentrations in the area are well  
 11 below the NAAQS.

12 **Lead.** Lead (Pb) in the atmosphere occurs as particulate matter. Lead has historically been  
 13 emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the  
 14 phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts  
 15 of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system,  
 16 kidney and blood diseases upon prolonged exposure. Lead is also classified as a probable human  
 17 carcinogen. In general, because unleaded gasoline has been used for many years, lead is not  
 18 monitored at most locations in the United States.

## 1 **3.7 NOISE**

2 This section describes noise and sound generation terminology, discusses applicable noise  
3 regulations and agency guidelines related to the proposed action and alternatives, and identifies  
4 existing noise conditions within the NMCRC Tacoma property (NMCRC) and vicinity.

5 Individual reaction to noise levels is influenced by numerous factors, including the perceived  
6 loudness, setting, time of day, and sensitivity of the individual. The normally accepted human  
7 threshold for perception of an audible change in noise levels is 3 decibels (dB), and a change of  
8 10 dB is generally perceived as a doubling of the noise level. Because the human ear is not  
9 equally sensitive at all frequencies, noise values in this analysis are expressed in terms of “A-  
10 weighted” decibels (dBA) to approximate the hearing sensitivity of humans.

11 Noise levels are typically expressed as time-averaged (or time-equivalent) values, using the  
12 symbol “ $L_{EQ}$ ” (with  $L_{EQ}$  normally assumed to reflect hourly noise levels). Average noise  
13 exposure over a 24-hour period is generally presented as a day-night average sound level ( $L_{DN}$ ),  
14 or a community equivalent noise level (CNEL).  $L_{DN}$  values are calculated from the hourly  $L_{EQ}$ ,  
15 with the nighttime (10:00 PM to 7:00 AM) noise levels increased by 10 dB to reflect the greater  
16 potential for noise-related disturbance during that period. CNEL values are similar to  $L_{DN}$  levels,  
17 but include a 5 dB increase in noise levels during the evening period (7:00 PM to 10:00 PM) in  
18 addition to the 10 dB adjustment for nighttime noise levels described above. Unless otherwise  
19 noted,  $L_{DN}$  and CNEL values are assumed to be based on dBA measurements.

### 20 **3.7.1 Noise Standards**

21 Noise regulations and guidelines for federally funded highway projects in the State of  
22 Washington are established by the WSDOT and the FHWA, as outlined below. While the Port of  
23 Tacoma Blair-Hylebos Terminal Redevelopment Project (BHTRP), which encompasses the  
24 NMCRC site, does not include any federal funding, the draft BHTRP EIS utilized WSDOT and  
25 FHWA criteria as guidelines for demonstrating potential noise impacts associated with the  
26 redevelopment plan. In addition to the noted federal and state standards, the following  
27 discussion also provides a summary of noise requirements identified by the City of Tacoma.

#### 28 **FHWA/WSDOT Standards**

29 The FHWA noise criteria (23 CFR §772.5(g)) are based on traffic-generated noise, and define  
30 traffic noise impacts to occur when one of more of the following conditions are present:

- 31 • Predicted traffic noise levels approach or exceed the applicable noise abatement criterion.
- 32 • Predicted traffic noise levels substantially exceed the existing noise level.
- 33 • Predicted traffic noise exhibits “severe” noise levels.

34 The WSDOT utilizes FHWA criteria for transportation projects, and has defined “approach” as  
35 extending to within 1 dBA of the FHWA noise abatement criterion of 67 dBA, which is also the  
36 applicable criterion for the NMCRC site (see Table 3.7-1). The term “substantially exceed” is  
37 defined by WSDOT as a 10 dBA increase over existing noise levels, while a “severe” noise level

1 is defined as either a 30 dBA increase over existing levels, or any noise level greater than 80  
 2 dBA  $L_{EQ}$  (1h), regardless of the existing level. Based on the described information, a noise  
 3 impact under FHWA/WSDOT standards is determined to occur when predicted noise levels  
 4 “approach” or ‘exceed’ the applicable FHWA noise abatement criterion of 67 dBA, or when  
 5 predicted noise levels exceed existing levels by 10 dBA or more.

<b>Table 3.7-1 FHWA Noise Abatement Criteria</b>		
<b>Activity Category</b>	<b>Hourly A-Weighted Sound Level dBA, <math>L_{EQ}(h)</math></b>	<b>Description of Activity Category</b>
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

6 Noise levels generated by any proposed project are generally compared to the FHWA/WSDOT  
 7 standards and criteria, rather than to the existing or to the “No Build” conditions. Federally  
 8 funded projects are required to consider mitigation options when the proposed project meets or  
 9 exceeds FHWA/WSDOT standards and criteria, regardless of whether or not the  
 10 standards/criteria were met or exceeded under existing or “No Build” conditions. Because, as  
 11 previously noted, the BHTRP does not include any federal funding, mitigation options were  
 12 considered as recommendations in the associated EIS.

### 13 **City of Tacoma Noise Standards**

14 Noise standards in the City of Tacoma are codified in Chapter 8.122 of the City of Tacoma  
 15 Municipal Code (Ord. 27673 Ex. A), as summarized below.

1 General Noise Prohibitions (§8.122.080)

2 General noise requirements in the City of Tacoma include the following:

- 3 1. No person shall make, continue, or cause or permit to be made or continued, any  
4 sound attributable to any device that increases the total sound level by the limits noted  
5 below in item number 3, when measured at or within a receiving property:
- 6 2. No person shall make, continue, or cause or permit to be made or continued, any  
7 impulsive sound, attributable to the source, that increases the total sound level by  
8 15 dBA or more above the ambient sound level, when there are less than 10 impulses  
9 per hour between the hours of 7:00 AM and 10:00 PM, or less than 4 impulses per  
10 hour between the hours of 10:00 PM and 7:00 AM. If the number of impulses exceeds  
11 the criteria set forth in this subsection, the sound level limits noted below in item  
12 number 3 shall apply.
- 13 3. The maximum permissible source sound level increases above the ambient sound  
14 level shall be restricted to: (1) 10 dBA for outdoor noise and 6 dBC<sup>1</sup> for indoor noise  
15 during the period of 7:00 AM to 10:00 PM; and (2) 5 dBA for outdoor noise and 3  
16 dBC for indoor noise during the period of 10:00 PM to 7:00 AM.

17 Construction Noise (§8.122.090)

18 Requirements associated with construction noise in the City of Tacoma include the following:

- 19 1. All construction devices used in the construction and demolition activity shall be  
20 operated with a muffler, if a muffler is commonly available for such construction  
21 devices.
- 22 2. Construction and demolition activity, excluding emergency work, shall not be  
23 performed between the hours of 9:00 PM and 7:00 AM on weekdays, or between the  
24 hours of 9:00 PM and 9:00 AM on weekends and Federal holidays, except as  
25 otherwise provided in this code.
- 26 3. After hours work on weekdays and weekends shall be allowed, provided that no  
27 sound created by the work exceeds the limits identified in the General Noise  
28 Prohibitions (§8.122.080).

29 **3.7.2 Existing Noise Environment**

30 Existing noise sources at the NMCRC site are associated with activities such as minor on- and  
31 off-site roadway noise; heating, ventilating and air-conditioning (HVAC) equipment; and minor  
32 maintenance activities including engine exhaust gas blowers to allow trucks to be operated inside

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<sup>1</sup> dBC is similar to dBA, but approximates the hearing sensitivity of humans to louder noise and emphasizes lower frequencies.

1 buildings. The existing noise environment at the NMCRC site and vicinity was characterized by  
2 conducting noise measurements at applicable locations on September 18, 2008, with associated  
3 methodology and results outlined below.

#### 4 Methodology

5 All noise measurements were conducted at grade, with the microphone positioned five feet (1.3  
6 meters) above grade. The following equipment was used to measure existing noise levels at the  
7 NMCRC site and vicinity:

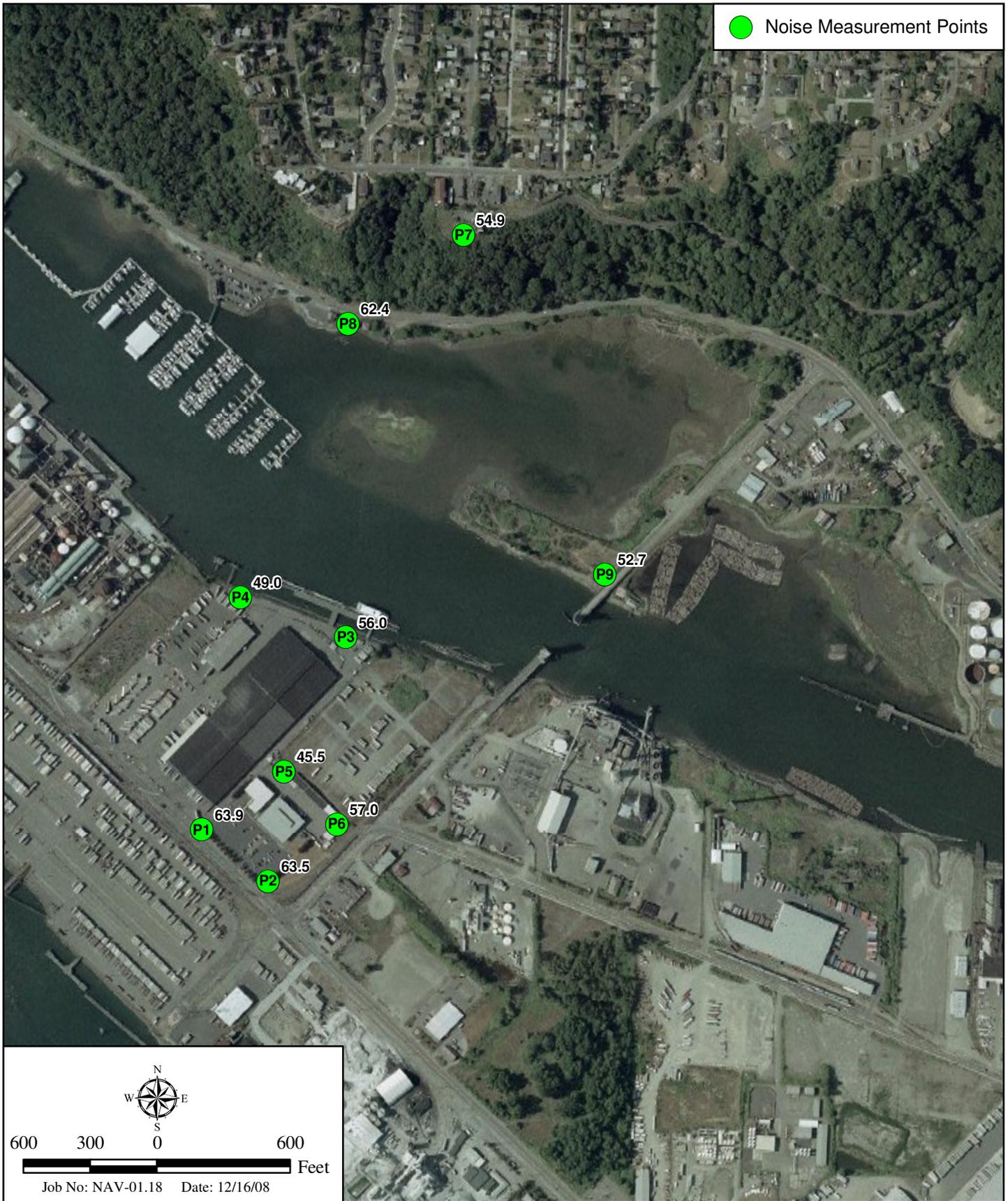
- 8 • Larson Davis System LxT Integrating Sound Level Meter
- 9 • Larson Davis Model CA250 Calibrator
- 10 • Windscreen and tripod for the sound level meter
- 11 • Distance measurement wheel
- 12 • Digital camera

13 The sound level meter was field-calibrated immediately prior to and after all noise measurements  
14 to ensure accuracy. All sound level measurements conducted and presented in this analysis, in  
15 accordance with applicable regulations, were made with a sound level meter that conforms to  
16 associated American National Standards Institute (ANSI) specifications (ANSI S1.4-1983  
17 R2001). All instruments are maintained with National Bureau of Standards traceable calibration,  
18 per the manufacturers' standards.

#### 19 Field Noise Measurements

20 A total of nine field noise measurements were conducted at the NMCRC site and vicinity as part  
21 of this analysis, with the measurement locations shown on Figure 3.7-1 and the results provided  
22 in Table 3.7-2. Weather conditions during the time of the measurements were generally overcast,  
23 with moderately high humidity, temperature in the upper 60s, and no measurable wind. Traffic  
24 volumes on the two roadways located adjacent to the NMCRC site were below an average of one  
25 car per minute for both roadways, and were thus insufficient to generate measurable traffic noise  
26 above the general area noise levels adjacent to the roadways. Accordingly, all noise  
27 measurements represent general site and surrounding area noise levels without traffic counts.

28 Examples of typical noise levels for common indoor and outdoor activities are shown in Table  
29 3.7-3, to provide a comparison to the measured noise levels at the NMCRC site and vicinity.  
30 Sound propagation (i.e., the passage of sound from source to receiver) and attenuation  
31 (reduction) are influenced by several factors, including geometric spreading, absorption and  
32 atmospheric effects, as well as shielding by natural and manmade features (e.g., topography or  
33 structures). Attenuation with distance, for example, is commonly assumed to encompass a 6 dB  
34 reduction with every doubling of distance, while typical exterior-to-interior attenuation for  
35 residential structures is assumed as approximately 15 dB with open windows and 20 dB with  
36 windows closed. The noise levels shown in Table 3.7-3 do not include any attenuation by natural  
37 or other features.



E:\ArcGIS\NAV-01.18 TacomaReuse\Map\ENV\EA\Fig3-7-1\_FieldNoiseMeasurements.mxd -RB

## Field Noise Measurements

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 3.7-1

- 1 Based on the above information, measured noise levels at the NMCRC site are below the  
 2 previously described FHWA criterion of 67 dBA, and generally reflect a moderately quiet  
 3 environment.

**Table 3.7-2  
 Field Noise Measurements at the NMCRC Site and Vicinity**

<b>Location Number<sup>1</sup></b>	<b>Location Description</b>	<b>Measured Noise (dBA)<sup>2</sup></b>	<b>Start</b>	<b>End</b>	<b>Notes</b>
P1	Northwest Corner of The Parking Area	63.9	12:48 PM	1:03 PM	Constant noise from refrigeration units at adjacent truck terminal
P2	Southwest Corner of The Parking Area	63.5	1:05 PM	1:20 PM	Refrigeration units and container handling across street
P3	Between Docks and Old Boiler House	56.0	1:30 PM	1:45 PM	Ocean tug (Wendell Foss) pass by, refrigeration units, and seagulls
P4	Northerly Point of Site	49.0	1:51 PM	2:06 PM	Receding tug, ships horn, refrigeration units, and seagulls
P5	Between Buildings 65 and 56	45.5	2:15 PM	2:30 PM	No specific noise sources
P6	North of Boathouse by East Eleventh Street	57.0	2:35 PM	2:50 PM	Two trucks pass by
P7	Overlooking Site From Back of Apartments on McMurray Road and Browns Point Boulevard	54.9	3:35 PM	3:50 PM	Constant gunfire noise from police firing range and some port operations
P8	Marine View Drive Parking Lot With Clear Site View	62.4	4:10 PM	4:25 PM	Marine View Traffic
P9	Northeast Corner of 11th Street Bridge	52.7	4:40 PM	4:55 PM	Noise from scrap yards to the south and east

<sup>1</sup> Refer to Figure 3.7-1 for measurement locations.

<sup>2</sup> Measurements reflect L<sub>MAX</sub>, or the maximum levels recorded during the noted measurement period.

- 4 Noise sensitive receptors are generally defined to include uses such as residences, schools,  
 5 hospitals and recreational areas. While noise sensitive receptors do not occur on the NMCRC  
 6 site, such receptors are present in surrounding areas. Specifically, the closest potential sensitive  
 7 noise receptors to the NMCRC site are associated with a marina located approximately 775 feet  
 8 (236 meters) to the northwest, with additional sensitive receptors including a commercial  
 9 (restaurant) site and a residential development located approximately 1,400 and 1,900 feet (430  
 10 to 580 meters) to the north, respectively.

**Table 3.7-3  
Typical Sound Levels in the Environment and Industry**

Common Outdoor Activities	Sound Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 1000 feet (300 meters)		
	100	
Gas Lawn Mower at 3 feet (1 meter)		
	90	Food Blender at 3 feet (1 meter)
Diesel Truck at 50 feet (15 meters), traveling 50 mph (80 km/hr)		
	80	Garbage Disposal at 3 feet (1 meter)
Noisy Urban Area, Daytime		
Gas Lawn Mower at 100 feet (30 meters)		
	70	Vacuum Cleaner at 10 feet (3 meters)
Commercial Area		Normal Speech at 3 feet (1 meter)
Heavy Traffic at 300 feet (90 meters)		
	60	Large Business Office
Quite Urban Daytime		Dishwasher Next Room
	50	
Quite Urban Nighttime		Theater, Large Conference Room (Background)
Quite Suburban Nighttime		
	40	
Quite Rural Nighttime		Library
	30	Bedroom at Night, Concert Hall (Background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans (1998)

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## 1    **3.8    BIOLOGICAL RESOURCES**

2    Biological resources include plant and animal species and the habitats in which they occur. This  
3    section is divided into discussions of regulatory considerations, vegetation/habitat types, wildlife,  
4    sensitive species, sensitive habitats, essential fish habitats, and special aquatic sites for the  
5    Region of Influence (ROI) of the proposed action and alternatives. The ROI includes the  
6    approximately 9.03-acre (3.65-ha) NMCRC Tacoma site, the adjacent Hylebos Waterway, and  
7    the nearby Blair Waterway.

8    Biological data presented in this EA is from the Blair-Hylebos Terminal Redevelopment Project  
9    Plants and Animals Technical Report Draft (Grette Associates<sup>LLC</sup> 2008), which includes the ROI  
10   as part of the Port's larger redevelopment project. Only data that applies to the ROI is included in  
11   this EA.

### 12   **3.8.1   Regulatory Considerations**

13   Natural resources in the ROI were evaluated in accordance with the applicable provisions of the  
14   following statutes, executive orders, and permit requirements. Although Navy policy encourages  
15   cooperation to protect state listed animal and plant species, there is no statutory mandate for  
16   protection of state listed species by federal entities.

#### 17   **Endangered Species Act**

18   The Endangered Species Act of 1973 (ESA) (16 U.S.C. §§ 1531-1534) protects plant and animal  
19   species (and their designated critical habitats) that are listed under the ESA as threatened or  
20   endangered. ESA-listed species of marine invertebrates, marine and anadromous fishes, marine  
21   reptiles, and marine mammals, with the exception of the sea otter, are under the jurisdiction of  
22   the National Marine Fisheries Service (NMFS). Remaining ESA-listed species, including the sea  
23   otter, are under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS). The ESA  
24   requires federal agencies to consult with the USFWS or NMFS, as applicable to the species in  
25   question, before initiating any action that may adversely affect a listed species.

#### 26   **Migratory Bird Treaty Act and Executive Order 13186**

27   The Migratory Bird Treaty Act of 1918 (MBTA) (16 U.S.C. §§ 703-712) is domestic legislation  
28   implementing international agreements made among the United States, England, Mexico, the  
29   former Soviet Union, and Japan to protect migratory bird populations. It protects indigenous  
30   species of birds that live, reproduce, or migrate within or across international borders at some  
31   point during their life cycles from unauthorized take (possession, injury, or mortality). Executive  
32   Order 13186, issued by President Clinton in 2001, provides additional mechanisms for federal  
33   agencies to protect migratory birds and to promote their conservation.

#### 34   **Bald Eagle Protection Act**

35   The Bald Eagle Protection Act of 1940 (16 U.S.C. 668-668d, 54 Stat. 250), as amended, was  
36   approved June 8, 1940, and amended by P.L. 86-70 (73 Stat. 143) June 25, 1959; P.L. 87-884  
37   (76 Stat. 1346) October 24, 1962; P.L. 92-535 (86 Stat. 1064) October 23, 1972; and P.L. 95-616  
38   (92 Stat. 3114) November 8, 1978. The Bald Eagle Protection Act provides for the protection of

1 the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain  
2 specified conditions, the taking, possession and commerce of such birds. The 1972 amendments  
3 increased penalties for violating provisions of the Bald Eagle Protection Act or regulations  
4 issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for  
5 information leading to arrest and conviction for violation of the Bald Eagle Protection Act.

6 The 1978 amendment authorizes the Secretary of the Interior to permit the taking of golden eagle  
7 nests that interfere with resource development or recovery operations (see also the Migratory  
8 Bird Treaty Act and the Endangered Species Act). A 1994 Memorandum (59 F.R. 22953, April  
9 29, 1994) from President Clinton to the heads of Executive Agencies and Departments sets out  
10 the policy concerning collection and distribution of eagle feathers for Native American religious  
11 purposes.

### 12 **Marine Mammal Protection Act**

13 The Marine Mammal Protection Act (MMPA) (16 U.S.C. §§ 1361-1421h) protects and  
14 conserves marine mammal species by prohibiting harm or harassment of any marine mammal  
15 unless specifically authorized by the National Oceanic and Atmospheric Administration Fisheries  
16 Service (NOAA Fisheries). If it is determined that an action could harm or harass marine  
17 mammals, the project proponent shall consult with either the USFWS or NMFS to determine if a  
18 permit to take a marine mammal is required.

### 19 **Magnuson-Stevens Fishery Conservation and Management Act**

20 The Magnuson-Stevens Fishery Conservation and Management Act (MSA) (amended by the  
21 Sustainable Fisheries Act of 1996, P.L. 104-267, as codified in scattered sections of 16 U.S.C. §  
22 1801 et seq.) applies to fisheries resources and fishing activities in federal waters that extend to  
23 200 miles (322 km) off shore. It addresses conserving and managing U.S. fisheries, developing  
24 domestic fisheries, and phasing out foreign fishing activities. It also establishes regional fisheries  
25 management councils that set fishing quotas and restrictions in U.S. waters in the form of fishery  
26 management plans (FMPs). All fish included in a FMP are assigned essential fish habitat  
27 (EFH)—those waters and substrate necessary for fish to spawn, breed, feed, or grow to maturity.  
28 Federal agencies must consult with the NMFS on proposed actions authorized, funded, or  
29 undertaken by the agency that may adversely affect EFH.

### 30 **Clean Water Act/Federal Water Pollution Control Act**

31 The Clean Water Act (CWA)/Federal Water Pollution Control Act (33 U.S.C. §§ 1251-1387)  
32 sets the basic structure for regulating discharges of pollutants to waters of the U.S. This includes  
33 those waters used for navigation or those leading to navigable rivers or waters used for interstate  
34 commerce (including lakes) and wetlands bordering streams or other water bodies. The CWA  
35 states that is unlawful for any person to discharge any pollutant from a point source into  
36 navigable waters in the absence of a permit. Section 404 of the CWA (33 U.S.C. §§ 1344)  
37 requires a permit from the U.S. Army Corps of Engineers for the placement of dredged or fill  
38 material in to waters of the U.S.

1 Waters of the U.S. include all waters that are, have been, or are likely to be important to  
2 interstate commerce, including tidal waters, freshwater lakes, rivers and streams, and wetlands  
3 that are adjacent to these water bodies. The landward regulatory limit for nontidal waters (in the  
4 absence of adjacent wetlands) is the “ordinary high water mark,” which is the line on the shore  
5 established by the fluctuation of water and indicated by physical characteristics. Wetlands are  
6 defined under CWA regulations as “those areas that are inundated or saturated by surface or  
7 groundwater at a frequency and duration sufficient to support, and that under normal  
8 circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil  
9 conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 C.F.R.  
10 328.3). Jurisdictional wetlands exist when these three criteria are present: wetlands hydrology,  
11 hydric soils, and hydrophytic vegetation (Environmental Laboratory 1987).

12 As authorized by the CWA, the National Pollutant Discharge Elimination System (NPDES)  
13 permit program controls water pollution by regulating point sources that discharge pollutants into  
14 waters of the U.S. Point sources are discrete conveyances such as pipes or man-made ditches.  
15 Individual homes that are connected to a municipal system, use a septic system, or do not have a  
16 surface discharge do not need an NPDES permit; however, industrial, municipal, and other  
17 facilities must obtain permits if their discharges go directly to surface waters (USEPA 2003).

### 18 **Rivers and Harbors Appropriations Act of 1899**

19 Section 10 of the Federal Rivers and Harbors Appropriation Act of 1899 (RHA) (30 Stat. 1151,  
20 codified at 33 U.S.C. §§ 401, 403) prohibits the unauthorized obstruction or alteration of any  
21 navigable water (33 U.S.C. § 403). Navigable waters under the RHA are those “subject to the  
22 ebb and flow of the tide and/or are presently used, or have been used in the past, or may be  
23 susceptible for use to transport interstate or foreign commerce” (33 C.F.R. § 3294). Typical  
24 activities requiring Section 10 permits are construction of piers, wharves, bulkheads, marinas,  
25 ramps, floats, intake structures, cable or pipeline crossings, and dredging and excavation.

### 26 **Executive Order 11990**

27 Executive Order 11990, Protection of Wetlands (42 Fed. Reg. 26961, May 24, 1977), was signed  
28 by President Carter and directs federal agencies to avoid, wherever feasible, the adverse impacts  
29 associated with destroying or modifying wetlands.

### 30 **3.8.2 Vegetation/Habitat Types**

31 NMCRC Tacoma consists of industrial land with parking lots, buildings, and minor landscaping.  
32 There is no vegetation/habitat present in the upland, terrestrial areas of the ROI (Grette  
33 Associates<sup>LLC</sup> 2008).

34 Hylebos Waterway and Blair Waterway are aquatic/marine habitats with shorelines consisting of  
35 completely modified areas with riprap or a combination of rock and concrete slab. A  
36 pile-supported overwater pier structure is present in Hylebos Waterway on the NMCRC Tacoma  
37 site. The top of the shoreline bank of both waterways in the ROI support sparse, weedy,  
38 non-native vegetation including Himalayan blackberry, Scot’s broom, Japanese knotweed, and  
39 butterfly bush (Grette Associates<sup>LLC</sup> 2008).

1 **3.8.3 Wildlife**

2 Since the terrestrial portions of the ROI consist entirely of industrial land with no wildlife  
 3 habitat, wildlife, other than those species adapted to such conditions (e.g., rats, gulls, rock doves  
 4 [*Columba livia*]), are not expected to occur there. Wildlife does have potential to occur in the  
 5 aquatic/marine habitats of Hylebos and Blair waterways in the ROI. This wildlife could consist  
 6 of species of fish, bivalves, shrimp, crabs, birds, and marine mammals (Table 3.8-1).

**Table 3.8-1  
Wildlife Potentially Present in Hylebos and Blair Waterways in the ROI<sup>1</sup>**

<b>Shrimp</b>	<b>Bivalves</b>	<b>Crabs</b>	<b>Fish</b>	<b>Birds</b>	<b>Marine Mammals</b>
Pink shrimp	Butter clam	Purple crab	Pacific herring–FCo, SC <sup>2</sup>	Mallard	Harbor seal
Coonstripe shrimp	Littleneck clam	Graceful crab	Chinook salmon (Puget Sound)–FT,SC <sup>2</sup>	Widgeon	Steller sea lion–FT,ST <sup>2</sup>
Dock shrimp	Horse clam	Red rock crab	Chum salmon	Green-winged teal	Pacific harbor porpoise–SC <sup>2</sup>
Spot shrimp	Soft-shell clam	Dungeness crab	Coho salmon (Puget Sound)–FCo <sup>2</sup>	Pintail	Killer whale–FE,SE <sup>2</sup>
	Cockles		Pink salmon	Goldeneye	Humpback whale–FE, SE <sup>2</sup>
	Geoducks		Cutthroat trout	Glaucous-winged gull	Gray whale–SS <sup>2</sup>
			Steelhead (Puget Sound)–FT <sup>2</sup>	Pigeon guillemonts	
			Bull trout–FT,SC <sup>2</sup>	Bald eagle–FCo,SS <sup>2</sup>	
			Surf smelt	Peregrine falcon–FCo, SS <sup>2</sup>	
			Three spine stickleback	Marbled murrelet–FT,ST <sup>2</sup>	
			Bay pipefish	Dunlin	
			Shiner perch	Ring-necked duck	
			Striped seaperch	Greater scaup	
			Pile perch	Western grebe–SC <sup>2</sup>	
			Snake prickleback	Mew gull	
			Crescent gunnel	Common tern	
			Red gunnel		
			Pacific sand lance		
			Pacific staghorn sculpin		
			Flathead sole		
			English sole		
			Starry flounder		
			Ratfish		
			Blackbelly eelpout		
			Speckled sanddab		
			Rock sole		
			Dover sole		
			Sand sole		
			C-O sole		
			Many groundfish spp.		

<sup>1</sup>Table adapted from Grette Associates<sup>LLC</sup> (2008) based on Dames & Moore (1981).

<sup>2</sup>Status is from Washington Department of Fish and Wildlife (2008): FE – Federally Listed Endangered; FT – Federally Listed Threatened; FCo – Federal Species of Concern; SE – Washington State Endangered; ST – Washington State Threatened; SC – Washington State Candidate for Listing; SS – Washington State Sensitive

### 1 **3.8.4 Sensitive Species**

2 This section identifies special status, or sensitive, species that may occur in the Hylebos and  
3 Blair waterways in the ROI. Many of the species locations listed below are described in  
4 reference to Puget Sound. Both Hylebos and Blair waterways are connected with Puget Sound as  
5 follows. Both waterways flow into Commencement Bay, and Commencement Bay is at the  
6 southern end of Puget Sound. The nearshore area and waterways of Commencement Bay are  
7 used extensively as rearing and feeding habitat by numerous marine species, and the bay serves  
8 as a migratory pathway for salmonids (NOAA 2008). With the connection between Puget Sound,  
9 Commencement Bay, and the waterways, there is some potential that sensitive species that occur,  
10 or have potential to occur, in Puget Sound or Commencement Bay could also occur in Hylebos  
11 and/or Blair waterways.

12 Sensitive species discussed in this section are those that are Federally Listed Endangered or  
13 Threatened, are Federal Species of Concern, or are candidates for federal listing. Since there is  
14 no statutory mandate for federal entities to protect state listed species, state listed (and state  
15 species of lesser sensitivity) are not discussed in this section. State sensitive species are listed in  
16 Table 3.8-1, however. There are no sensitive plant species with potential to occur in the ROI.  
17 There are 14 sensitive animal species with potential to occur in the waterways in the ROI as  
18 shown in Table 3.8-1 (Grette Associates<sup>LLC</sup> 2008); 11 of these are Federally sensitive as  
19 discussed below.

#### 20 **Sensitive (ESA) Fish Species**

##### 21 **Salmonids**

22 Adult salmonids leave the ocean and migrate to freshwater streams when they are two or three  
23 years old, although this varies by species. They follow a migratory route that takes them to deep  
24 pools along a river where they may wait several months until they are sexually mature. In order  
25 to successfully reproduce, salmon need clean, cold water flowing over a gravel bed. Females  
26 search out these conditions and will lay their eggs in a gravel depression they dig called a redd.  
27 Adult Chinook and coho salmon die within one to two weeks after spawning. Steelhead do not  
28 necessarily die but may live to spawn another year. Salmonid eggs hatch in one to two months  
29 and remain in the stream absorbing essential nutrients from their yolk. Once the hatchlings  
30 surface from their gravel covering, they are known as juveniles and feed on larvae and other  
31 planktonic (drifting) organisms in the river. The amount of time the juvenile salmonids remain in  
32 the river varies, with some emigrating immediately and others remaining for several months or  
33 years. Once juvenile salmonids have migrated to the ocean they will remain there until they are  
34 from two to four years of age, and then they will begin their spawning migration (Southwest  
35 Division Naval Facilities Engineering Command 2003).

36 Bull trout have more specific habitat requirements that appear to influence their distribution and  
37 abundance. They need cold water to survive, so they are seldom found in waters where  
38 temperatures exceed 59 to 64 degrees Fahrenheit (15 to 17 degrees Celsius). They also require  
39 stable stream channels, clean spawning and rearing gravel, complex and diverse cover, and  
40 unblocked migratory corridors. Resident bull trout spend their entire lives in the same  
41 stream/creek. Migratory bull trout move to larger bodies of water to rear young and then migrate

1 back to smaller waters to reproduce. An anadromous form of bull trout also exists in the Coastal-  
2 Puget Sound population, which spawns in rivers and streams but rears young in the ocean.  
3 Resident and juvenile bull trout prey on invertebrates and small fish. Adult migratory bull trout  
4 primarily eat fish (USFWS 2008a).

5 For salmonids, a population (or group of populations) is considered distinct (and may be given  
6 consideration for listing under the ESA) if it represents an evolutionarily significant unit (ESU)  
7 of the biological species. To be considered an ESU (or an essentially equivalent Distinct  
8 Population Segment [DPS]), a population must be reproductively isolated, such that  
9 evolutionarily different important differences accrue, and it contributed substantially to the  
10 ecological and genetic diversity of the species as a whole (Naval Facilities Engineering  
11 Command Southwest Division 2003).

12 The sensitive salmonids that may occur in Hylebos or Blair waterways include Chinook salmon  
13 (*Oncorhynchus tshawytscha*; Federally Listed Threatened Puget Sound ESU), Coho salmon  
14 (*Oncorhynchus kisutch*; Federal Species of Concern Puget Sound/Strait of Georgia ESU),  
15 steelhead (*Oncorhynchus mykiss*; Federally Listed Threatened Puget Sound DPS), and bull trout  
16 (*Salvelinus confluentus*; Federally Listed Threatened).

17 Chinook salmon. The Chinook salmon Federally Listed Threatened Puget Sound ESU includes  
18 all naturally spawned populations of Chinook salmon from rivers and streams flowing into Puget  
19 Sound, as well as 26 artificial propagation programs (NMFS 2008a).

20 Coho salmon. The coho salmon Federal Species of Concern Puget Sound/Strait of Georgia ESU  
21 includes all naturally spawned populations of coho salmon from drainages of Puget Sound and  
22 Hood Canal, the eastern Olympic Peninsula (east of Salt Creek), and the Strait of Georgia from  
23 the eastern side of Vancouver Island and the British Columbia mainland (north to and including  
24 the Campbell and Powell Rivers), excluding the upper Fraser River above Hope (NMFS 2008c).

25 Steelhead. The steelhead Federally Listed Threatened Puget Sound DPS includes all naturally  
26 spawned anadromous winter-run and summer-run steelhead populations in streams in the river  
27 basins of the Strait of Juan de Fuca, Puget Sound, and Hood Canal, Washington, bounded to the  
28 west by the Elwha River (inclusive) and to the north by the Nooksack River and Dakota Creek  
29 (inclusive), as well as the Green River natural and Hamma Hamma winter-run steelhead hatchery  
30 stocks (NMFS 2008b). Critical habitat for the Puget Sound DPS has not yet been designated; it is  
31 currently under development (NMFS 2007).

32 Bull trout. Critical habitat has been designated for the bull trout that includes the Klamath River,  
33 Columbia River, Jarbidge River, Coastal-Puget Sound, and Saint Mary-Belly River populations  
34 of bull trout in the coterminous United States (USFWS 2005a). Critical Habitat Unit 28 (i.e.,  
35 Coastal-Puget Sound) includes the ROI.

36 Pacific Herring (*Clupea harengus pallasii*; Federal Species of Concern)

37 Most Washington State herring stocks spawn from late January through early April. Herring  
38 deposit transparent, adhesive eggs on intertidal and shallow subtidal eelgrass and marine algae.  
39 Eggs may be deposited anywhere between the upper limits of high tide to a depth of -40 feet (-12

1 meters), but most spawning takes place between 0 and -10 feet (0 and -3 meters) in tidal  
2 elevation. Eggs hatch in about 14 days, producing slender, transparent larvae. At this stage, they  
3 are at the mercy of currents and subject to heavy predation by larger organisms. Pacific herring's  
4 first food consists of invertebrate eggs, copepod nauplii, and diatoms. Young herring also eat the  
5 larvae of barnacles, mollusks, bryozoans, rotifers, and fish. Adults eat various crustaceans and  
6 juvenile stages of smelt, herring, sand lance, hake, and rockfish (Barnhart 1988). At about three  
7 months of age, herring metamorphose into their adult form and coloration. They will mature and  
8 return to their spawning ground in their second or third year. Herring do not normally die after  
9 spawning, and continue to spawn in successive years. Natural mortality is quite high,  
10 approximately 50 to 70 percent of the adult herring from Washington will fall to predation each  
11 year. Thus, the typical Puget Sound herring is relatively short lived, rarely surviving beyond age  
12 five. Some herring stocks appear to have an annual migration from inshore spawning grounds to  
13 open ocean feeding areas, while others appear to be more "resident", remaining inside the Puget  
14 Sound basin year-round. Adult herring feed primarily on planktonic crustaceans, and in turn, are  
15 food for many marine animals such as seabirds, marine mammals, and other fishes. Herring  
16 stocks are defined by spawning grounds. At least 18 stocks spawn inside Puget Sound and one  
17 on the Washington coast in central Willapa Bay (Washington Department of Fish and Wildlife  
18 1997).

### 19 **Sensitive (ESA) Bird Species**

#### 20 Marbled Murrelet (*Brachyramphus marmoratus*; Federally Listed Threatened)

21 On a broad scale, marbled murrelets occur in disjunct populations from the Aleutian Islands to  
22 California with the geographic center of the distribution being the northern part of southeast  
23 Alaska. Marbled murrelets spend most of their lives at sea where they are usually found as  
24 widely spaced pairs that sometimes join into flocks associated with river plumes and currents. In  
25 winter, in the vicinity of the ROI, marbled murrelets seasonally move into the sheltered waters of  
26 Puget Sound. During the breeding season, marbled murrelets are found in late successional and  
27 old growth forests (Ralph, et al. 1995). Sand lance and Pacific herring made up the majority of  
28 the diet of breeding adult marbled murrelets in a study conducted in Barkley Sound on the  
29 southwest coast of Vancouver Island (Burkett 1995).

30 Critical habitat has been designated for the marbled murrelet, but the designation does not  
31 include the ROI (USFWS 1996). The USFWS has proposed to revise the designated critical  
32 habitat for the marbled murrelet by removing approximately 254,070 acres (102,820 ha) in  
33 northern California and Oregon from the 1996 designation, so even the proposed revision would  
34 not include the ROI (USFWS 2008b).

#### 35 Bald Eagle (*Haliaeetus leucocephalus*; Federal Species of Concern)

36 The USFWS removed the bald eagle from the federal list of threatened and endangered species  
37 in 2007. Bald eagles and their nests are still protected by the Bald Eagle Protection Act and the  
38 Migratory Bird Treaty Act.

39 Bald eagle nesting habitat requirements include large trees near open water that are not subject to  
40 intense human activity. Foraging areas during breeding require perch trees distributed throughout

1 the nesting territory. Bald eagles are opportunistic foragers that feed mostly on fish and  
2 waterfowl associated with large, open expanses of water (Stinson, et al. 2001).

3 Hundreds of adult bald eagles that winter in Washington rely on chum salmon as an annual food  
4 source. When the sources of chum salmon are depleted, many disperse to other major rivers for  
5 salmon, waterfowl, and carrion from dairy farms in the lowlands of Puget Sound. Chum salmon  
6 are distributed throughout the river systems of the Puget Sound region, which includes the  
7 streams of north and south Puget Sound, Hood Canal, and the Strait of Juan de Fuca. This  
8 region's chum stocks have been grouped into three run timings; summer (spawning in September  
9 and October), fall (spawning in November and December), and winter (spawning in January and  
10 February). The fall run is the largest segment of overall chum returns; typically making up 90  
11 percent of the annual total number of chum salmon returning to Puget Sound. Over the last three  
12 decades, the chum salmon populations of Puget Sound have increased to the point that they are  
13 now the most abundant salmon species in the region (Washington Department of Fish and  
14 Wildlife 2000).

15 Communal roosts are an important component of wintering habitat. These roosts are based on  
16 tree structure and exposure; the largest and tallest trees being used most often (Stinson, et al.  
17 2001). Since the 1800s, Puget Sound has lost an estimated 47 percent of its wetlands that were a  
18 food source for bald eagles, and a substantial portion of the Puget Sound lowland forests have  
19 been converted to other uses (Stinson, et al. 2001) making them unsuitable for bald eagle nesting.

#### 20 Peregrine Falcon (*Falco peregrinus*; Federal Species of Concern)

21 The peregrine falcon experienced a dramatic population decline over much of its nearly global  
22 range following the widespread use of the insecticide DDT shortly after World War II.  
23 Peregrines are aerial hunters of birds, and their tissue accumulated DDT and other  
24 organochlorine pesticides from their prey. Peregrine falcon prey consists almost exclusively of  
25 birds, which make up 77 to 99 percent of prey items. The most important set of prey, by biomass,  
26 is from the family Columbidae. Birds eaten include mourning doves, pigeons, shorebirds,  
27 waterfowl, ptarmigan, grouse, and relatives, as well as smaller songbirds. They will also eat  
28 small reptiles and mammals. Most frequent mammal prey are bats (*Tadarida*, *Eptesicus*, *Myotis*,  
29 *Pipistrellus*), followed by arvicoline rodents (Arvicolinae), squirrels (Sciuridae), and rats (*Rattus*  
30 spp.; Dewey 2002).

31 The pesticide contaminant load caused eggshell thinning and other toxic effects. The thinned  
32 eggshells broke on nest ledges, or eggs were not viable, and this facilitated a rapid population  
33 decline that extirpated the species from eastern North America and greatly reduced its abundance  
34 in western North America. The peregrine was listed as an endangered species by the USFWS in  
35 1970. The banning of DDT, along with peregrine reintroduction programs and the protection of  
36 nest sites, allowed the population to increase over the last 20-year period (Washington  
37 Department of Fish and Wildlife 2002). The USFWS delisted the peregrine falcon in 1999.  
38 Washington's peregrine falcon population remains vulnerable due to its small numbers (72  
39 occupied territories in 2001; Hayes, et al. 2002).

40 The greatest numbers of nesting sites in Washington are in the San Juan Islands and lowlands of  
41 northern Puget Sound. Prominent cliffs in close proximity to a water source (e.g., river, lake,

1 marine water) are the most common habitat characteristic of nesting territories; however,  
2 peregrines will nest on steep slopes, tall buildings, and bridges in urbanized or industrial  
3 environments. Important winter roost sites in Washington are islands offshore of mainland  
4 foraging areas in northern Puget Sound (Hayes, et al. 2002).

## 5 **Sensitive (ESA) Marine Mammal Species**

### 6 Humpback Whale (*Megaptera novaeangliae*; Federally Listed Endangered)

7 Humpback whales are widely distributed in all oceans, ranging from tropical wintering grounds  
8 near islands and continental coasts to open-ocean temperate and sub-polar summering habitats.  
9 They eat by filtering their food (krill, anchovies, cod, sardines, mackerel, capelin, and other  
10 schooling fish) through baleen plates. They typically spend summer months in high-latitude  
11 waters then migrate to warm-water, low-latitude breeding areas in winter. Humpback whales are  
12 probably old enough to mate at about 7 years of age. Females are pregnant for about 11 to 12  
13 months and get pregnant approximately every 2 to 4 years. Calves are born able to swim and can  
14 grow 1.5 feet (0.5 meters) per month while nursing. Females nurse their calves in warm, shallow  
15 water. At the end of the mating and calving season, humpback whales migrate to high-latitude,  
16 cold, productive waters to feed (National Marine Mammal Laboratory 2008a).

17 Humpback whale populations were severely depleted by mid-twentieth century due to  
18 commercial whaling. Whaling was officially banned in the North Pacific in 1967. With recovery  
19 of the humpback whale in this region, the species is being seen in areas where they were  
20 historically reported but have not been seen for decades. The inside waters of Washington State  
21 is one location where humpbacks appear to be returning (Falcone, et al. 2005). A juvenile  
22 humpback whale has been observed in Puget Sound as recent as May 2008 (Associated Press  
23 2008).

24 No critical habitat rules have been published for the humpback whale.

### 25 Killer Whale (*Orcinus orca*; Federally Listed Endangered)

26 Killer whales are highly social and occur primarily in groups or pods of up to 40 to 50 animals  
27 depending on seasonal concentrations of prey, social interaction, or breeding. Killer whales feed  
28 on marine organisms from fish to other marine mammals. Based on preliminary observations,  
29 fish are the main dietary component of resident killer whales in the northeastern Pacific, and  
30 salmon are the preferred prey. Transient killer whales feed primarily on marine mammals. Most  
31 mating in the north Pacific is believed to occur from May to October with births largely  
32 occurring from October to March (Wiles 2004).

33 Two of the three southern resident killer whale pods are regularly present in the Georgia Basin  
34 (Georgia Strait, San Juan Islands, and Strait of Juan de Fuca) from late spring to early fall, but  
35 they make frequent trips to the outer coasts of Washington and southern Vancouver Island. The  
36 third pod is present only intermittently in Georgia Basin and Puget Sound. During early fall,  
37 southern resident pods expand their movements into Puget Sound likely to take advantage of  
38 chum and Chinook salmon runs. Movements in to seldom-visited bodies of water may occur at  
39 this time. From late fall, winter, and into early spring, the ranges and movements of the southern  
40 resident killer whales are poorly known. One pod continues to occur intermittently in Georgia  
41 Basin and Puget Sound (Wiles 2004).

1 Critical habitat has been designated for the southern resident killer whale in all marine habitat in  
2 Pierce County, Washington, which includes the ROI. The Final Rule for designation of this  
3 critical habitat was published in the *Federal Register* on November 29, 2006 (NMFS 2006).

#### 4 Steller Sea Lion (*Eumetopias jubatus*; Federally Listed Threatened)

5 The steller sea lion is the largest member of the Otariid (eared seal) family. Steller sea lions are  
6 distributed across the north Pacific Ocean rim from northern Hokkaido, Japan, through the Kuril  
7 Islands, Okhotsk Sea, and Commander Islands in Russia, the Aleutian Islands, central Bering  
8 Sea, and southern coast of Alaska, and south to the Channel Islands off California. During the  
9 May-to-July breeding season, steller sea lions congregate at more than 40 rookeries, where adult  
10 males defend territories, mating takes place, and pups are born. Non-reproductive animals  
11 congregate to rest at more than 200 haul-out sites where little or no breeding takes place. Sea  
12 lions continue to gather at both rookeries and haul-out sites outside of the breeding season  
13 (National Marine Mammal Laboratory 2008b). Steller sea lions prefer the colder temperate to  
14 sub-arctic waters of the north Pacific Ocean. Haul-outs and rookeries usually consist of beaches  
15 (gravel, rocky or sand), ledges, and rocky reefs (National Oceanic and Atmospheric Association  
16 Fisheries 2008). Steller sea lions are opportunistic predators, feeding primarily of a wide variety  
17 of fishes and cephalopods. Prey varies geographically and seasonally (National Marine Mammal  
18 Laboratory 2008b).

19 The steller sea lion population is divided into western and the eastern DPSs at 144° west  
20 longitude (Cape Suckling, Alaska). The western DPS includes steller sea lions that reside in the  
21 central and western Gulf of Alaska, Aleutian Islands, as well as those that inhabit the coastal  
22 waters and breed in Asia (e.g., Japan and Russia). The eastern DPS includes sea lions living in  
23 southeast Alaska, British Columbia, California, and Oregon (National Oceanic and Atmospheric  
24 Association Fisheries 2008).

25 Critical habitat was designated for the steller sea lion in 1993 in western south-central Alaska  
26 and southeast Alaska (NMFS 1993). This includes a 20 nautical-mile (37-km) buffer around all  
27 major haul-outs and rookeries, as well as associated terrestrial, air, and aquatic zones, and three  
28 large off shore foraging areas. No critical habitat for the steller sea lion occurs in the ROI.

29 The only location in Puget Sound where the steller sea lion has been reported is on the Toliva  
30 Shoals buoy between Gig Harbor to the north and Olympia to the south of the ROI (Jeffries, et  
31 al. 2000). To access the Toliva Shoals buoy, the steller sea lion may travel through  
32 Commencement Bay and could enter the ROI.

#### 33 **Migratory Bird Treaty Act Protected Species**

34 The MBTA protects indigenous species of birds that live, reproduce, or migrate within or across  
35 international borders at some point during their life cycles from unauthorized take. With so many  
36 species protected by the MBTA, it is likely that some of these species could occur in the ROI,  
37 although the total number is expected to be low due to the highly industrialized nature of the  
38 ROI. Table 3.8-1 lists MBTA-protected bird species that could use the aquatic/marine habitats  
39 of Hylebos and Blair waterways in the ROI. Furthermore, these MBTA-protected bird species  
40 have potential to occur and nest in the developed portion of the ROI (that would be directly  
41 affected by the proposed action) if proper conditions for nesting are present: osprey (*Pandion*  
42 *haliaetus*), mourning dove (*Zenaida macroura*), barn owl (*Tyto alba*), cliff swallow

1 (*Petrochelidon pyrrhonota*), northern rough-winged swallow (*Stelgidopteryx serripennis*,  
2 Brewer's blackbird (*Euphagus cyanocephalus*), and house finch (*Carpodacus mexicanus*). This  
3 latter list was compiled based on bird species occurrence information for Pierce County,  
4 Washington (Washington Birder 2008) and the developed condition of the ROI.

### 5 **3.8.5 Sensitive Habitats**

6 Sensitive habitats are those to which federal, state, local agencies, or conservation organizations  
7 have assigned special status because they are declining or restricted in area. Habitats and  
8 vegetation communities that are unique or that offer particular value to wildlife are also  
9 considered sensitive. There are no sensitive habitats in the terrestrial portions of the ROI. There  
10 is sensitive habitat (i.e., critical habitat) in Hylebos and Blair waterways.

### 11 **Critical Habitat**

12 Designated critical habitat for the following species occurs in Hylebos and Blair waterways in  
13 the ROI.

- 14 • Chinook salmon Puget Sound ESU (NMFS 2008a). NMCRC Tacoma is not a facility  
15 excluded from this critical habitat designation because of a qualifying Integrated Natural  
16 Resource Management Plan (INRMP) or national security impacts from the critical  
17 habitat designation (NMFS 2005).
- 18 • Critical Habitat Unit 28 (i.e., Coastal-Puget Sound) for the bull trout (USFWS 2005a).  
19 NMCRC Tacoma is not a facility excluded from this critical habitat designation because  
20 of a qualifying INRMP or national security impacts from the critical habitat designation  
21 (USFWS 2005a).
- 22 • Southern resident killer whale in all marine habitat in Pierce County, Washington (NMFS  
23 2006).

### 24 **3.8.6 Essential Fish Habitat**

25 EFH is those waters and substrates necessary for fish to spawn, breed, feed, or grow to maturity.  
26 Federal agencies must consult with the NMFS on proposed actions authorized, funded, or  
27 undertaken by the agency that may adversely affect EFH. The following EFH occurs in Hylebos  
28 and Blair waterways in the ROI.

- 29 • Groundfish EFH according to the Pacific Coast Groundfish FMP (Pacific Fishery  
30 Management Council 2005).
- 31 • Chinook and coho salmon EFH according to the West Coast Salmon FMP (Pacific  
32 Fishery Management Council 1999).

1    **3.8.7   Special Aquatic Sites**

2    Under Section 404(b)(1) guidelines of the CWA, the USEPA identifies 6 categories of special  
3    aquatic sites: sanctuaries and refuges, wetland, mudflats, vegetated shallows, coral reefs, and  
4    riffle and pool complexes. Discharges of dredged or fill material in special aquatic sites is not  
5    authorized under Section 404 unless there is no less damaging, practicable alternative. The U.S.  
6    Army Corps of Engineers has concluded that development within Commencement Bay has  
7    resulted in cumulative impacts to special aquatic sites that were historically present. Loss of  
8    these special aquatic sites due to commercial and industrial development was first documented in  
9    the 1870s (Grette Associates<sup>LLC</sup> 2008). There are no special aquatic sites in the ROI; the nearest  
10   special aquatic sites are northeast of the ROI on the opposite shore of Hylebos Waterway (Grette  
11   Associates<sup>LLC</sup> 2008).

## 1   **3.9   GEOLOGY AND GEOLOGIC HAZARDS**

2   This section describes existing geology, seismicity, and geologic hazard conditions within  
3   NMCRC and vicinity. Technical reports related to geology and soils that have been prepared for  
4   the Port of Tacoma Blair-Hylebos Redevelopment Project, which encompasses the NMCRC site,  
5   include Earth/Geology and Groundwater discipline reports prepared by GeoEngineers (2008a  
6   and 2008b). The following analysis is summarized from applicable information in these reports  
7   and other pertinent sources.

### 8   **3.9.1   Regional Geology and Seismicity**

#### 9   **Geologic Setting**

10   The geologic setting of the NMCRC region has been primarily influenced by glacial and  
11   volcanic activities. Specifically, the site and vicinity are within the Puyallup River Valley, a  
12   relict subglacial meltwater trough formed during retreat of the continental glacial ice  
13   approximately 13,000 years ago. After retreat of the glacial ice sheet to the north and the  
14   corresponding sea level rise, marine waters entered the Puyallup Trough and adjacent areas and  
15   formed the Puyallup Embayment. In the NMCRC site vicinity, this embayment resulted in the  
16   deposition of fine-grained marine sediments. The ancestral Puyallup River Delta subsequently  
17   advanced to the northwest (i.e., toward the bay), with associated deposition of non-marine  
18   alluvial deposits. Additional alluvial deposition during this period resulted from glacial  
19   meltwaters, with surrounding slopes to the southwest and northeast consisting of consolidated  
20   glacial and interglacial deposits. The described depositional conditions in the Puyallup River  
21   Valley and Delta generally continued until development of the area, with pre-development  
22   conditions in the Port vicinity (including the NMCRC site) encompassing a mix of tidal flats, salt  
23   and fresh water estuaries, sloughs and embayments.

24   Approximately 5,000 years ago, a massive eruption of Mt. Rainer resulted in a large volcanic  
25   mudflow (known as the Osceola Mudflow) that extended down the Puyallup River Valley  
26   (among other areas) and into the Puyallup Embayment of Puget Sound. Subsequent incision and  
27   erosion of mudflow sediments in the Puyallup River Valley provided increased sediment loads  
28   and contributed to the river delta propagation noted above. A number of smaller volcanic  
29   mudflows in the Puyallup River Valley have resulted in similar sediment loading, with  
30   associated river and delta deposition eventually producing the present day river valley contours.

#### 31   **Seismicity**

32   The NMCRC site is located within a seismically active region associated with the Cascadian  
33   Subduction Zone, a collisional boundary between the North American and Juan de Fuca crustal  
34   plates. The dynamics of this boundary is also complicated by the Pacific Plate, which is pushing  
35   the Juan de Fuca Plate north, causing complex strain to accumulate along the associated plate  
36   boundaries (U.S. Geological Survey 2008). Earthquakes are typically produced along faults  
37   when accumulated strain is abruptly released in relation to horizontal and/or vertical movements  
38   along plate boundaries. In Western Washington, earthquakes occur along shallow crustal faults  
39   (as outlined below) as well as faults related to the noted subduction zone.

1 A number of active or potentially active crustal fault zones extend across western Washington,  
2 including the Tacoma, Seattle and Olympia fault zones in the NMCRC region. Active faults are  
3 generally defined as structures that exhibit historic seismicity or displace Holocene strata (less  
4 than approximately 11,000 years old), while potentially active faults have no historic seismicity  
5 and displace Pleistocene (between approximately 11,000 and 2 million years old) but not  
6 Holocene deposits. The Tacoma Fault Zone includes three main segments trending northwest-  
7 southeast across Puget Sound, including two to the north and one within the southern portion of  
8 Commencement Bay. The Seattle Fault Zone is located further north (near the City of Seattle),  
9 and also extends generally northwest-southeast across Puget Sound. The Olympia Fault Zone is  
10 located further to the southwest near the City of Olympia, and also trends generally northwest-  
11 southeast. The most likely earthquake events along the Tacoma and Seattle fault zones are  
12 identified in the range of magnitude 6.5 to 7.5 by most authors, although both are considered  
13 capable of producing larger events. Major historic earthquake events in the NMCRC region  
14 include the 7.1-magnitude Olympia Earthquake in 1949, the 6.5-magnitude Seattle-Tacoma  
15 Earthquake in 1965, and the 6.8-magnitude Nisqually Earthquake in 2001.

### 16 **3.9.2 Geology Underlying NMCRC Tacoma**

17 The NMCRC site is located within the modern-day Puyallup River delta complex, with the  
18 formation of this area outlined above under Geologic Setting. Surficial and underlying deposits  
19 within the NMCRC and vicinity include recent fill deposits, alluvial materials, and glacial and  
20 non-glacial sediments as described below in order of increasing age. The entire NMCRC site  
21 (along with much of the surrounding Port area) has been previously graded and/or developed,  
22 with the site essentially level and predominantly (over 90 percent) covered with existing  
23 pavement and structures (and the remaining areas encompassing minor landscaping,  
24 graded/unpaved parcels, or open water in the Hylebos Waterway). Due to the developed nature  
25 of the NMCRC site, native topsoil deposits are absent and are not discussed further in this  
26 analysis.

#### 27 **Fill Deposits**

28 With development of the Tacoma and Port areas beginning in the late 19<sup>th</sup> Century, the Blair and  
29 Hylebos (along with other) waterways were dredged, with the dredged spoils generally placed on  
30 the adjacent tidelands, nearshore sites and uplands to create the existing topography of the Port  
31 area. Structural fill (i.e., fill with documented conformance to engineering standards of  
32 composition, compaction, etc.) associated with development of roads and buildings is also  
33 present locally in the upper fill zone. The resulting cap of dredged and structural fill is present  
34 throughout much of the Port area (including the NMCRC site), with thicknesses typically  
35 ranging between approximately 5 and 30 feet (1.5 to 9.1 meters). Dredged fill deposits generally  
36 consist of loose to medium dense sand and silty sand, while structural fill is typically composed  
37 of coarser sandy materials with a gravel base (e.g., road base).

#### 38 **Alluvium**

39 Alluvial materials are present beneath the described fill deposits throughout the NMCRC site and  
40 vicinity, and are associated with stream deposition (e.g., the Puyallup River delta complex) as  
41 previously described. The composition of local alluvium is variable, and includes interbedded

1 fine-to coarse-grained strata extending to probable depths of approximately 300 feet (90 meters).  
2 The fine-grained layers generally consist of very soft to very stiff silt, sandy silt and clayey silt,  
3 while the coarser layers are typically composed of very loose to medium dense sand.

#### 4 **Pre-Vashon Glacial and Non-glacial Deposits**

5 Pre-Vashon-age (between approximately 13,000 and 20,000 years old) glacial and non-glacial  
6 deposits underlie the described alluvium, and extend to approximate depths of 1,000 feet (300  
7 meters). These materials include variable deposits of silt, sand, clay and glacial till.

### 8 **3.9.3 Geologic Hazards at NMCRC Tacoma**

9 Geologic hazards associated with the NMCRC site and adjacent areas include a number of  
10 seismic, non-seismic, and volcanic considerations as outlined below. The following geologic  
11 hazard descriptions are derived from the referenced geotechnical study (GeoEngineers 2008a),  
12 and are also identified in local planning guidelines including the City of Tacoma Critical Areas  
13 Preservation Ordinance (Substitute Ordinance No. 27431), and the Pierce County Development  
14 Regulations (Title 18E).

#### 15 **Seismic Hazards**

16 Seismic hazard areas are generally defined as those areas subject to severe risk of earthquake  
17 damage as a result of ground shaking, ground rupture, soil liquefaction or tsunamis. The general  
18 geologic hazards mapped by Pierce County identify the NMCRC site and vicinity as a seismic  
19 hazard area due to the potential for liquefaction and/or dynamic settlement where fill material  
20 and/or soft or loose alluvial soils are present. Potential seismic hazards associated with the  
21 NMCRC site and vicinity are summarized below, with tsunami hazards discussed in Section 4.10  
22 (Water Resources).

#### 23 **Ground Rupture**

24 As described above under Seismicity, the Puget Sound region encompasses a number of active  
25 fault zones, including mapped segments of the Tacoma Fault Zone located within and adjacent to  
26 Commencement Bay. No known segments of this (or other faults) extend into or immediately  
27 adjacent to the NMCRC Site, with associated on-site ground rupture potential considered low.  
28 Such potential effects cannot be completely discounted, however, as movement along the  
29 Tacoma Fault Zone could conceivably generate on-site surface rupture along currently unknown  
30 fault segments.

#### 31 **Ground Shaking and Ground Motion Amplification**

32 Based on the described regional/local geologic and seismic environments, the NMCRC site  
33 could be subject to moderate to severe ground shaking hazards in association with larger  
34 earthquake events. Specifically, the site could be directly subject to moderate to severe ground  
35 shaking based on proximity to local fault zones, and the described fill deposits within the site  
36 could potentially amplify earthquake ground motions at various frequencies, resulting in  
37 increased levels of local ground shaking. The typically soft and loose nature of local surficial  
38 deposits could also increase the potential for seismically-induced liquefaction effects as  
39 described below.

## 1 Liquefaction and Lateral Spreading

2 Liquefaction occurs when soils lose strength and temporarily behave like a liquid. This  
3 phenomenon is most commonly associated with seismic ground shaking from earthquake events,  
4 and is generally restricted to saturated or near saturated deposits of loose, sandy materials. The  
5 occurrence of liquefaction can result in effects such as the loss of bearing capacity for shallow or  
6 deep foundations, downdrag forces on deep foundations, ground surface settlement, embankment  
7 instability, sand boils, and lateral spreading. The potential for liquefaction at the NMCRC Site  
8 and vicinity during a major seismic event along nearby faults is considered high, based on the  
9 nature of local surficial materials (as described) and anticipated groundwater conditions (refer to  
10 Section 3.10, Water Resources). This conclusion is consistent with mapped liquefaction hazards  
11 identified by state and local sources (including City of Tacoma and Pierce County guidelines as  
12 previously described), as well as a liquefaction analysis completed for the Blair-Hylebos  
13 Redevelopment Project that encompasses the NMCRC site (GeoEngineers 2008a). The latter  
14 analysis evaluated liquefaction potential to a maximum depth of 220 feet (67 meters), and  
15 provided the following conclusions for the YTTI, TOTE, and RRI areas that encompass portions  
16 of the NMCRC site:

- 17 • For an operating level seismic event (OLE, an event with a return interval of  
18 approximately 72 years and a 50 percent chance of being exceeded in 50 years), the YTTI  
19 and TOTE areas were generally classified as: (1) non-liquefiable above the water table;  
20 (2) fully liquefiable at depths of 15 to 25 feet (4.6 to 7.6 meters); (3) marginally  
21 liquefiable at depths of 35 to 45 feet (10.7 to 13.7 meters); and (4) non-liquefiable at  
22 depths of 45 to 220 feet (13.7 to 67 meters).
- 23 • For a contingency level seismic event (CLE, an event with a return interval of  
24 approximately 475 years and a 10 percent chance of being exceeded in 50 years), the  
25 YTTI and TOTE areas were generally classified as: (1) non-liquefiable above the water  
26 table; (2) fully liquefiable at depths of 15 to 25 feet (4.6 to 7.6 meters); (3) non-  
27 liquefiable at depths of 25 to 30 feet (7.6 to 9.1 meters); (4) fully liquefiable at depths of  
28 30 to 45 feet (9.1 to 13.7 meters); (5) non-liquefiable at depths of 45 to 60 feet (13.7 to  
29 18.3 meters); (6) marginally to fully liquefiable at depths of 60 to 70 feet (18.3 to 21.3  
30 meters); and (7) marginally liquefiable at depths of 70 to 220 feet (21.3 to 67 meters).
- 31 • Liquefiable soils within the RRI area were identified to a depth of approximately 80 feet  
32 (24.4 meters) for both OLE and CLE events, and lateral spreading displacement was  
33 noted as a potential hazard for both events in areas adjacent to the Hylebos Waterway.

34 Lateral spreading is a phenomenon related to (and generally induced by) liquefaction, and  
35 typically involves relatively large horizontal displacement of gentle slopes. Such displacement  
36 often entails the surface layer breaking into blocks bounded by fissures while moving down  
37 slope. The occurrence of lateral spreading can produce similar effects to surficial stability and  
38 associated surface and subsurface structures as noted above for liquefaction.

## 1 **Non-seismic Hazards**

### 2 Erosion and Sedimentation

3 The susceptibility to erosion and off-site sediment transport (sedimentation) is generally a  
4 function of soil type, topography, and surface runoff. Erosion hazard areas are generally defined  
5 as those areas with a combination of soil type and slope that make the area susceptible to erosion  
6 by water flow from precipitation or runoff. The City of Tacoma defines Erosion Hazard Areas to  
7 include artificial fill or alluvium (among other units) with slopes greater than 15 percent.  
8 Because the NMCRC site and adjacent areas are mostly level and developed with pavement,  
9 structures, and landscaping (with the exception of vertical bulkheads along the Hylebos  
10 Waterway), existing erosion and sedimentation hazards are considered low. These potential  
11 hazard levels could change during site demolition and redevelopment, however, with additional  
12 discussion provided in Section 4.10 of this document (Water Resources) based on the  
13 relationship of this potential issue to water quality concerns.

### 14 Landslides

15 As noted above for erosion and sedimentation, the NMCRC site and adjacent areas are mostly  
16 level, with the exception of bulkheads along the Hylebos Waterway. Based on these conditions,  
17 existing potential for on-site landsliding hazards are considered low.

## 18 **Volcanic Hazards**

19 The Blair Peninsula (including the NMCRC site) is within a Volcanic Hazard Area Map  
20 produced by the City of Tacoma (GeoEngineers 2008a). This designation is based on the  
21 proximity of Mt. Rainier, which is considered an active volcano. The potential effects to the  
22 NMCRC site and vicinity from an eruption at Mt. Rainier would be dependent on numerous  
23 factors and are difficult to predict accurately, although one such hazard to the site could involve  
24 a volcanic debris flow (or lahar) that could potentially reach the site area under certain  
25 conditions. Over the past 10,000 years, Mt. Rainier has been the source of numerous lahars that  
26 buried now densely populated areas as far as 60 miles (100 kilometers) from the volcano. As  
27 previously discussed, one such lahar (the Osceola Mudflow) is documented to have reached  
28 Commencement Bay. Evidence from previous lahar deposits, combined with observations of  
29 modern debris flows, suggest that previous flows from Mt. Rainier traveled at speeds as fast as 40  
30 to 50 mph (70 to 80 km/hr) and accumulated to considerable depths. During the past few  
31 thousand years, significant lahars have recurred, on average, at least once every 500 to 1,000  
32 years. Lahars are most commonly associated with volcanic eruptions, and volcanic activity in  
33 such instances can serve as an early warning system. They can also be triggered by other events,  
34 however, such as earthquakes, hydrothermal-system explosions or the collapse of a volcano  
35 flank. These types of events could potentially generate a massive lahar with no recognized  
36 precursory warning (GeoEngineers 2008a).

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## 1    **3.10    WATER RESOURCES**

2    This section describes existing regulatory considerations related to the proposed action and  
3    alternatives, as well as surface/groundwater hydrology and water quality conditions within the  
4    NMCRC property and vicinity. A number of technical reports related to water resources have  
5    been prepared for the BHTRP, which encompasses the NMCRC site, as follows: (1) a  
6    Stormwater Technical Report (STR) prepared by Kennedy/Jenks Consultants (KJC, 2008); (2) a  
7    Water Quality Technical Report (WQTR) prepared by A.C. Kindig & Company (Kindig, 2008);  
8    and (3) Earth/Geology and Groundwater discipline reports prepared by GeoEngineers (2008a  
9    and 2008b). The following analysis is summarized from applicable information in these reports.

10   Additional water-related issues such as storm water collection and contamination from hazardous  
11   materials are discussed in Sections 3.11 (Utilities) and 3.13 (Hazardous Materials and Waste) of  
12   this EA.

### 13    **3.10.1   Regulatory Considerations**

14   Implementation of the proposed action and alternatives would be subject to a number of  
15   regulatory requirements associated with applicable federal, state and/or local guidelines, as  
16   summarized below. Additional discussion of water-related regulatory requirements is provided  
17   under the discussion of potential water resource impacts in Section 4.10, as appropriate.

#### 18    **Federal Clean Water Act**

19   The proposed action and alternatives are subject to applicable elements of the federal CWA  
20   (33 U.S.C. §1251-1387), including the NPDES and Section 303(d)/Total Maximum Daily Load  
21   (TMDL) criteria. These requirements are outlined below along with related state and/or local  
22   standards, with additional information provided in the previously referenced STR and WQTR  
23   (refer also to Section 3.8 of this EA, Biological Resources, for additional discussion of the  
24   CWA).

#### 25    **NPDES Permit for Construction Discharge**

26   For all new construction activity disturbing at least one acre, a Notice of Intent (NOI) must be  
27   filed to obtain (or ensure conformance with) a NPDES Permit (General or Individual) for  
28   discharge of storm water. Coverage under a General or Individual NPDES Construction  
29   Discharge Permit would be issued by the Washington State Department of Ecology (Ecology),  
30   pursuant to related CWA authorization. The determination of whether the proposed activities and  
31   associated water quality risks warrant Individual or General permit coverage is made by  
32   Ecology, with either permit requiring preparation and implementation of a storm water pollution  
33   prevention plan (SWPPP) and associated monitoring. Pollution control requirements in SWPPPs  
34   involve the use of applicable best management practices (BMPs) to address potential  
35   contaminant discharge associated with activities/sources including erosion/sedimentation,  
36   construction-related hazardous materials (fuels, etc.), demolition, paving, and other pertinent  
37   construction operations. Specific monitoring requirements include both visual inspections and  
38   appropriate sampling (depending on site-specific conditions and construction activities) for  
39   contaminants/conditions such as pH, turbidity, and total petroleum hydrocarbons (TPH).

### 1 NPDES Permit for Storm Water Discharge

2 The Port of Tacoma is a secondary permittee under the NPDES Phase 1 Municipal Separate  
3 Storm Sewer System (MS4) permit (Phase 1 Permit). The Phase I Permit is administered by  
4 Ecology under an agreement with the federal government, and expires April 12, 2012 (with  
5 additional discussion of related state and local storm water standards provided below). The Port  
6 is responsible for reducing the discharge of pollutants from its MS4 to the maximum extent  
7 practicable (MEP), using all known, available, and reasonable methods of prevention, control,  
8 and treatment. Specific compliance requirements include development of a Stormwater  
9 Management Program to address post-construction runoff from new development and  
10 redevelopment projects, and implementation, monitoring and maintenance of appropriate BMPs.

### 11 NPDES Permit for Industrial Discharge

12 The Port and/or related private land owners currently hold one or more NPDES General  
13 Industrial Permit in association with a number of existing activities/operations such as  
14 maintenance shop-related uses. These permits require storm water sampling, and establish  
15 pollutant concentration benchmarks and action levels to compare to sampling results for  
16 applicable industrial uses. Operators/facilities covered under the permit are also required to  
17 improve associated storm water BMPs and implement treatment if sampling over time shows  
18 pollutant concentrations that exceed benchmark and/or action levels.

### 19 303(d) Threatened and Impaired Water Bodies/TMDL

20 Section 303(d) of the CWA requires states to identify and list threatened and impaired water  
21 bodies, with the intent of identifying water body segments where applicable water quality  
22 standards are not expected to be met. These listings are used to assess requirements for  
23 establishing TMDLs for individual waters and contaminants, with the goal of protecting  
24 associated beneficial uses. Outer Commencement Bay (generally areas more proximal to Puget  
25 Sound) is listed as impaired for fecal coliform and dissolved oxygen in the most current (2004)  
26 and proposed (2008) 303(d) lists. There are no current or proposed 303(d) listings for Inner  
27 Commencement Bay (generally areas more distant from Puget Sound) or the Blair and Hylebos  
28 waterways (Kindig 2008).

### 29 **Washington State Department of Ecology (Ecology)**

#### 30 Surface Water Quality Standards

31 Surface waters in the State of Washington are regulated through Chapters 173-201A of the  
32 Washington Administrative Code (WAC), with these requirements administered by Ecology  
33 through adopted State Water Quality Standards (most currently updated in 2006). Water quality  
34 criteria identified in these standards are intended to protect all beneficial uses of surface waters,  
35 including the protection of aquatic biota. The identified standards are applicable to two areas of  
36 downstream waters in Commencement Bay, designated as Outer and Inner Commencement Bay  
37 (as noted above), as well as the Blair and Hylebos waterways. Drainage from the NMCRC site is  
38 associated with the Blair and Hylebos waterways and Inner Commencement Bay, with  
39 associated designations including the following uses: Good Aquatic Life; Secondary Contact

1 Recreation; and Other Uses including Wildlife Habitat, Harvesting, Commerce/Navigation,  
2 Boating, and Aesthetics. These use designations encompass specific activities such as migration  
3 and rearing of salmonids; and migration, rearing and spawning for other fish and  
4 crustaceans/shellfish such as clams, oysters, mussels, crabs, shrimp, crayfish and scallops.  
5 Specific water quality standards applicable to Inner Commencement Bay and the Blair and  
6 Hylebos waterways include dissolved oxygen, temperature, pH, turbidity, toxic substances, and  
7 enterococci (*E. coli*) counts.

#### 8 Groundwater Standards

9 The State of Washington groundwater quality standards (WAC, Chapters 173-200-030) are  
10 intended to protect groundwater quality and existing and future beneficial uses through an  
11 antidegradation policy and the implementation of related maximum contaminant level (MCL)  
12 criteria. These regulations require that contaminants proposed for entry to groundwater shall be  
13 provided with all known, available and reasonable methods of prevention, control and treatment  
14 prior to entry.

#### 15 Hydrologic Standards

16 The Ecology Manual for Storm Water Management includes water quantity control measures to  
17 address potential modifications to drainage volumes and velocities associated with development.  
18 Because drainage from the NMCRC site via the Blair and Hylebos waterways discharges directly  
19 to Puget Sound, no requirements for flow control through efforts such as detention are applicable  
20 to the proposed action and alternatives (KJC 2008, Kindig 2008). Accordingly, hydrologic-  
21 related issues are not addressed further in this chapter or the analysis of potential impacts to  
22 water resources in Section 4.10.

#### 23 **City of Tacoma**

24 The City of Tacoma *Surface Water Management Manual* (Manual) is intended to control the  
25 quality and quantity of storm water in areas or facilities under City jurisdiction. The Manual  
26 incorporates criteria to comply with the previously described Phase I NPDES Permit, and  
27 includes construction and post-construction BMPs for a variety of land uses including  
28 commercial and industrial activities.

### 29 **3.10.2 Surface Water Resources**

#### 30 **Surface Drainage**

31 Surface drainage consists of flows or runoff derived from precipitation or other sources  
32 (e.g., landscape) irrigation) within and from the NMCRC site. Drainage can occur as both point  
33 (confined) flow in natural waterways (e.g., streams) or storm drain facilities, as well as non-point  
34 (overland) flow moving along or across areas such as paved surfaces and slopes. Average annual  
35 precipitation in the site vicinity (City of Tacoma) is approximately 39 inches (1 meter,  
36 Weather.com 2008), most of which occurs between October 1 and April 30 (defined as the “wet  
37 season” in the 2005 Ecology Stormwater Manual). The NMCRC site is essentially 100 percent  
38 developed, with much of the site encompassing impervious surfaces associated with structures  
39 and pavement (and the remaining areas consisting of minor landscaping and graded/unpaved

1 lots). Existing on-site drainage facilities include a number of storm drain inlets and conveyance  
2 facilities (e.g., pipelines), with all associated surface drainage ultimately discharging into the  
3 Blair and Hylebos waterways. Specifically, the majority (approximately 90 percent) of the site  
4 currently drains to the north-northeast through three existing outfalls (nos. 547, 550 and 554) and  
5 discharges into the Hylebos Waterway (with minor portions of the existing pier nos. 40 and 60  
6 draining directly into the Hylebos Waterway). The southeastern corner of the site (including  
7 portions of the main parking area and associated landscaping south of building no. 55) drains  
8 south-southwest through existing outfall nos. 523 and 506/13-01 and flows into the Blair  
9 Waterway (KJC 2008).

## 10 **Water Quality**

11 No known surface water quality data are available for the NMCRC site. Based on the developed  
12 nature of the site and vicinity and the general lack of existing water quality treatment facilities  
13 within the site and upstream areas (Kindig 2008), existing surface water quality at the NMCRC  
14 site is anticipated to be generally moderate to poor. Available water quality data from portions  
15 of the Blair and Hylebos waterways and Inner Commencement Bay are generally limited in  
16 extent, dated, and/or represent areas too distant from the NMCRC site to provide a useful  
17 baseline (Kindig 2008). These limitations notwithstanding, existing water quality in applicable  
18 portions of the noted local waters is characterized as generally good. This conclusion is based  
19 primarily on three sampling events conducted for conditions/contaminants including  
20 temperature, salinity, total suspended solids (TSS), and dissolved metals in 1997 and 1998.  
21 Specific samples were collected at the mouth, center and head of Blair and Hylebos waterways,  
22 as well as three locations within Inner Commencement Bay. Samples included surface water  
23 sites at all locations, as well as deep water sites in the waterway centers and the bay. The results  
24 of these sampling efforts indicated that all identified parameters were within chronic state  
25 standards for marine waters (Kindig 2008).

### 26 **3.10.3 Groundwater**

27 Groundwater resources in the project region include three principal aquifers and one associated  
28 confining deposit (or aquitard), with the following information summarized from the  
29 *Groundwater Discipline Report* prepared by GeoEngineers for the Blair-Hylebos Redevelopment  
30 Project (2008b). Groundwater within all of the noted local aquifers generally flows horizontally  
31 and vertically toward surface water bodies (including Commencement Bay and the Blair and  
32 Hylebos waterways), as outlined below. The referenced groundwater report also identifies two  
33 Critical Aquifer Recharge Areas (CARAs) as designated by the City of Tacoma, although neither  
34 of these surface recharge areas are located within or adjacent to the NMCRC site.

#### 35 **Shallow Fill Aquifer**

36 The Shallow Aquifer is located within fill deposits that were placed in association with extensive  
37 dredging operations conducted to create the Blair and Hylebos waterways (refer to Section 3.9,  
38 Geology and Geologic Hazards, for additional discussion of local fill deposits). This unconfined  
39 aquifer (i.e., not confined under pressure by impermeable strata) has highly variable  
40 characteristics and permeability, depending on the materials contained within the local fill.  
41 Water levels within the Shallow Fill Aquifer range from 3 to 10 feet (0.9 to 3 meters) below the

1 ground surface (bgs), depending on the season and (for applicable locations) local tide  
2 conditions. The sources of groundwater recharge for this aquifer include precipitation that falls  
3 directly on the overlying surface and percolates past the root zone, as well as leakage or  
4 infiltration of surface runoff from adjacent impervious surfaces.

### 5 **Upper Silt Aquitard**

6 The Upper Silt Aquitard consists of a 0.5- to 9.5-foot (0.15- to 2.9-meter) thick native silt unit  
7 consisting of organic-rich silt with varying amounts of clay, peat and sand. This unit creates a  
8 low-permeability layer that slows the vertical movement of groundwater and acts as a confining  
9 unit for the underlying (intermediate) aquifer, with the Shallow Fill Aquifer likely perched above  
10 the aquitard in some locations.

### 11 **Intermediate Aquifer**

12 The Intermediate Aquifer occurs below the Upper Silt Aquitard and extends to depths of  
13 approximately 200 feet (60 meters) bgs, with water levels varying seasonally by approximately 5  
14 feet (1.5 meters). The principal sources of recharge for this aquifer include percolation of local  
15 precipitation, as well as potential regional groundwater flow (as outlined below). The  
16 Intermediate Aquifer is hydraulically connected to the saline surface waters of Commencement  
17 Bay, providing a tidal influence on groundwater levels and producing a transitional zone of  
18 variable salinity from diffusion and tidal flushing. No known use of this aquifer has occurred for  
19 domestic (e.g., drinking water) wells.

### 20 **Deep Regional Aquifer System**

21 The Deep Regional Aquifer System is a sequence of confined aquifers and aquitards encountered  
22 at depths below 200 feet (60 meters) bgs. In general, the permeable coarse-grained geologic  
23 deposits associated with this aquifer system are water-bearing, while the low permeability fine-  
24 grained deposits form aquitards and confining units. Recharge to the Deep Regional Aquifer  
25 System is derived from groundwater inflows originating in nearby uplands, as well as from  
26 deeper deposits in the upper Puyallup River Valley. The Deep Regional Aquifer System is  
27 currently used for both domestic (drinking water) and non-domestic (e.g., industrial supply)  
28 production via a number of existing local wells.

### 29 **Groundwater Flow**

30 Groundwater flow in the Shallow Fill Aquifer and the upper portion of the Intermediate Aquifer  
31 is generally toward the nearest surface water body (e.g., the Blair and Hylebos waterways), with  
32 some local variations occurring. Groundwater seeps associated with both aquifers occur along  
33 the banks and shorelines of local surface waters, and portions of these aquifers are hydraulically  
34 connected to the saline surface waters of Commencement Bay (with associated groundwater  
35 levels locally influenced by tidal action as previously noted). Groundwater from the Shallow Fill  
36 Aquifer also moves vertically through the Upper Silt Aquitard and into the underlying  
37 Intermediate Aquifer. Groundwater flow in the Intermediate Aquifer is influenced by the  
38 generally westward movement of the regional groundwater flow system. Groundwater flow in

1 the Deep Regional Aquifer is generally to the north, with an upward component toward local  
2 surface water discharge points.

### 3 **3.10.4 Flood Hazards**

#### 4 **Tsunamis**

5 Tsunamis are earthquake- or landslide-generated waves that occur in open water bodies (with a  
6 discussion of regional and local seismicity provided in Section 3.9, Geology and Geologic  
7 Hazards). The extent and severity of tsunamis can vary with a number of factors, including the  
8 site location and elevation, fault offset, ground motion, and tidal stage.

9 In the Commencement Bay area, large shallow earthquake events, such as movement of the  
10 Tacoma or Seattle Faults, are capable of directly generating a significant tsunami. A magnitude  
11 7.3 earthquake along the Seattle Fault Zone, for example, could generate a tsunami in the  
12 Commencement Bay area with a maximum wave height of 11.5 feet (3.5 meters) that would  
13 arrive at the Port area within approximately 15 minutes of the earthquake event (with similar  
14 structural conditions and potential seismicity associated with the Tacoma Fault Zone,  
15 GeoEngineers 2008a). Significant tsunami events in the NMCRC area could also be generated  
16 by seismic or non-seismic landslides, potentially including a submarine landslide occurring on  
17 the Puyallup River delta front, a submarine landslide occurring elsewhere in Puget Sound, or a  
18 landslide from adjacent upland areas.

19 Other potential sources of tsunamis in the NMCRC area include a major seismic event along the  
20 Cascadia Subduction Zone or a deep subcrustal earthquake. Neither of these scenarios would  
21 likely produce significant tsunamis in the NMCRC area, however, due to the depth of subcrustal  
22 earthquakes, and the fact that a tsunami generated by a subduction zone earthquake would be  
23 located along the Pacific coast (and would thus be unlikely to penetrate far enough into Puget  
24 Sound to affect the Commencement Bay area).

#### 25 **Storm Drain Surcharging**

26 Based on information provided in the STR prepared for the Blair-Hylebos Terminal  
27 Redevelopment Project (KJC 2008), a number of storm drain facilities at the Port site are subject  
28 to surcharging during larger storm events (i.e., partial inundation related to exceeding the  
29 capacity of the associated facilities). With respect to the NMCRC project site, these include one  
30 or more existing outfall facilities that drain portions of the northern site area and discharge to  
31 Hylebos Waterway (KJC 2008). The STR also notes, however, that while surcharging indicates  
32 that associated facilities may not be adequate to convey flows from larger storm events, it  
33 “[d]oes not necessarily indicate flooding is a major concern.”

#### 34 **Sea Level Rise**

35 Sea level elevations in Commencement Bay (including waters adjacent to the Port of Tacoma)  
36 may be subject to increase as a result of ongoing and future global climate change, although the  
37 impacts of such potential changes are difficult to accurately predict and quantify. A recent study  
38 by Ecology and the Department of Community, Trade, and Economic Development (CTED)

1 predicts an average global sea level rise of between 4 and 40 inches between 1990 and 2100,  
2 based on projections of rising temperatures and melting glaciers (Ecology, CTED 2006).

3 Average sea level rise in the Pacific Northwest may be diminished or magnified locally through  
4 the effects of uplift and subsidence. Specifically, such effects in the Puget Sound area may be  
5 caused by glacial rebound (or uplift) following the end of the last ice age (i.e., due to the loss of  
6 weight and compression associated with large ice masses), as well as tectonic forces associated  
7 with the offshore subduction zone (refer to Section 3.9, Geology and Geologic Hazards, for  
8 additional description of local and regional geologic/tectonic environments). In addition, sea  
9 level rise in the Puget Sound area may be increased by up to 12 inches through the effects of  
10 regional atmospheric circulation patterns (University of Washington [UW] 2005).

11 An additional report by UW, in collaboration with Ecology, presents three climate change-  
12 related sea level rise scenarios categorized as very low, medium, and very high (UW 2008). The  
13 study concludes that corresponding sea level increases by the year 2100 in Puget Sound would  
14 be approximately 6 inches (15 centimeters), 13 inches (33 centimeters) and 50 inches (1.27  
15 meters).

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## 1    **3.11    UTILITIES**

2    This section describes the utility delivery system at NMCRC Tacoma, including potable  
3    water and fire protection distribution, wastewater collection and treatment, stormwater  
4    collection, electrical and natural gas, telecommunications, and solid waste systems. The  
5    utility infrastructure is still owned by Navy, unless otherwise noted.

### 6    **3.11.1    Potable Water and Fire Protection Water**

7    Potable water at NMCRC is provided by Tacoma Water, which is a division of Tacoma  
8    Public Utilities. The NMCRC site is located within the Low Service Zone of the  
9    McMillin gravity zone. The McMillin gravity zone is the largest water service zone in the  
10    Tacoma Water Service Area and comprises the areas served primarily by gravity from the  
11    McMillin Reservoir. The Low Service Zone consists mainly of the City's principal  
12    business district, Rustin Way, and the Tideflats industrial area. This zone also supplies  
13    water to the Indian Hill zone (northeast Tacoma) by pumping. The Hood Street and  
14    Portland Avenue reservoirs feed the Low Service Zone from an overflow elevation of  
15    251 feet (76 meters).

16    The 2006 Tacoma Water Comprehensive Plan Update specifically discusses the Port's  
17    industrial land use as a "center" and its implications on the water distribution system:

18        The Port of Tacoma has extensive plans for redevelopment within the Tideflats area. As a  
19        result, water mains and related appurtenances may be required to be replaced or  
20        abandoned. The current demands in the Port area are no longer for the large heavy  
21        industrial uses of the past. The Port's current focus is on the development of container  
22        loading/unloading facilities. The need for many of the old large diameter supply lines in  
23        the Tideflats area is limited. They only serve a distribution function and could, therefore,  
24        be downsized. The Port's interests also lie with the expansion of rail service within the  
25        area. Current coordination of projects such as the Lincoln Avenue grade separation is  
26        required. Funding for these projects is anticipated to come from the Port. Cooperation  
27        and coordination will be needed with Burlington Northern Santa Fe Railroad (BNSF) and  
28        Sound Transit as they expand and add track service for the Port of Tacoma and the  
29        surrounding area. Grade separations, track expansion and commuter rail are all under  
30        current consideration along rail right-of-way and may impact both distribution and supply  
31        systems where they cross.

32    The NMCRC site is served by a 32-inch (0.8-meter) water main located in the 11<sup>th</sup> Street  
33    corridor. Multiple 3-inch (7-centimeter) and 8-inch (20-centimeter) lateral lines are  
34    metered into the NMCRC and adjacent sites from the 32-inch water main.

35    Water for use in fire protection is provided to the NMCRC via 10-inch (25-centimeter)  
36    and 8-inch (20-centimeter) pipes from the water mains located along Alexander Avenue  
37    and 11<sup>th</sup> Street. Fire flow requirements are based on land use classifications. Fire flow  
38    volume is required in order to deliver the level of fire flow service as identified in  
39    Tacoma Water's approved water system plan or the level of service requirements of  
40    Pierce County for the required duration. Washington Administrative Code (WAC 246-  
41    290-230) and Pierce County Department of Health design criteria require that new or  
42    expanding water systems have capacity to provide design fire flows during peak

1 instantaneous demand conditions, namely, during the maximum-day demand. Storage  
2 facilities must provide sufficient reserve storage needed for fighting fires. Commercial  
3 and industrial uses require a fire flow of 5,000 gallons (18,927 liters) per minute for a  
4 duration of five hours.

### 5 **3.11.2 Wastewater Collection and Treatment**

6 Wastewater collection at the NMCRC site is provided by the City of Tacoma.  
7 Wastewater collected in the City is treated at one of two City treatment plants: the  
8 Central Wastewater Treatment Plant or the North End Wastewater Treatment Plant. The  
9 NMCRC site is served by a 10-inch (25-centimeter) sanitary sewer line that ties into an  
10 18-inch (0.45-meter) line located in East 11<sup>th</sup> Street. This 18-inch (0.45-meter) line  
11 gravity flows westward to a 24-inch (0.60-meter) sanitary sewer main located within the  
12 Alexander Avenue corridor.

13 Within Tacoma's city limits, a municipal sewer is considered to be available to serve any  
14 property that is within 200 feet (60 meters) of the sewer main providing it can be  
15 accessed without crossing another private property and that the sewer main does not need  
16 to be extended to serve the property.

### 17 **3.11.3 Stormwater Collection**

18 The NMCRC site's storm water system is a private system. Off-site within the Alexander  
19 Avenue and East 11th Street right-of-ways, storm water is a public system provided by  
20 the City of Tacoma. On-site storm drainage is carried via a system of catch basins along  
21 the westerly property line with the Port of Tacoma's Parcel 4. Catch basins are also found  
22 along the access corridor connecting the main portion of the site with the triangular  
23 portion of the site fronting the Hylebos Waterway. On-site drainage is carried via gravity  
24 in an easterly direction to the Hylebos Waterway, where it is discharged under the site's  
25 wharf and pier infrastructure.

26 Storm drainage is also present within the Alexander Avenue and East 11<sup>th</sup> Street  
27 corridors. These systems fall under the jurisdiction of the City of Tacoma. The Alexander  
28 Avenue system is comprised of 10-inch (0.25-meter) and 12-inch (0.30-meter) pipes  
29 connecting catch basins placed at regular intervals as required by the City of Tacoma's  
30 specifications. This system flows by gravity to the north, tying into the storm drainage  
31 system at TOTE Terminal, which discharges into the Blair Waterway. Similarly, the East  
32 11th Street system is comprised of 8-inch (20-centimeter) and 10-inch (25-centimeter)  
33 pipes flowing westerly by gravity to outfalls into the Blair Waterway.

### 34 **3.11.4 Electrical and Natural Gas Systems**

35 Electrical power is provided by Tacoma Power, a division of Tacoma Public Utilities.  
36 The NMCRC site is served with overhead transmission and distribution lines. The  
37 overhead lines follow a north/south alignment parallel to the Alexander Avenue corridor  
38 mid-way between the right-of-way and the Hylebos Waterway. Power is distributed from  
39 a substation located northeast of the Alexander Avenue and Lincoln Avenue intersection.

1 The NMCRC site is served by a 1.25-inch (3.2-centimeter) natural gas line. Gas meters  
2 are located in the East 11th Street corridor west of the intersection with Taylor Way and  
3 northeast of the main training building. Natural gas service is provided by Puget Sound  
4 Energy.

### 5 **3.11.5 Telecommunications**

6 US West provides telephone and fiber infrastructure to the NMCRC site. The  
7 telecommunications lines loop from Taylor Way to East 11th Street to Alexander Avenue  
8 within easements in the right-of-ways. The NMCRC site is also adjacent to the  
9 telecommunications fiber loop provided by Click! Network (a division of Tacoma Public  
10 Utilities). This loop also resides in easements within the Taylor Way, East 11th Street,  
11 and Alexander Avenue right-of-ways.

### 12 **3.11.6 Solid Waste**

13 Solid waste collection at the NMCRC site is provided by the City of Tacoma Public  
14 Works Department. Solid waste collected is transported to a municipal landfill.

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## 1   **3.12 PUBLIC SERVICES**

2   This section describes public services provided to NMCRC Tacoma. Fire protection,  
3   police protection, and emergency medical services are addressed.

### 4   **3.12.1 Fire Protection**

5   Fire protection services are provided to the NMCRC site by the Tacoma Fire Department  
6   (TFD). The TFD service area covers approximately 71 square miles (184 square km) and  
7   serves a population of approximately 220,000. TFD also provides service to the 2,400-  
8   acre (970-ha) Port of Tacoma industrial area. The TFD has a staff of 400 uniformed  
9   personnel and 32 civilians and has 16 active fire stations located throughout the City of  
10   Tacoma. TFD Fire Station 15 is located in close proximity to the NMCRC site,  
11   approximately 800 feet (240 meters) northeast of the intersection of 11<sup>th</sup> Street and  
12   Taylor Way. The station is approximately 300 feet (90 meters) from the nearest boundary  
13   of the NMCRC site. This station is currently used for training and storage and is also a  
14   fire engine company facility.

15   In addition, TFD operates a part-time fireboat for protection of over 40 miles (64 km) of  
16   Tacoma shoreline. The Tacoma fireboats have been used for large and small vessels in  
17   distress, medical emergencies and evacuations, search and rescue, and fire protection.  
18   Fire protection from the fireboat protects vessels and structures on the water and  
19   structures along that shoreline that are within the 350–500 foot (107–152 meter) range of  
20   the fireboat’s turrets. In addition, for disaster preparedness and response, the fireboat will  
21   serve as a floating hydrant, providing significant firefighting water to land-based fire  
22   engines.

### 23   **3.12.2 Police Protection**

24   Police protection is provided by the Tacoma Police Department (TPD). The TPD  
25   employs 381 commissioned officers and 39 civilian employees. On average,  
26   approximately 25 Officers are patrolling the City of Tacoma at any given time. The City  
27   is divided into four sectors, yielding approximately six officers per sector on patrol at any  
28   given time. The NMCRC site is located within Sector One of TPD’s service area. Sector  
29   One encompasses four distinct areas: Upper Tacoma/Hilltop, Downtown Tacoma, the  
30   Port of Tacoma and tide flats, and Northeast Tacoma and Browns Point. Core police  
31   staffing in Section One consists of a sector commander and three community liaison  
32   Officers. This staff is supported by four Tacoma Police-Business Improvement Area  
33   Officers who primarily patrol the downtown area on bicycles. The operations/patrol  
34   contingent is led by an assistant chief, captain, and six sergeants who supervise the  
35   everyday activities, tasks, and duties of fifty patrol officers who work four different  
36   shifts. Sector One is further supported by the Investigations Bureau including the Special  
37   Operations Section, the Administrative Services Bureau, civilian staff assigned to various  
38   support functions, and the Law Enforcement Support Agency Records and  
39   Communications. Sector One has two substations: the Central Substation, located at  
40   1524 Martin Luther King Boulevard, and the Northeast Substation located at 4731  
41   Norpoint Way.

1    **3.12.3 Emergency Medical Services**

2    Emergency medical services in Tacoma are provided by the Emergency Medical Services  
3    (EMS) Unit of the TFD, which has five paramedic staff medic units and four paramedic  
4    staffed engine companies. Every TFD firefighter is a certified Emergency Medical  
5    Technician, and every engine and ladder company (as well as the fireboat) carries  
6    medical supplies and equipment, including oxygen and automatic external defibrillators.  
7    The EMS Unit is headed by a Medical Director who is responsible for administering a  
8    two-tiered system of pre-hospital emergency medical care and transport. This two tier  
9    system includes Advanced Life Support Units and First Responder Engine and Ladder  
10    Companies. In addition, the EMS Unit assists in formulating plans for Emergency  
11    Medicine physicians to respond to the scene of multi-casualty incidents to assist with  
12    patient triage, treatment, and disposition. The EMS Unit transports patients to nearby  
13    facilities for medical care. Facilities in Tacoma that handle emergency medical services  
14    include two tertiary care hospital systems and two Level II trauma centers (adults and  
15    children).

### 1 **3.13 HAZARDOUS MATERIALS**

2 Hazardous materials and wastes include substances that pose a potential hazard to human  
3 health and safety or the environment due to their quantity, concentration, and/or physical  
4 and chemical properties. Hazardous materials and wastes are characterized by their  
5 ignitability, corrosiveness, reactivity, and toxicity. Hazardous materials and wastes  
6 include any material that due to its quantity, concentration, or physical, chemical, or  
7 infectious characteristics, may either cause or significantly contribute to an increase in  
8 mortality, serious irreversible illness, or incapacitating reversible illness or genetic  
9 changes or may pose a substantial threat to human health or the environment when  
10 improperly treated, stored, transported, disposed, or otherwise managed.

#### 11 **3.13.1 Hazardous Materials Management**

12 Hazardous materials used at the NMCRC site are stored in or near Buildings 5, 6, 56, and  
13 65. These materials include hydraulic oil, antifreeze, motor oil, lube oil, bearing/gear  
14 grease, rust preventative, adhesive removal, gasoline, propane and other hazardous  
15 materials associated with the vehicle maintenance activities that occur at the site.

#### 16 **3.13.2 Hazardous Waste Management**

17 NMCRC Tacoma is a small-quantity generator (producing less than 1,000 kilograms per  
18 month) of hazardous wastes (ID #WA2170090037). Hazardous wastes generated at the  
19 NMCRC site consists of used oil and antifreeze, flammable solvents, and flammable  
20 debris. Hazardous waste on the NMCRC site is accumulated in 55-gallon (208-liter)  
21 drums. These drums are then secured in export containers (CONNEXs) which are  
22 located adjacent to the southeast corner of Building 55. Hazardous waste stored in the  
23 CONNEXs is removed from the NMCRC site and disposed of by Phillips Environmental  
24 Services under a Defense Reutilization and Marketing Services contract.

25 In 1994, during the removal of an oily waste barge that was formerly docked on the  
26 NMCRC pier, hazardous waste consisting of lead-containing water was generated. In  
27 addition, waste such as sand, oily water and debris was also generated. All waste was  
28 removed from the barge and disposed of offsite.

#### 29 **3.13.3 Installation Restoration Program (IRP)**

30 Comprehensive Environmental Response, Compensation, and Liability Act of 1980  
31 (CERCLA), also known as Superfund, addresses environmental releases or threatened  
32 releases of hazardous substances to the air, surface water, groundwater, sediment, and  
33 soil. CERCLA was amended by the Superfund Amendments and Reauthorization Act of  
34 1986 (SARA). The Department of Defense (DoD) implements CERCLA through the  
35 Defense Environmental Restoration Program (DERP). The Department of Navy (DoN)  
36 Installation Restoration Program (IRP) was designed to identify and clean up past  
37 contamination from hazardous substances, pollutants, and contaminants in order to  
38 protect human health and safety, and the environment at present and former Navy  
39 installations.

- 1 CERCLA requires that all federal facilities comply with federal and state laws with  
 2 regard to the remediation process. Phases of the process are described in Table 3.13-1.

<b>Table 3.13-1 CERCLA Process</b>	
Site Discovery	A site is an area that has had or has the potential for a hazardous substance release. A single facility may contain several sites to be studied under the IRP. Occasionally, potential sites are discovered by searching through records or during construction projects.
Preliminary Assessment (PA)	This assessment identifies areas of potential contamination and evaluates each area to determine if there is a threat to human health or the environment. A PA report is developed from readily available information, such as past inventory records, aerial photographs, employee interviews, existing analytical data, and an activity visit. A PA may recommend no further action, additional work under the IRP, or a removal action.
Site Inspection	This inspection is conducted after the PA when additional information is needed to evaluate a site. Collecting and analyzing soil, sediment, surface, and groundwater samples may help to determine the need for further study. Information needed for hazard ranking also is collected. A site inspection may recommend a site for no action, further study, or an immediate removal action. The PA and site inspection are often performed concurrently.
Removal Actions	A removal action is any action that may be necessary to monitor, evaluate, prevent, minimize, or mitigate a threat or potential threat to public health or welfare or the environment. A removal action may include cleanup or removal of a hazardous materials release or hazardous material threat. Removal actions may be used to completely clean up a site so that additional remediation steps are not required.
Remedial Investigation (RI)	If necessary, investigation is performed to more fully define the nature and extent of the contamination at a site and to evaluate possible methods of cleaning up the site. During the investigation, groundwater surface water, soil, sediment, and biological samples may be collected and analyzed to determine the type and concentration of each contaminant. Samples may be collected at different areas and depths to help determine the spread of the contamination.

<b>Table 3.13-1 (cont.) CERCLA Process</b>	
Feasibility Study (FS)	If further cleanup is considered necessary, the FS identifies and evaluates a range of cleanup alternatives. As part of the study, a risk assessment is performed to quantify the level of risk posed by the site. Each alternative is evaluated for effectiveness in protecting human health and the environment, ease of implementation, and overall cost. Remedial action objectives, specific goals for protecting human health and the environment, are developed.
Proposed Plan	The Proposed Plan (PP) is a document identifying the Preferred Remedial Alternative and presents the rationale for the selection. The PP invites public participation and community involvement. The final Remedy will be selected following evaluation of the public's comments.
Cleanup Action Plan / Record of Decision (ROD)	These two documents are essentially the same. These documents define the cleanup remedy and reasoning behind the selection of a cleanup alternative. A Cleanup Action Plan/ROD is required even if the most feasible alternative is no action.
Remedial Design	If the Cleanup Action Plan/ROD selects a remedy to address site contamination, a remedial design is prepared that includes specific construction parameters or equipment specifications for the selected cleanup remedy.
Remedial Action	During the remedial action phase, the selected remedy is implemented. Remedial action work plans for long-term remediation include operation and maintenance plans, which continue until the cleanup is complete.
Long-term Monitoring	To ensure compliance with cleanup levels, federal, state, or local regulatory agencies may require long-term monitoring at the site.

1 One potential spill area has been documented on the NMCRC property. The location of  
2 this potential release is illustrated on Figure 3.13-1 and discussed below.

3 Site 1 - Spill Area. During a PA conducted in 1988, a paint or oil spill area was identified  
4 on the ground surface adjacent to Building 57 (NEESA 1988). The stained area was  
5 measured to have approximate dimensions of 20 feet (6 meters) by 50 feet (15 meters).  
6 The PA recommended that additional investigation be conducted. There are no records on  
7 file at the Washington State Department of Ecology (Ecology) indicating that an  
8 investigation or cleanup has occurred.

9 A NAVFAC NW memorandum dated April 2, 2008 indicates that the spill area is thought  
10 to have been a result of fueling operations. An underground storage tank (UST), UST 4  
11 was located adjacent to and south of the spill area. UST 4 was decommissioned and

1 removed in 1993. During the removal of UST 4, the surface-stained soil in Site 1 is  
2 suspected to have been removed too. The petroleum-stained surface was not observed  
3 during follow-on facility inspections which occurred during January 1996 and April 2003  
4 (NAVFAC 2008). Based on the information provided in the NAVFAC 2008  
5 memorandum, the Navy has determined that the cleanup is complete. Consequently, the  
6 CERCLA process is complete.

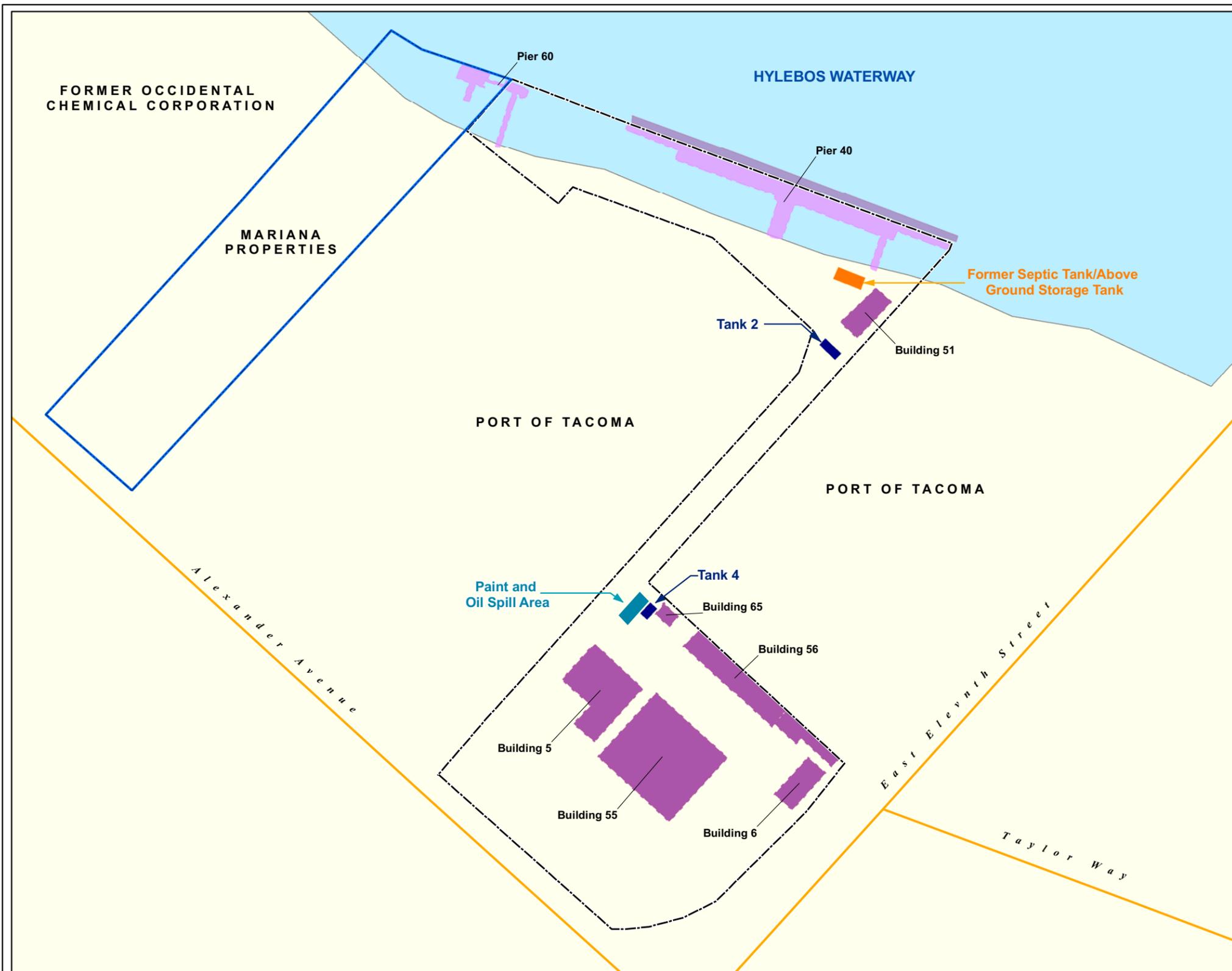
### 7 **National Priority List (NPL) Sites**

#### 8 Hylebos Waterway

9 Although the landward portion of the property is not on the NPL, the facility's two  
10 piers/docks are in the Hylebos Waterway, which is listed on the NPL as part of the  
11 Commencement Bay Superfund Site. The Hylebos Waterway contains contaminated  
12 sediments from several non-Navy industrial operations. These sediments are  
13 contaminated with organics and metals from industrial uses including chemical  
14 manufacturing plants, scrap metal recycling, log transfer facilities, and shipbuilding.

15 Commencement Bay was placed on a national interim list of 115 priority hazardous  
16 wastes sites on October 23, 1981. Initially, the Commencement Bay site was broken into  
17 four areas: deep water, near shore, tide flats/industrial, and South Tacoma Channel (an  
18 upland site). The NPL promulgated on September 8, 1983 designated the  
19 Commencement Bay Nearshore/Tidelands (CB/NT) site as a separate NPL site. The  
20 CB/NT site includes the Hylebos (waterway adjacent to the NMCRC), Sitcum, St. Paul,  
21 Middle, Wheeler-Osgood, and Thea Foss Waterways, the Puyallup River upstream to the  
22 I-5 Bridge, and adjacent land areas. Under an April 1983 agreement between USEPA and  
23 Ecology, Ecology was designated as the lead agency for an RI/FS on the nature and  
24 extent of contamination in the CB/NT site.

25 *The Commencement Bay Nearshore/Tideflats Remedial Investigation, August 1985*  
26 characterized the nature and extent of contamination at the site. *The Commencement Bay*  
27 *Nearshore/Tideflats Feasibility Study, December 1988* described feasible alternatives for  
28 sediment remedial action at the site. USEPA issued the Commencement Bay  
29 Nearshore/Tideflats ROD in September 1989. USEPA selected a remedial action for  
30 eight of the nine sediment problem areas which were identified during the Remedial  
31 Investigation/Feasibility Study. These problem areas are: 1) Mouth of Hylebos  
32 Waterway, 2) Head of Hylebos Waterway, 3) Sitcum Waterway, 4) St. Paul Waterway,  
33 5) Middle Waterway, 6) Head of Thea Foss Waterway, 7) Mouth of Thea Foss  
34 Waterway, and 8) Wheeler-Osgood Waterway. The submerged lands located adjacent to  
35 the NMCRC are within Segment 5 of the "Mouth of the Hylebos" remediation area. The  
36 most severely contaminated sediments at Hylebos Waterway had high concentrations of  
37 several chlorinated organic compounds (including polychlorinated biphenyls [PCBs],  
38 pesticides, hexachlorobenzene and hexachlorobutadiene), high and low molecular weight  
39 polycyclic aromatic hydrocarbons (PAHs), lead, copper, zinc, mercury, and arsenic. In  
40 2003, dredging was completed for Segment 5 of the Mouth of Hylebos (USEPA 2004).  
41 All dredging in Hylebos Waterway is complete with the exception of the Occidental Site  
42 (discussed below).



<b>TITLE</b>	
<b>RELEASE AREAS</b> Naval & Marine Corps Reserve Center Tacoma, Washington	
<b>LEGEND</b>	
	Site 1: Paint and Oil Spill Area
	Underground Storage Tank
	Former Septic Tank and Above Ground Storage Tank
<b>Base Map</b>	
	Buildings
	Navy Property Boundary
	Mariana Property Boundary
	Local Streets
<b>SITE LOCATION MAP</b>	
<b>NOTES &amp; SOURCES</b>	
Coordinate System: UTM Zone 10 NAD 83, meter Data Sources: N&MCRTC Data UST Removal Title Drawing (Dames & Moore)	

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**Release Areas**

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 3.13-1

## 1 Navy Bank Investigation

2 In 2000, a characterization study was conducted of the surficial sediments (0 to  
3 10 centimeters) location in the bank and side-slope areas between the land and the in-  
4 shore edge of Pier 40, also referred to as the Navy Bank Area (Figure 3.13-2) (Anchor  
5 2001). The study was conducted in two phases. Phase I involved collection of eight  
6 sediment composites on February 16 and 17, 2000. These samples were analyzed for  
7 physical and chemical characteristics. Phase II collection was accomplished on June 5,  
8 2000. This second phase of testing was necessary to confirm Phase I results and included  
9 chemistry and toxicity tests.

10 The eight Phase I surficial sediment samples were analyzed for physical (e.g., grain size,  
11 organic carbon content) and chemical characteristics. The chemicals analyzed for were  
12 heavy metals, PAHs, volatile organic compounds (VOCs [e.g. benzene]) chlorinated  
13 pesticides (e.g., DDT), and PCBs. The results of these analyses were compared to  
14 appropriate USEPA ROD and Explanation of Significant Differences (ESD) sediment  
15 quality objective (i.e. benchmarks). Based upon this comparison, four of the eight  
16 sediment composites exceeded Sample Quality Objective (SQO) chemical criteria. The  
17 study found the following chemicals marginally exceeded SQOs in one or more of the  
18 composites tested:

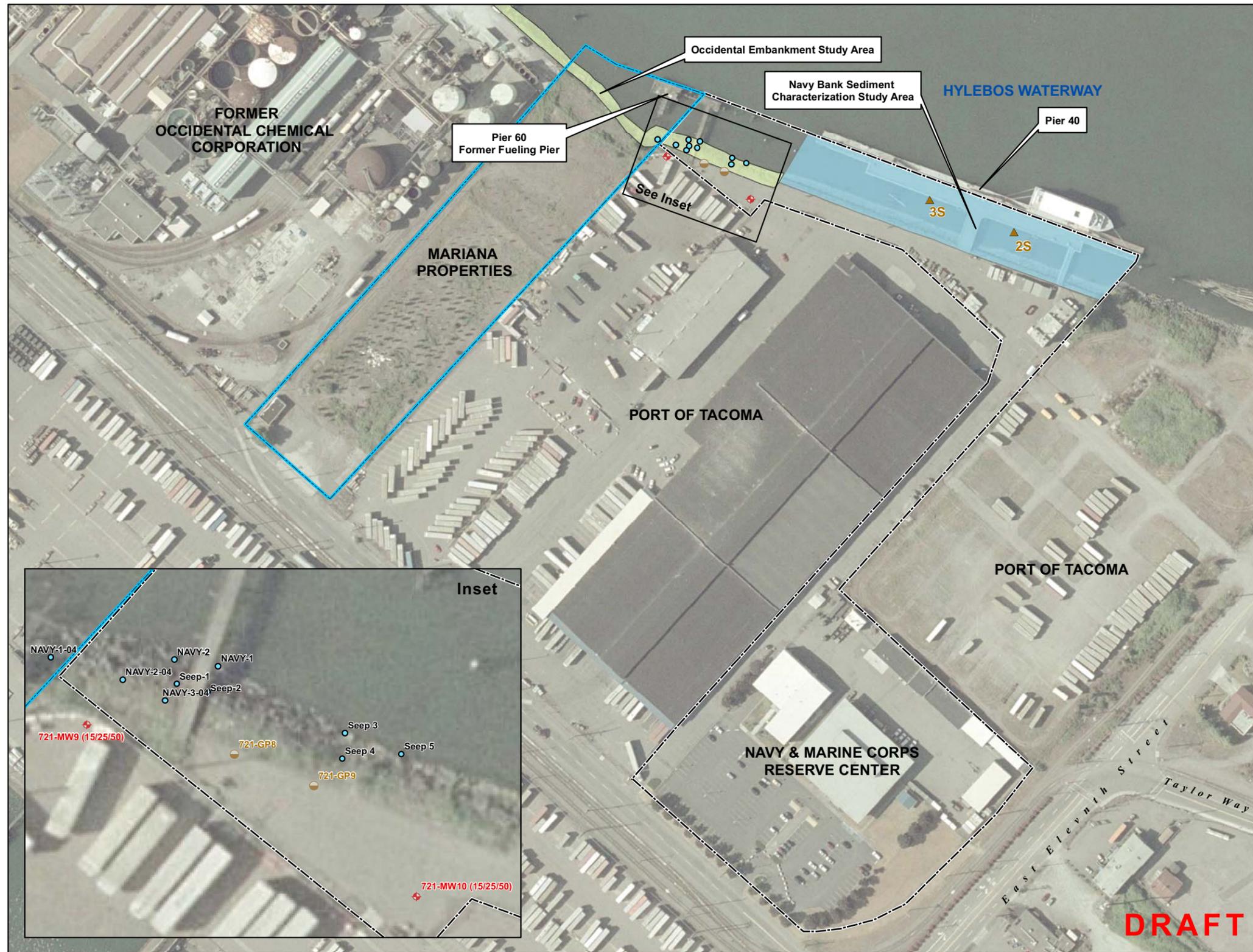
- 19 • copper & nickel;
- 20 • several PAHs;
- 21 • DDD (a derivative of DDT); and
- 22 • Hexachlorobutadine.

23 These four areas were subsequently sampled during Phase 2 of the study. Phase 2  
24 involved conducting confirmatory chemical analyses as well as toxicity tests. The toxicity  
25 tests used amphipods, bivalve larvae, and worms as indicators of chemical contamination.

26 Results of the two-phased sediment characterization study indicates that based upon  
27 chemical and toxicity testing, all intertidal and a portion of subtidal sediments within the  
28 Navy Bank area comply with SQO criteria. The report recommended that no remedial  
29 action be taken. This recommendation was made based upon the following factors:

- 30 • minor biological effects were observed in the bivalve larvae test;
- 31 • the maximum concentration of chemical contaminants (primarily PAHs) were less  
32 than twice their corresponding SQO;
- 33 • new sources of contaminants to the Navy Bank area are relatively low (well below  
34 SQO chemical criteria); and
- 35 • the Navy Bank area experiences a net sediment rate of greater than 1 centimeter per  
36 year (HCC 1999) which would effectively attenuate the existing chemical levels at  
37 the site.

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**TITLE**

**REMEDIAL INVESTIGATION AREAS**

Naval & Marine Corps Reserve Center  
Tacoma, Washington

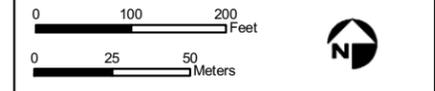
- LEGEND**
- Embankment Seep Location (Approximate)
  - ▲ Monitored Natural Recovery Sediment Location (Approximate)
  - ⊕ Monitoring Well Location (Approximate)
  - Soil Boring Location (Approximate)
  - ▭ Embankment Study Area
  - ▭ Navy Bank Study Area
  - Mariana Property Boundary
  - - - Navy Property Boundary



**NOTES & SOURCES**

Coordinate System: UTM Zone 10  
NAD 83, meter

Data Sources: N&MCRTC Data  
WA Site Plan ( 23 September 1999)  
WA General Development Map Existing & Planned Pre-M Day (18 September 2002)  
Topographic Map with Property Lines (June 1984)



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**Remedial Investigation Areas**

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 3.13-2

1 The sediment characterization report concluded that any chemical concentrations beneath  
2 the Navy Bank site would be predicted to decline to well below the SQO criteria within a  
3 10-year natural recovery period. The conclusion is consistent with the USEPA's  
4 Commencement Bay ROD and ESD that calls for monitored natural recovery for  
5 marginally contaminated areas expected to recover naturally to the SQOs within 10 years  
6 after a sediment remedial action. Furthermore, the report concluded that natural recovery  
7 monitoring was recommended for chemicals exceeding SQOs (PAHs and the chlorinated  
8 pesticide DDD).

9 The cleanup objective for the remedial action, as described in Section 10 of the 1989  
10 ROD, states that "the selected remedy is to achieve acceptable sediment quality in a  
11 reasonable time frame." "Acceptable sediment quality" is defined as "the absence of  
12 acute or chronic adverse effects on biological resources or significant human health  
13 risks." The ROD designated biological test requirements and associated SQOs to attain  
14 the cleanup objective for the CB/NT site. A remedy consisting of monitored natural  
15 recovery was ultimately selected for the Navy Bank area (Anchor 2004).

16 Monitoring of the natural recovery of the Navy Bank Area is described in *Operations,*  
17 *Monitoring, and Maintenance Plan (OMMP)*, Mouth of the Hylebos Waterway  
18 (Segments 3, 4, and 5), June 2004 (Anchor 2004). Two sites, identified as 2S and 3S,  
19 were designated for monitoring (Figure 3.13-2). The natural recovery monitoring would  
20 include analysis of surficial sediment samples (0-10 centimeters) for the contaminants  
21 that were found to exceed SQOs in the most recent study. For the Navy Bank Area  
22 sediments, this includes several PAHs as well as DDD. In the event that any SQOs are  
23 exceeded in the top 10 centimeters of the waterway bottom, confirmatory biological  
24 testing might be conducted (if the USEPA concurs). If the monitoring program indicates  
25 that the selected remedy, natural recovery, is not occurring within accepted 10-year  
26 timeframe, the selected remedy will be reevaluated. To date, no natural recovery  
27 monitoring has been completed.

### 28 **Investigations on Adjacent Properties**

29 The Occidental Chemical Corporation (OCC) property located northwest of the NMCRC  
30 at 605 and 709 Alexander Avenue (Figure 3.13-2) is subject to an Administrative Order  
31 on Consent (AOC) (USEPA Docket No. 10-07-0011 CERCLA) that is jointly  
32 administered by Ecology and the USEPA. The AOC required OCC to define the extent of  
33 soil, sediment and groundwater contamination associated with releases from the OCC  
34 property, and to develop a cleanup plan for Ecology and USEPA approval.

35 Between 1947 and 1973, OCC operated a chlorinated solvents plant. Site contamination  
36 predominantly consists of VOCs and elevated pH in the groundwater. The primary VOCs  
37 are tetrachloroethylene (PCE), trichloroethylene (TCE), and breakdown products  
38 including cis-1,2-dichloroethylene (cis-1,2-DCE) and vinyl chloride. A pump and treat  
39 system has operated at the site since 1996, extracting contaminated groundwater, treating  
40 it, reinjecting a portion of the treated water to the subsurface, and discharging the  
41 remaining treated water to the Hylebos Waterway.

1 OCC has completed the field investigations required under the AOC. Study results of the  
2 recent investigations as well as historical studies are contained in the document titled  
3 *Draft Site Characterization Report, Groundwater and Sediment Remediation, Occidental*  
4 *Chemical Corporation, Tacoma, Washington, July 2008* (CRA 2008). The purpose of the  
5 site characterization was to evaluate the data collected from all investigations at the site  
6 and to adequately characterize the contamination of soil, sediment, and groundwater  
7 underlying the site; evaluate environmental risks posed; and allow development and  
8 evaluation of remedial design alternatives to address those risks. During the Site  
9 Characterization, soil, groundwater, sediment, and seep samples were collected on the  
10 OCC property as well as the 721 Alexander Avenue property and the NMCRC property.

11 Results from the Site Characterization indicate that the soil and groundwater in the  
12 northwest corner of NMCRC are impacted with VOCs and semi-volatile organic  
13 compounds (SVOCs). These VOCs and SVOCs were also detected in soil and  
14 groundwater at the adjacent Port of Tacoma property located at 721 Alexander Avenue  
15 (northwest of the site). The Navy owns the northern portion of the 721 Alexander Avenue  
16 property (Hylebos waterfront and fuel pier), while the southern portion is owned by the  
17 Port of Tacoma and serves as a material storage yard and warehouse. According to the  
18 report titled *Hylebos Waterway Summary of Analytical Results for Soil and Groundwater*  
19 *Samples* (BBL, Inc. 2004), the VOCs and SVOCs detected in soil and groundwater at the  
20 721 Alexander Avenue property are consistent with a groundwater plume migrating from  
21 the adjacent upgradient property that was owned and operated by OCC.

22 Groundwater Investigation. The OCC monitoring program includes analysis of  
23 groundwater samples collected from a well located on NMCRC property. The location of  
24 the well (721-MW10) and a well located immediately adjacent to the property line  
25 (721-MW9) are depicted on Figure 3.13-2. The well was set up to allow collection of  
26 groundwater samples at depths of 15, 25, and 50 feet (4.6, 7.6, and 15.2 meters) below  
27 ground surface.

28 The OCC site investigation indicated that a relatively small plume of benzene  
29 contamination (a VOC) is present on the eastern portion of the NMCRC property at 721  
30 Alexander Avenue. The depth of the benzene impact ranges from 15 to 50 feet (4.6 to  
31 15.2 meters) below ground surface (CRA 2008). Benzene is commonly associated with  
32 gasoline fuel. During 1995, petroleum free product (gasoline and diesel) was observed  
33 floating on the water table in two monitoring wells located on the 721 Alexander property  
34 (AGI Technology 1995). The wells with free product were located within 500 feet  
35 northwest of the property, along Alexander Avenue. A fuel tank farm operated on the  
36 northwestern half of this adjacent property between 1936 and 1980, and the tanks  
37 previously contained diesel, fuel oil, and aviation fuel. The extent of the petroleum  
38 release on this adjacent property is not known. On October 20, 2008, Ecology's files did  
39 not contain documentation associated indicating that the petroleum free product had been  
40 remediated and/or the extent of the petroleum contamination in the soil and groundwater  
41 was delineated.

42 Embankment Investigation. The Embankment site includes the area of the OCC site  
43 along the Hylebos Waterway extending from the northwest boundary of the property

1 located at 605 Alexander Avenue owned by Mariana Properties, to the southeast  
2 boundary of the property located at 721 Alexander Avenue owned by the Navy, and from  
3 approximately 0 feet (0 meters) above the mean lower low water (MLLW) line to the top  
4 of the bank at approximately 18 feet (5.5 meters) above MLLW. Sediment, soil, and seep  
5 samples were collected in the NMCRC embankment areas during various phases of the  
6 OCC site investigation. The samples were analyzed for VOCs, SVOCs, metals,  
7 pesticides, general chemistry, and pH. Collection locations are depicted in Figure 3.13-2.

8 The Embankment site is characterized primarily by chemical contamination in sediment,  
9 soil, and debris associated with fill placed along the embankment. The maximum vertical  
10 extent of the chemical impacts in soil and debris is approximately 23 feet (7 meters)  
11 below ground surface (approximately 5 feet [1.5 meters] below MLLW. The impacted  
12 sediment (within 3 feet [1 meter] of the mudline) extends from an approximate elevation  
13 of 14 feet (4.3 meters above) MLLW to the bottom of the embankment slope at 40 feet  
14 [12.2 meters] below MLLW). Discharges of impacted groundwater to the waterway have  
15 occurred along the slope.

16 Embankment sediments adjacent to the NMCRC site were found to have elevated levels  
17 (above federal or state criteria) of SVOCs (hexachlorobenzene and hexachlorobutadiene)  
18 and heavy metals (arsenic, copper, lead, mercury, nickel, and zinc) (CRA 2008). Seep  
19 samples were found to exceed criteria levels for site contaminants of concern throughout  
20 the embankment area including in the area at the NMCRC site. The majority of the  
21 exceedances were found to be for metals and pH. The study report noted that metal  
22 concentration observed in seep samples may be biased high due to the interferences  
23 associated with the site groundwater matrix.

#### 24 **3.13.4 Asbestos**

25 Asbestos abatement is regulated under the Clean Air Act and the Toxic Substances  
26 Control Act (TSCA) Title II, Asbestos Hazard and Emergency Response under the  
27 Asbestos Hazard and Emergency Response Act (AHERA) enacted by Congress in 1986.  
28 Additionally, it is a potential worker safety hazard under the authority of Washington  
29 Industrial Safety and Health Act (WISHA). These regulations limit emissions of asbestos  
30 from asbestos-related manufacturing, demolition, or construction activities and require  
31 notice to federal and local government agencies prior to beginning renovation or  
32 demolition that could disturb asbestos.

33 In March 1992, a sampling survey for asbestos-containing material (ACM) was  
34 performed at the NMCRC property. Samples were collected from Buildings 51, 55, 56,  
35 and 57, which were constructed prior to 1986. Sampling of insulation and fittings, ceiling  
36 tile, plaster, vinyl floor tiles, floor tile mastic, sheet vinyl flooring, exterior surface  
37 coating, base cover mastic, roofing, and sprayed on ceiling textures determined that there  
38 were ACM in Buildings 55 and 56.

39 In 1994, the Navy contracted with N. W. Construction General Contracting, Inc., to  
40 remove the ACM. The administration building and most of the shop facilities were  
41 reported to have been remediated (URS 1996); however, no ACM inventory or  
42 documentation of the ACM removal at the NMCRC site is available for review.

### 1 **3.13.5 Polychlorinated Biphenyls**

2 PCBs are regulated under the TSCA Title I, which includes provisions for testing  
3 chemical substances and mixtures, managing imminent hazards, and reporting and  
4 retaining information. In accordance with Title I, the owner or operator of facilities that  
5 use or store at least 99.2 pounds (45 kilograms) of PCBs in containers or transformers  
6 must maintain an inventory of the disposition of PCBs and PCB items.

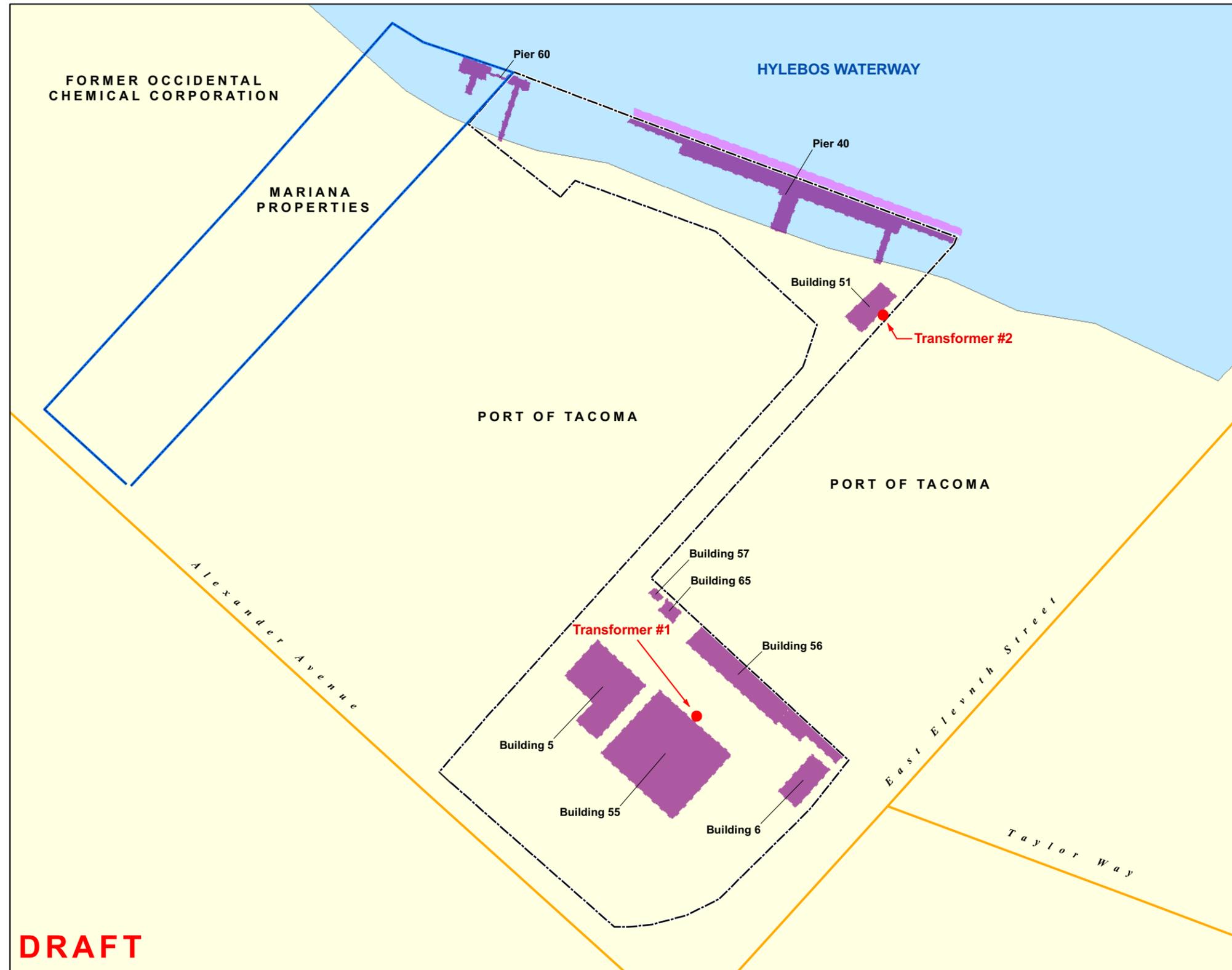
7 The NMCRC facility buildings contain fluorescent light fixtures, which may contain  
8 PCBs. In addition, two transformers are present on the facility (Figure 3.13-3). One of the  
9 transformers is located adjacent to and east of Building 51 (boiler house). One  
10 transformer is located along the northwestern perimeter of Building 55. The exterior  
11 panels of this transformer are labeled “no PCBs.” NAVFAC NW personnel from the  
12 public works department reported that both transformers are air cooled and do not contain  
13 oil (Day 2008). Consequently, neither transformer should contain PCBs.

### 14 **3.13.6 Storage Tanks**

#### 15 **Underground Storage Tanks**

16 Six USTs were decommissioned at NMCRC Tacoma during October 1993. No USTs are  
17 currently present on the NMCRC facility. A 1992 Basis of Design Report for the closure  
18 of the facility’s USTs indicates that four of the USTs (Tanks T-1x, T-1, T-2, and T-3)  
19 were associated with the facility’s boiler in Building 51 and contained fuel oil; one of the  
20 tanks, T-4, was associated with the administration building boiler and contained diesel;  
21 and one UST, T-5, was associated with the facility’s heating recirculation pumps and  
22 contained heating oil (Dames & Moore 1992). The same USTs were also listed in a  
23 Tacoma Pierce County Health Department (TPCHD) UST Removal Permit dated August  
24 1993, however, all of the tanks were listed as containing fuel oil. Descriptions of the  
25 tanks are listed on Table 3.13-2. Four USTs were located southwest of Building 51, one  
26 UST was located northwest of Building 57, and one UST was located northwest of  
27 Building 55.

28 The *UST Decommissioning Site Assessment Report* dated November 1993 and prepared  
29 by NW Struction (*sic*) indicated that petroleum-impacted soil was observed in two UST  
30 excavations: T-2 (near Building 51) and T-4 (near Building 57). Consequently, the  
31 excavations near Building 51 and Building 57 were enlarged to remove the petroleum-  
32 impacted soil. Two soil samples were collected from the bottom of each excavation and  
33 analyzed for petroleum compounds to verify that the petroleum-impacted soil had been  
34 removed. Upon confirmation that the soil in the excavation area was below Ecology  
35 cleanup levels for total petroleum hydrocarbons, the excavations were backfilled with  
36 clean soil and the contaminated soil removed from the excavations was disposed of  
37 offsite.



**TITLE**

**TRANSFORMER LOCATIONS**

Naval & Marine Corps  
Reserve Center  
Tacoma, Washington

**LEGEND**

- Transformer

**Base Map**

- Buildings
- Floating Dock
- - - Navy Property Boundary
- Mariana Property Boundary
- Local Streets



**NOTES & SOURCES**

Coordinate System: UTM Zone 10  
NAD 83, meter  
Data Sources: N&MCRCTC Data

**Internal Working Document -  
Not for Release under FOIA**

0 100 200 Feet  
0 25 50 Meters

**DRAFT**

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**Transformer Locations**

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 3.13-3

<b>Table 3.13-2 Former Underground Storage Tanks at NMCRC</b>			
<b>Tank ID</b>	<b>Location</b>	<b>Size (gallons)</b>	<b>Petroleum Contamination Observed</b>
1	Building 51	12,000	No
1X	Building 51	300	No
2	Building 51	12,000	Yes
3	Building 51	24,000	No
4	Building 127/ Building 57*	4,000	Yes
5	Building 55	5,000	No

Source: *UST Decommissioning Site Assessment Report*, November 1993

\*Building 127 has been re-named to Building 57

1 Groundwater was encountered in the T-2 excavation. Following removal of petroleum-  
2 impacted soil, a groundwater sample was collected from the excavation area, and diesel  
3 hydrocarbons were not detected in this groundwater sample.

4 The UST closure was reported to Ecology and the TPCHD. Although the TPCHD has  
5 reported that the release is “closed,” Ecology does not appear to have closed their file,  
6 which is customary for a site conducting an independent cleanup.

### 7 **Aboveground Storage Tanks**

8 Two ASTs were removed from the facility in December 1996 (Severson 1997). There are  
9 no ASTs currently located at the NMCRC site. The ASTs were associated with an  
10 oil/water separator system used to treat oily bilge water from marine vessels (URS 1996).  
11 Bilge water was initially pumped into a 1,500 to 2,000 gallon AST and then pumped into  
12 the oil/water separator system. Separated oil was stored in a 700-gallon AST and  
13 disposed of offsite by a contractor.

14 During the removal of the ASTs in December 1996, soil impacted by oil-range  
15 hydrocarbons was observed below the ASTs. The petroleum contaminated soil was  
16 removed, and approximately 70 tons of petroleum contaminated soil was disposed of  
17 offsite. Soil samples collected in the excavation area after the removal of the petroleum  
18 contaminated soil indicate that petroleum hydrocarbons were not present in  
19 concentrations above Ecology’s cleanup criteria (Severson Construction 1997). The  
20 maximum concentration of oil-range hydrocarbons in the soil remaining in the excavation

1 area was 130 milligram per kilogram at a depth of 4.5 feet (1.4 meters). No groundwater  
2 samples were collected.

3 It is unknown if the AST closure was reported to Ecology. On October 20, 2008,  
4 Ecology's files did not contain documentation associated with the ASTs.

5 Petroleum-contaminated soil above the cleanup levels was removed from the former AST  
6 area; however, residual petroleum contamination remains. Although the confirmation soil  
7 samples collected from the AST excavation did not include analyses of metals, the  
8 excavated soil that was disposed of offsite was analyzed for eight metals using the total  
9 characteristic leachate procedure. These results indicate that with the exception of  
10 barium, leachable metals were not detected in the soil, and therefore it is suspected that  
11 elevated concentrations of metals such as lead and arsenic are not present in the soil.

## 12 **Septic Tank**

13 The NMCRC site was connected to the City of Tacoma publicly owned treatment works  
14 in 1974. Prior to the 1974 connection, effluent from the oil-water separator located  
15 adjacent to Building 51 was discharged to a septic tank. This effluent was chlorinated and  
16 discharged to the Hylebos Waterway. No information is available on the septic tank  
17 closure.

### 18 **3.13.7 Lead-Based Paint**

19 Lead-based paint is regulated under TSCA Title IV, Lead Exposure Reduction. The  
20 purpose of this legislation is to reduce environmental lead contamination and prevent  
21 adverse health effects as a result of lead exposure, particularly in children. Provisions  
22 include identifying lead-based paint hazards, defining levels of lead allowed in various  
23 products (including paint and toys), and establishing state programs for the monitoring  
24 and abatement of lead exposure levels, including training and certification for lead  
25 abatement workers.

26

27 There is no residential real property (ex., housing built prior to 1978 or child-occupied  
28 facilities), therefore, no further evaluation is required. There are no LBP surveys. All  
29 buildings built prior to 1978 are assumed to contain LBP. Buildings 51, 55, 56, and 57  
30 were constructed prior to 1978.

### 31 **3.13.8 Environmental Protection of Children from Environmental Health Risks and** 32 **Safety Risks**

33 On April 17, 1997 Executive Order 13045, Protection of Children from Environmental  
34 Health Risks and Safety Risks, was signed by President Clinton. The policy of the  
35 Executive Order states that:

36 A growing body of scientific knowledge demonstrates that children may suffer  
37 disproportionately from environmental health risks and safety risks. These risks arise  
because: children's neurological, immunological, digestive, and other bodily systems  
are still developing; children eat more food, drink more fluids, and breathe more air in

1 proportion to their body weights than adults; children's size and weight may diminish  
2 their protection from standard safety features; and children's behavior patterns may  
3 make them more susceptible to accidents because they are less able to protect  
4 themselves. Therefore, to the extent permitted by law and appropriate, and consistent  
5 with the agency's mission, each federal agency:

- 6 • shall make it a high priority to identify and assess environmental health risks and  
7 safety risks that may disproportionately affect children; and
- 8 • ensure that its policies, programs, activities, and standards address  
9 disproportionate risks to children that result from environmental health risks or  
10 safety risks.

11 Under the definitions provided in Executive Order 13045, covered regulatory actions  
12 included those that may be "economically significant" (under Executive Order 12866)  
13 and "concern an environmental health risk or safety risk that an agency has reason to  
14 believe may disproportionately affect children." Further, Executive Order 13045  
15 defines "environmental health risks and safety risks" [to] "mean risks to health and  
16 safety that are attributable to products or substances that the child is likely to come in  
17 contact with or ingest (such as the air we breathe, the food we eat, the water we drink  
18 or use for recreation, the soil we live on, and the products we use or are exposed to)."

19 All buildings located on the NMCRC site that were constructed prior to 1978 that have  
20 not been surveyed for lead-based paint are assumed to contain lead-based paint until a  
21 screening or sampling analysis determines that none is present. Buildings 51, 55, 56, and  
22 57 were constructed prior to 1978 and are therefore, assumed to contain lead-based paint.

### 23 **3.13.8 Radon**

24 A preliminary radon screening was performed at the NMCRC site in 1999; however, the  
25 locations and results of the radon screening are unknown. Using radon results from a  
26 Washington State Department of Health statewide radon study, it was determined that  
27 radon levels in western Washington are typically low, less than 4 picoCuries per Liter of  
28 air (Washington State Department of Health 1994).

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## CHAPTER 4.0 ENVIRONMENTAL CONSEQUENCES

1 Chapter 4 of this EA addresses the environmental consequences of the proposed disposal and  
2 redevelopment of NMCRC with respect to 13 environmental issue areas. Each issue is addressed  
3 in its own section, numbered as follows:

- 4 4.1 Land Use
- 5 4.2 Visual Resources
- 6 4.3 Socioeconomics
- 7 4.4 Cultural Resources
- 8 4.5 Transportation
- 9 4.6 Air Quality
- 10 4.7 Noise
- 11 4.8 Biological Resources
- 12 4.9 Geology and Soils
- 13 4.10 Water Resources
- 14 4.11 Utilities
- 15 4.12 Public Services
- 16 4.13 Hazardous Materials and Waste

17 The proposed action and each alternative are analyzed from the viewpoint of these 13  
18 environmental issues. Navy disposal is assumed as part of each reuse alternative. Each  
19 discussion is organized as follows:

20 Proposed Action—This subsection addresses the environmental consequences of the LRA’s  
21 Redevelopment Plan for the NMCRC site. This would result in the demolition of existing on-site  
22 structures at the NMCRC site. The NMCRC site would then be re-graded (along with the rest of  
23 the port redevelopment project area) and placement of fill would occur to raise the on-site  
24 elevation. Then, the NMCRC site would be developed with the following:

- 25 • A portion of the YTTI inter-modal rail yard;
- 26 • YTTI main gate;
- 27 • Road serving the north end of the Blair Peninsula; and
- 28 • A portion of the new vessel maintenance building for TOTE.

29 Alternative 1—This subsection analyzes the environmental consequences of a reuse alternative  
30 for the NMCRC site consistent with the probable land use and levels of activity consistent with  
31 existing zoning should the Port not move forward with its master redevelopment program for the  
32 Blair Peninsula, including the development of two new cargo and container terminals, retention  
33 of the TOTE operations at its current terminal, additional auto/break bulk storage and  
34 improvements at the Washington United Terminal.

- 1 No Action Alternative—This subsection addresses the environmental consequences of retaining  
2 NMCRC in caretaker status in Navy ownership.
- 3 Measures that can be taken to reduce impacts to a level below significant are suggested for each  
4 alternative, as appropriate. As reuse would occur after the property is transferred from federal  
5 ownership, any mitigation measures identified for impacts associated with reuse are the  
6 responsibility of the acquiring entity, under the direction of federal, state, and local agencies with  
7 regulatory authority over and responsibility for such resources. Mitigation for impacts associated  
8 with reuse is not the responsibility of the Navy. The impacts presented in this chapter have been  
9 evaluated against the baseline environmental conditions presented in Chapter 3.

## 1    **4.1    LAND USE**

2    This section describes potential land use impacts associated with the proposed action and  
3    alternatives, including the compatibility of the proposed action and alternatives with existing  
4    land uses on the site, compatibility with existing uses adjacent to the site, and consistency with  
5    the City of Tacoma plans and zoning and Port of Tacoma plans. Factors considered in  
6    determining whether the proposed action and alternatives would have a significant land use  
7    impact included the extent or degree to which implementation of the proposed action and  
8    alternatives would:

- 9           1. Result in inconsistencies or non-attainment of applicable plans of the City of Tacoma and  
10           Port of Tacoma; or
- 11           2. Result in proposed uses that are incompatible with existing or adjacent land uses.

### 12    **4.1.1 Proposed Action**

#### 13    **Land Use Policy**

14    The City of Tacoma Comprehensive Plan's Generalized Land Use Plan designates the NMCRC  
15    site as a Manufacturing/Industrial Center with high land use intensity. The NMCRC site is  
16    zoned Port Maritime Industrial (PMI) and is located within the Shoreline District – Port  
17    Industrial (S-10) overlay zone.

18    The proposed action would result in the following development of the NMCRC:

- 19           • A portion of the YTTI inter-modal rail yard;
- 20           • YTTI main gate;
- 21           • Road serving the north end of the Blair Peninsula; and
- 22           • A portion of the new vessel maintenance area for TOTE.

23    As discussed in Section 3.1, the Manufacturing/Industrial Center designation are employment  
24    concentrations of local and/or regional importance which are well served by major transportation  
25    facilities and are priority locations for future growth and infrastructure investment.  
26    Manufacturing/Industrial Centers High Intensity industrial areas, consisting of heavy  
27    manufacturing, processing, refining, shipping operations, general warehousing, and rail  
28    distribution yards provide goods for local, regional, national, and international markets. These  
29    areas often generate large amounts of automobile, truck, rail, or waterborne traffic and require  
30    direct access to major transportation routes. The redevelopment of the site with portions of the  
31    YTTI inter-model yard, the YTTI main gate, a roadway, and portions of the TOTE maintenance  
32    building would be consistent with the existing Land Use Plan designation of  
33    Manufacturing/Industrial Center with high land use intensity. The redevelopment of the site  
34    would be a continuation of the Port activities currently occurring on adjacent parcels, and would  
35    serve to improve Port development of the Blair Peninsula as part of an overall plan to meet

1 forecasted container and cargo growth, modernize existing facilities and utilities, and improve  
2 the roadway and railway infrastructure that serves the site.

3 The NMCRC site is zoned PMI and is located within the Shoreline District – Port Industrial  
4 (S-10) overlay zone. The S-10 designation is intended to allow the continued development of the  
5 Port Industrial Area, with an increase in the intensity of development and a greater emphasis on  
6 terminal facilities within the City. The PMI designation is intended to allow all industrial uses  
7 and uses that are not permitted in other districts, with Port facilities and activities comprising the  
8 majority of uses in the PMI district. Development of the NMCRC site as described for the  
9 proposed action would be consistent with both the S-10 overlay zone designation and the PMI  
10 zoning. Development of the NMCRC site would also provide improved roadway and railway  
11 infrastructure to the Peninsula and would contribute to improved terminal operations on the  
12 Peninsula. As implementation of the proposed action would be consistent with the Land Use  
13 Designation identified in the City of Tacoma Comprehensive Plan, and would be consistent with  
14 zoning for the site and the City’s long-term vision for the area, impacts would not be significant  
15 and no related mitigation is necessary or proposed.

#### 16 **Land Use Compatibility**

17 Land uses adjacent to the NMCRC site consists of similar maritime uses. Property directly  
18 adjacent to the NMCRC site is owned by the Port. The waterway immediately surrounding the  
19 NMCRC site is also owned by the Port. Activities occurring on adjacent properties include  
20 American Fast Freight, the TOTE terminal, construction staging for the rehabilitation of the  
21 Hylebos Bridge, and commercial and industrial businesses. Implementation of the proposed  
22 action would result in the construction of additional Port-related activities, including a portion of  
23 the YTTI inter-modal rail yard, the YTTI main gate, a roadway, and a portion of the new vessel  
24 maintenance building for TOTE. The proposed action would result in the demolition of existing  
25 structures on the site and the construction of new buildings and a roadway. Given the existing  
26 adjacent land uses and the overall vision for development of the Blair Peninsula, the proposed  
27 action would not result in any land use incompatibilities with adjacent or nearby land uses. The  
28 area is currently characterized by Port-related activities, which are considered high intensity  
29 industrial uses. The proposed action would result in additional construction of uses consistent  
30 and compatible with surrounding land uses. For this reason, the reuse of the NMCRC site as  
31 proposed would not result in a significant land use impact associated with land use compatibility.  
32 No mitigation is proposed.

#### 33 **4.1.2 Alternative 1**

#### 34 **Land Use Policy**

35 Alternative 1 would result in the reuse of the NMCRC property consistent with the probable land  
36 use and levels of activity consistent with existing zoning should the Port not move forward with  
37 its master redevelopment program for the Blair Peninsula. Uses would include the development  
38 of two new cargo and container terminals, retention of the TOTE operations at its current  
39 terminal, additional auto/break bulk storage and improvements at the Washington United  
40 Terminal. Uses proposed for the NMCRC site under Alternative 1 would be consistent with the  
41 existing Comprehensive Plan Land Use designation of Manufacturing/Industrial Centers High

1 Intensity. Similarly, the proposed uses associated with Alternative 1 would be consistent both  
2 with the S-10 overlay zone, the PMI zoning, and land use policies for the area, as it would serve  
3 Port-related activities. Impacts associated with land use policy would not be significant and no  
4 related mitigation is necessary or proposed.

### 5 **Land Use Compatibility**

6 The use of the NMCRC site for cargo and container terminals and TOTE operations would be  
7 consistent and compatible with adjacent land uses. Adjacent land uses are comprised of similar  
8 maritime uses. Land uses immediately adjacent to the NMCRC site include American Fast  
9 Freight, the TOTE terminal, construction staging for the rehabilitation of the Hylebos Bridge,  
10 and commercial and industrial businesses. Alternative 1 would result in the demolition of  
11 existing structures on the site and the development of the site with two new cargo and container  
12 terminals, retention of the TOTE operations at its current terminal, additional auto/break bulk  
13 storage and improvements at the Washington United Terminal. This use would be consistent  
14 with the predominately industrial uses and Port-related activities occurring on the Peninsula and  
15 would not create any incompatibilities with nearby land uses. Alternative 1 would not result in  
16 any significant land use impacts associated with land use incompatibilities to adjacent or nearby  
17 land uses. No mitigation is proposed.

### 18 **4.1.3 No Action Alternative**

#### 19 **Land Use Policy**

20 Under the No Action Alternative, the Navy would retain ownership of the NMCRC site, and no  
21 associated demolition or reuse would occur as described for the proposed action and Alternative  
22 1. The existing facilities within the NMCRC site would remain in place and unused under this  
23 alternative, with the property held in an inactive or caretaker status. While the NMCRC property  
24 would not be used for uses consistent with the Manufacturing/Industrial Centers High Intensity  
25 designation and the PMI zoning, it would also not be used for other uses. While it may not be  
26 fully utilized as envisioned by City planning documents for maritime and industrial activities, it  
27 would not introduce other land uses to the site and would therefore, not conflict with the existing  
28 land use and zoning designations for the property. No land use impacts would occur with  
29 implementation of the No Action Alternative.

#### 30 **Land Use Compatibility**

31 The No Action Alternative would result in the NMCRC property being held in inactive or  
32 caretaker status. As no activities would occur on the NMCRC property following the closure of  
33 the facility in 2010 and no land use changes are proposed, no land use incompatibilities would  
34 occur. No significant land compatibility impacts would occur and no mitigation is required.

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## 1    **4.2    VISUAL RESOURCES**

2    Visual resources impacts may be associated with changes in either the built or natural  
3    environment and can be short-term or long-term. The significance of visual effects is very  
4    subjective and depends upon the degree of alteration, the scenic quality of the area  
5    disturbed, the sensitivity of the viewers, and the viewer perception of features in the  
6    viewshed.

7    Visual resources impacts have been qualitatively evaluated by assessing the nature and  
8    extent of change in landscape character that would occur under the proposed action and  
9    each alternative. The visual analysis addresses landscape modifications as seen from  
10   notable public viewpoints within the viewshed. Factors considered in determining  
11   whether an alternative would have a significant impact on visual resources included the  
12   extent or degree to which its implementation would:

- 13           1. Degrade scenic quality within the region of influence (defined as NMCRC site  
14           and viewshed);
- 15           2. Damage scenic resources, including, but not limited to trees, rock outcroppings,  
16           and historic buildings; or
- 17           3. Create a new source of substantial light or glare that might adversely affect day  
18           or nighttime views in the area.

### 19    **4.2.1    Proposed Action**

20    The proposed action would result in the demolition of existing on-site structures. The  
21    NMCRC site would then be re-graded (along with the rest of the port redevelopment  
22    project area) and placement of fill would occur to raise the on-site elevation. Then, the  
23    NMCRC site would be redeveloped as described in Section 2.3.

### 24    **Scenic Quality**

25    The proposed action would alter the existing character of the NMCRC site by the  
26    removal of existing structures, the placement of fill on the site, and the construction of  
27    new structures. While the proposed action would change the existing character of the  
28    site, it would result in the construction of Port-related uses that are similar in nature to the  
29    types of uses already occurring in the immediate vicinity.

30    The inter-modal rail yard would support additional shipping containers associated with  
31    the new terminal. A portion of the proposed inter-modal rail yard would be located on the  
32    NMCRC site. This area would be characterized by rail spurs, a service road associated  
33    with the railroad spur, and container yard facilities. The rail-yard facilities would be  
34    similar to existing uses in the area.

35    As viewed from the residences on top of the bluff to the north of the NMCRC site (across  
36    Hylebos Waterway), the look of the site would change with implementation of the  
37    proposed action. However, the proposed action would introduce new uses to the site that

1 are consistent with surrounding development in size, scale, and type. The proposed action  
2 would not result in the creation of any structures that could be considered visibly  
3 intrusive to the surrounding development. As viewed from the bluff, which is  
4 approximately 1,900 feet (580 meters) from the boundary of the NMCRC and at a higher  
5 elevation, the proposed development would blend with the surrounding industrial-type  
6 and Port related activities. Therefore, no significant impacts associated with the visual  
7 quality of the site would occur. Related mitigation is not necessary or proposed.

## 8 **Scenic Resources**

9 The NMCRC site is an urban, developed site, consisting of hardscape and buildings, with  
10 small landscaped areas. There are no identified scenic resources on the site, including,  
11 but not limited to trees, rock outcroppings, or historic buildings. Thus, implementation of  
12 the proposed action would not result in damage to scenic resources. No significant impact  
13 would occur and no mitigation is required.

## 14 **Light and Glare**

15 The proposed action would result in the removal of all on-site lighting during the  
16 demolition phase. This would include the removal of lighting on buildings, as well as the  
17 entrance lighting, parking lot lighting, and other outdoor lighting. Temporary and  
18 permanent light sources would be introduced to the project site as a result of the proposed  
19 action. Temporary light sources would be introduced into the site during the fill  
20 placement and construction activities. These activities would result in temporary lighting  
21 in the form of construction vehicles and equipment, as well as portable lighting to  
22 illuminate the construction areas. These temporary light sources would be mobile during  
23 construction and would likely be at different locations on the site depending on  
24 construction activities. The construction of the new facilities would include placement of  
25 new permanent lighting on the NMCRC site. Each of the new uses on the NMCRC site  
26 would require permanent lighting, including lighting for the YTTI inter-modal rail yard,  
27 lighting at the YTTI main gate, and street lighting on the new road. The new lighting  
28 associated with the proposed action would add to existing sources of light in the area  
29 (although the proposed action would first remove existing sources of lighting at the  
30 NMCRC site for demolition).

31 Lighting systems would be provided to illuminate the YTTI intermodal yard area and the  
32 main entrance. Site lighting in the intermodal yard would be designed using high mast  
33 poles between 80 and 120 (24 and 37 meters) feet in height. Poles would be equipped  
34 with lowering devices and would include high sodium pressure fixtures. Floodlights  
35 would be equipped with glare shields. A programmable lighting control system would be  
36 provided for control of fixtures in the intermodal yard and gate areas.

37 For both the TOTE and the YTTI portions of the site, exterior lighting would be  
38 controlled with a time clock and photocell integrated with the lighting control system.  
39 Local controls would be provided for lights in the intermodal yard areas, allowing the  
40 operator to switch the illumination from normal levels during operation to minimum  
41 levels required for security lighting.

1 As a portion of a larger Port redevelopment plan, new lighting at the NMCRC site would  
2 be consistent with *Port of Tacoma Environmental Compliance Program Manual* policies  
3 and procedures related to lighting. The Port maintains a policy to prevent impact to the  
4 visual environment by requiring that outdoor lighting should minimize glare, obtrusive  
5 light and artificial sky glow by limiting outdoor lighting that is misdirected, excessive or  
6 unnecessary. Compliance with the Port's requirements, coupled with the scale and  
7 intensity of other lighting already occurring on adjacent properties, would ensure that the  
8 proposed action would not result in the creation of a substantial new source of light and  
9 glare. No significant impact would occur and no mitigation is required.

#### 10 **4.2.2 Alternative 1**

##### 11 **Scenic Quality**

12 Similar to the proposed action, Alternative 1 would result in changes to the existing  
13 visual character of the NMCRC site through the demolition of existing structures and the  
14 placement of new uses on the site. While Alternative 1 would result in the placement of  
15 new uses on the site, the uses proposed under this alternative would be consistent with  
16 existing zoning and would be similar in nature to other uses occurring on the Peninsula.  
17 Thus, similar to the proposed action, while the scenic quality and visual character of the  
18 NMCRC site would change somewhat as a result of implementation of Alternative 1, the  
19 change would not result in the creation of any structures that could be considered visibly  
20 intrusive to the surrounding development. As viewed from the residences located at the  
21 top of the bluff to the north, development of the site under Alternative 1 would be  
22 consistent with other uses in the immediate vicinity and would blend with the  
23 surrounding industrial-type and Port related activities. Therefore, no significant impacts  
24 associated with the visual quality of the site would occur. Related mitigation is not  
25 necessary or proposed.

##### 26 **Scenic Resources**

27 There are no identified scenic resources on the site. Alternative 1 would demolish  
28 existing facilities on the NMCRC site, and would result in the development of two new  
29 cargo and container terminals at the site, as well as additional auto/break bulk storage and  
30 other improvements on the site. However, as no damage to scenic resources would occur  
31 as a result of Alternative 1, no mitigation is required.

##### 32 **Light and Glare**

33 Under Alternative 1, existing lighting at the NMCRC would be removed for demolition  
34 of the existing facilities. New lighting would be installed as part of Alternative 1, and  
35 would include street lighting along the realigned portion of Taylor Way and security  
36 lighting for the imported automobile storage area. The lighting proposed would be of  
37 similar scale and intensity as other lighting occurring on adjacent properties. Alternative  
38 1 would not introduce substantial new sources of light and glare to the area, thus, no  
39 significant impact would occur. No mitigation is required.

1    **4.2.3 No Action Alternative**

2    Under the No Action Alternative, the Navy would retain ownership of the NMCRC site,  
3    and no associated demolition or reuse would occur as described for the proposed action  
4    and Alternative 1. The existing facilities within the NMCRC site would remain in place  
5    and unused under this alternative, with the property held in an inactive or caretaker status.

6    **Scenic Quality**

7    The only changes that would occur to the NMCRC site under the No Action Alternative  
8    is that the site would be unused. There would be no vehicles coming and going from the  
9    site and no visible activity on the site. While the No Action Alternative would not  
10   substantially change the existing visual appearance of the site as all of the existing  
11   structures would remain, a slight visible change associated with the property being  
12   unoccupied would occur. However, this change would not be considered significant. No  
13   mitigation is required.

14   **Scenic Resources**

15   There are no identified scenic resources on the site, and the No Action Alternative would  
16   not result in any significant impacts to scenic resources. No mitigation is required.

17   **Light and Glare**

18   The No Action Alternative would result in the NMCRC site being held in an inactive  
19   status. While some lighting would likely be present on the site for security purposes,  
20   lighting associated with the No Action Alternative would be reduced as compared to the  
21   proposed action. No significant impact associated with light and glare would occur and  
22   no mitigation is necessary.

## 1    **4.3    SOCIOECONOMICS**

2    Potential direct and indirect impacts on employment, population, housing, and schools resulting  
3    from disposal and reuse of NMCRC are discussed in this section. Factors considered in  
4    determining whether an alternative would have significant socioeconomic impacts include the  
5    extent or degree to which its implementation would:

- 6           1. Cause a decrease in local or region of influence employment;
- 7           2. Induce growth or concentrations of population;
- 8           3. Create a demand for additional housing in Tacoma or the surrounding communities; or
- 9           4. Generate student enrollment that exceeds the capability of responsible authorities to  
10          accommodate.

11    The significance of socioeconomic impacts is related to the social and economic characteristics  
12    of the region. In general, the more jobs generated, the more beneficial the socioeconomic effects  
13    that may occur. Population and housing growth may have ramifications for other environmental  
14    issues, such as potential traffic increases and the need for additional infrastructure improvements.  
15    The significance of these other impacts is defined in pertinent sections of this document.

16    In addition to socioeconomics, this section summarizes potential impacts from disposal and reuse  
17    of the NMCRC site on issues of environmental justice, as mandated by Executive Order 12898.  
18    The Executive Order on “Federal Actions to Address Environmental Justice in Minority  
19    Populations and Low-income Populations,” issued on February, 11, 1994, requires that the  
20    impacts of federal actions on minority and low-income populations be addressed to avoid  
21    disproportionate adverse impacts to these groups.

### 22    **4.3.1    Proposed Action**

23    The proposed action would result in the creation of new jobs as part of the overall Port  
24    redevelopment plan for the NMCRC Tacoma site and surrounding land. The proposed uses that  
25    would occur on the NMCRC site as a result of the Port redevelopment plan are expected to result  
26    in the creation of approximately 166 jobs. As the proposed action would generate new  
27    employment at the site and contribute to the overall Port redevelopment plan, which would also  
28    generate a large number of jobs, the proposed action would not result in the decrease in  
29    employment. Further, although a number of new jobs would be generated, these jobs are likely  
30    to be filled by persons already living locally in the area, and the proposed action is not expected  
31    to induce population growth. As the jobs generated would be filled by persons living locally, the  
32    proposed action would not create a demand for additional housing in Tacoma. Even if there is  
33    some relocation to the area, the existing 9 percent vacancy rate could accommodate the  
34    relocation without causing the creation of additional housing. It is not anticipated that any  
35    impacts to schools would occur. As jobs would largely be filled by persons already residing in  
36    the community, student enrollment would not be affected. The proposed action would not have  
37    disproportionately high and/or adverse human health effects on minority or low-income  
38    populations since the Port’s redevelopment activities are located within an area predominately  
39    owned and utilized by the Port of Tacoma as a public port facility under a charter from the State

1 of Washington. No significant socioeconomic impacts would occur as a result of the proposed  
2 action and no mitigation is required.

3 The disposal and reuse of the NMCRC site would not have disproportionately high and/or  
4 adverse human health effects on minority and low-income populations since the Port's  
5 redevelopment activities are located within an area predominately owned and utilized by the Port  
6 of Tacoma as a public port facility under a charter from the State of Washington. No significant  
7 environmental justice impacts would occur as a result of the proposed action and no mitigation is  
8 required.

### 9 **4.3.2 Alternative 1**

10 Similar to the Proposed Action, the development of the NMCRC site with Alternative 1 would  
11 result in the creation of new jobs. Also similar to the proposed action, these jobs are likely to be  
12 filled by persons already residing within or near to Tacoma. For this reason, the implementation  
13 of Alternative 1 would not result in: a decrease in employment, growth inducement, demand for  
14 additional housing, or increased student enrollment in local schools. Similar to the proposed  
15 action, Alternative 1 would not have disproportionately high and/or adverse human health effects  
16 on minority or low-income populations. No significant socioeconomic impacts or environmental  
17 justice would occur as a result of Alternative 1 and no mitigation is required.

18 As the Port predominately owns and utilizes the area surrounding the site, the implementation of  
19 Alternative 1 would not have disproportionately high and/or adverse human health effects on  
20 minority and low-income populations. No significant environmental justice impacts would occur  
21 as a result of Alternative 1 and no mitigation is required.

### 22 **4.3.3 No Action Alternative**

23 Under the No Action Alternative, the NMCRC would remain in place and unused under this  
24 alternative, with the property held in an inactive or caretaker status. No significant  
25 socioeconomic impacts or environmental justice would occur and no mitigation would be  
26 required.

27 No environmental justice impacts would occur with the No Action Alternative. The NMCRC  
28 would remain unused, and no minority or low-income populations would be exposed to  
29 disproportionately high and/or adverse human health effects.

## 1    **4.4    CULTURAL RESOURCES**

2    Potential impacts to cultural resources resulting from disposal and reuse of the NMCRC site are  
3    discussed in this section. Factors considered in determining whether an alternative would have a  
4    significant impact on cultural resources include the extent or degree to which implementation  
5    would cause either of the following:

- 6           1. A substantial and adverse change in the characteristics that qualify a historic resource  
7           for listing on the NRHP; or
- 8           2. A substantial and adverse change in the characteristics that qualify an archaeological  
9           resource for listing on the NRHP.

10   Under Section 106 of the NHPA, an undertaking has an effect on a historic property when it  
11   alters characteristics of the property that may qualify it for inclusion in the NRHP. The  
12   regulations implementing the NHPA define the term “adverse effect” to include the transfer,  
13   lease, or sale of the property out of Federal ownership, in the absence of adequate and legally  
14   enforceable restrictions or conditions, to ensure the long-term preservation of the property.

### 15   **4.4.1   Proposed Action**

#### 16    **Historic Resources**

17   Implementation of the proposed action would result in the demolition of all on-site structures.  
18   While there are three structures (Piers 40 and 60, and Building 51) on site that meet the 50-year  
19   age threshold for NRHP eligibility, the structures lack sufficient integrity to meet National  
20   Register Criteria and are recommended to be not eligible for the NRHP. There is no historical  
21   evidence to suggest that these structures were important within the operations of the shipbuilding  
22   enterprise that formerly occurred on the site and the structures do not derive any significance for  
23   associations with any historical figures that made important contributions to the past. The  
24   remaining structures on site do not meet the 50-year age threshold for NRHP eligibility and they  
25   also lack sufficient significance to meet NRHP Criteria Consideration and are recommended to  
26   be not eligible for the NRHP. The structures at the NMCRC site create a distinctive grouping  
27   within a well-defined area; however, the structures date from the 1940s to 2000 and do not have  
28   a cohesive feel or character. For this reason, the NMCRC site does not possess sufficient  
29   integrity to meet NRHA Criteria as a historic district. While the proposed action would result in  
30   the removal of all structures at the site, none of the structures are considered eligible for the  
31   NRHP; therefore, the proposed action would not result in any significant impacts to historic  
32   resources. No mitigation is necessary.

## 1 **Archaeological Resources**

2 The NMCRC site is located within an area that was filled with dredged material from the  
3 surrounding waterways, followed by upland material to build up the landscape. Previous  
4 investigations in nearby areas have resulted in the determination that potential for archaeological  
5 resources in the area are low. Given the history of disturbance at the site associated with fill  
6 activities and industrial activities, and the expected presence of approximately 7.5 feet (2.3  
7 meters) of fill at the site, the proposed action would not result in any significant impacts to  
8 archaeological resources. No mitigation is required.

### 9 **4.4.2 Alternative 1**

## 10 **Historic Resources**

11 Implementation of Alternative 1 would result in the removal of all on-site structures. However,  
12 as none of the on-site structures are considered for the National Register of Historic Places, the  
13 removal of structures would not result in any significant impacts to historic resources. No  
14 mitigation is required.

## 15 **Archaeological Resources**

16 The NMCRC site is located within an area that has been subject to extensive fill activities and  
17 industrial development. The site is developed on approximately 7.5 feet (2.3 meters) of fill  
18 dredged from nearby waterways. The fill activities and industrial development that have  
19 occurred at the NMCRC site and surrounding area indicate that the presence for archaeological  
20 resources is low. For these reasons, the implementation of Alternative 1 would not result in any  
21 significant impacts to archaeological resources. No mitigation is required.

### 22 **4.4.3 No Action Alternative**

23 Under the No Action Alternative, the Navy would retain ownership of the NMCRC site, and no  
24 associated demolition or reuse would occur as described for the proposed action and  
25 Alternative 1. The existing structures at the NMCRC site would remain in place and unused  
26 under this alternative, with the property held in an inactive or caretaker status. There would be no  
27 significant impacts to historic resources or archaeological resources as a result of the No Action  
28 Alternative and no mitigation would be required.

## 1   **4.5   TRANSPORTATION**

2   Potential transportation impacts resulting from disposal and reuse of the NMCRC are discussed  
3   in this section, for future 2013 conditions, which is the buildout used in the BHTRP EIS. The  
4   No Action Alternative establishes the baseline for system performance against which the  
5   proposed action and Alternative 1 are compared. For each of the alternatives analyzed, a set of  
6   transportation facilities associated with the BHTRP were assumed to be in place by 2013 and  
7   accounted for in the analysis. Refer to Appendix B for the complete transportation analysis  
8   methodology. Factors considered in determining whether an alternative would have a significant  
9   transportation impact included the extent or degree to which its implementation would:

- 10           1. Cause LOS at intersections to exceed LOS D, or increase congestion at intersections  
11           operating at LOS E such that it degrades to LOS F;
- 12           2. Increase demand on public transportation in excess of planned or anticipated capacity;
- 13           3. Increase demand for bicycle and pedestrian facilities in excess of planned or  
14           anticipated capacity;
- 15           4. Substantially increase truck traffic associated with construction;
- 16           5. Result in parking demand exceeding the supply;
- 17           6. Impede emergency access on or off the site; or
- 18           7. Result in decreased efficiency of goods movement.

19   The No Action Alternative 2013 conditions are the baseline against which the proposed action  
20   and Alternative 1 are measured. While impacts of the No Action Alternative are discussed in  
21   greater detail in Section 4.5.3 below, the intersections that would operate at a deficient LOS  
22   under the No Action Alternative are provided here for baseline comparison of the proposed  
23   action and Alternative 1.

24   Five study intersections would operate at LOS E or worse under the No Action Alternative.  
25   These intersections include:

- 26           • Taylor Way/SR 509 – Marine View Drive
- 27           • 54th Avenue E/Pacific Highway E (SR 99)
- 28           • Port of Tacoma Road/Pacific Highway E
- 29           • Taylor Way – 54th Avenue E/4th Street E
- 30           • Port of Tacoma Road/20th Avenue E

31   The remaining study intersections would operate at LOS D or better.

## 4.5.1 Proposed Action

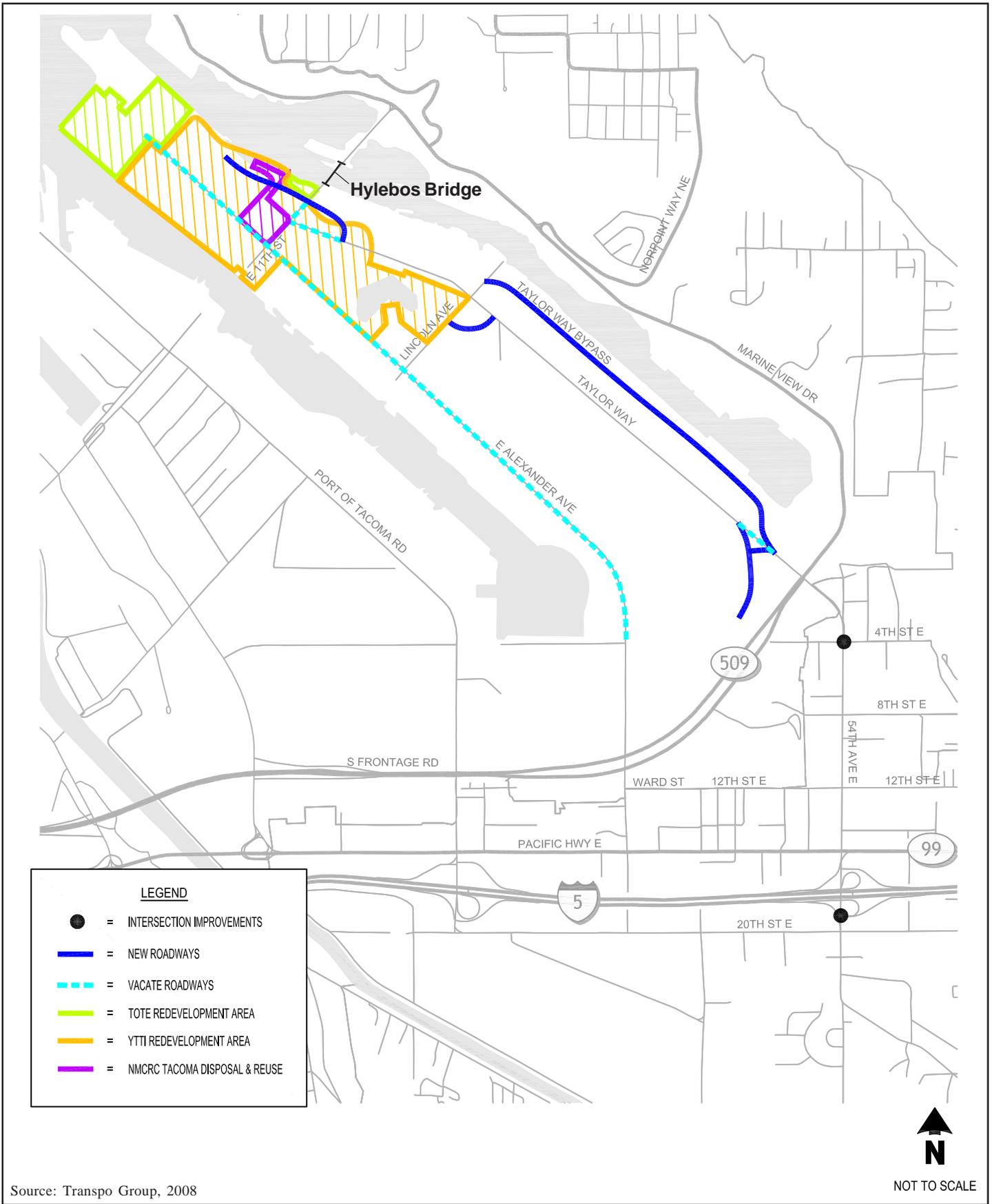
### Planned and Programmed Transportation Improvements

The City, Port, and State have planned and programmed transportation improvements that were assumed for analysis of the proposed action. Figure 4.5-1 illustrates the roadway system that would occur in the proposed action scenario, including proposed improvements unrelated to the disposal and reuse of the NMCRC site. These improvements are discussed below.

**Hylebos Bridge.** The upgrade of the existing Hylebos Bridge was included in the 2013 conditions for the proposed action. The bridge provides a connection between E 11th Street and Marine View Drive over the Hylebos Waterway. The proposed improvements are funded and scheduled for completion by 2010.

**Blair-Hylebos Terminal Redevelopment Project.** In the proposed action scenario, transportation improvements would be made as a part of the BHTRP. The following transportation improvements are not part of the proposed action, but would be in place in 2013 as a result of development of the BHTRP:

- SR 509/Taylor Way – The northbound and southbound approaches would be expanded to include two left-turn lanes along SR 509. Right-turn lanes would be provided for the northbound, southbound, and eastbound movements.
- 54th Avenue E/I-5 Northbound Ramp – A traffic signal would be installed.
- Taylor Way Widening and Overpass – Portions of this roadway would be reconstructed or abandoned. Reconstructed portions within the BHTRP would include two 14-foot (4.2-meter) travel lanes, a 12-foot (3.6-meter) center turn lane and sidewalks on the east side of the roadway. Approximately 880 feet (268 meters) from the SR 509/Taylor Way intersection, a portion of the roadway would be abandoned and a new grade separated Taylor Way would be constructed to the west over the arrival/departure rail tracks and Taylor Way intermodal yard. The new grade separated structure would provide three lanes with sidewalks.
- Taylor Way Extension – North of Lincoln Avenue a portion of Taylor would be relocated to the east and would tie into 11th Street E east of the existing intersection. As part of the proposed action only, at 11th Street E, Taylor Way would extend north (into the NMCRC property) terminating in a cul-de-sac near the existing Trident Seafoods plant and Army Reserve Center.
- Taylor Way Bypass Route – A new roadway on the east side of the peninsula connecting to the existing Taylor Way approximately 2,500 feet (761 meters) north of the new overpass structure and terminating at Lincoln Avenue would be constructed. This roadway will consist of two 14-foot (4.2-meter) travel lanes, a 12-foot (3.6-meter) center turn lane, and sidewalks on the west side. The route would provide an alternate route for vehicular traffic when Taylor Way near Lincoln Avenue is blocked by trains.



E:\ArcGIS\N\NAV-01.18 TacomaReuse\Map\ENV\EA\Fig4.5-1\_ProposedActionRoadway.pmd -KF

## Proposed Action Roadway System

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCR TACOMA

Figure 4.5-1

- Taylor Way/Lincoln Avenue – This intersection would be closely spaced with the YTTI gate; therefore, this location would be constructed with coordinated traffic signals. In addition, the new configuration would allow vehicular traffic access through the intersection via some of the movements even when portions of the intersection are blocked by trains. Signage from SR 509 would direct drivers to the most appropriate route when the intersection is blocked by a train.

1 Based on the improvements associated with development of the BHTRP, the proposed action  
 2 scenario would include one new study intersection: Taylor Way Overpass/Taylor Way.

3 Development of the BHTRP, which is not part of the proposed action but would occur following  
 4 the disposal of the NMCRC site, would provide rail improvements. Within the NMCRC site,  
 5 these improvements would consist of two tracks running northeast from the Lincoln  
 6 Avenue/Taylor intersection into the YTTI intermodal road yard which would expand to six  
 7 tracks within the yard. The six tracks would each be capable of holding half a train or fourteen,  
 8 270-foot (82-meter) railcars and would end at the north side of the YTTI intermodal yard.

9 **Trip Generation**

10 Traffic generated on the NMCRC site for the Proposed Action was determined based on  
 11 information provided by the Port and is consistent with the *BHTRP Draft EIS*. Daily and PM  
 12 peak hour vehicular trip generation for trucks and employees for the proposed action was  
 13 determined assuming the NMCRC site represents approximately five percent of the proposed  
 14 development. Five percent was calculated based on a ratio of the 9.03 acre (3.65-ha) NMCRC  
 15 site to the total 167 acre (68-ha) YTTI site. Table 4.5-1 provides a summary of the vehicular trip  
 16 generation for the proposed action.

<b>Table 4.5-1 Proposed Action Trip Generation Summary</b>		
	<b>Daily Trips<sup>1</sup></b>	<b>PM Peak Hour Trips<sup>1</sup></b>
Total Trips		
Employees	54	10
Trucks	141	8
Displaced Trips	<u>-75</u>	<u>-30</u>
<i>Net New Trips</i>	<i>120</i>	<i>-12</i>

1. Trips are based on information from the Port of Tacoma and rates for Port Terminals land use from ITE *Trip Generation*, 7<sup>th</sup> Edition.  
 Source: Transpo Group 2008.

17 The NMCRC site would generate approximately 120 net new daily trips under the proposed  
 18 action. During the PM peak hour, the NMCRC site would generate less traffic than is currently

1 being experienced. The decrease in trip generation during the PM peak hour is due to the change  
2 in use on site. Industrial type uses typically generate higher traffic during off-peak hours when  
3 roadways are less congested.

#### 4 **LOS and Congestion**

5 Intersection levels of service were calculated for the proposed action conditions in 2013 and  
6 compared to the No Action Alternative. The proposed action operations would be the same as the  
7 No Action Alternative, with the following five intersections continuing to operate at LOS E or  
8 worse:

- 9 • Taylor Way/SR 509 – Marine View Drive
- 10 • 54th Avenue E/Pacific Highway E (SR 99)
- 11 • Port of Tacoma Road/Pacific Highway E
- 12 • Taylor Way – 54th Avenue E/4th Street E
- 13 • Port of Tacoma Road/20th Avenue E

14 The proposed action would not be anticipated to have a significant impact on the study  
15 intersections as compared to the No Action Alternative. No significant impact would occur and  
16 no mitigation is required.

#### 17 **Demand on Public Transportation**

18 The transit system would be similar to existing conditions under the proposed action. It is not  
19 anticipated that the proposed action would result in increased demand on public transportation  
20 that would result in a significant impact. It is likely that as ridership increases within Tacoma and  
21 the Port of Tacoma area, Pierce Transit would provide additional service to meet the demand. No  
22 mitigation is required.

#### 23 **Demand on Bicycle and Pedestrian Facilities**

24 The BHTRP would provide sidewalks along Taylor Way and the Taylor Way Bypass route. The  
25 addition of sidewalks to roadways providing access to the site would improve pedestrian  
26 connectivity to and from the site as well as throughout the Port for the proposed action. The  
27 pedestrian and bicycle activity within the study area is very low and is not anticipated to increase  
28 as a result of the proposed action. No significant impacts to demand on bicycle and pedestrian  
29 facilities would occur as a result of the proposed action and no mitigation is required.

#### 30 **Construction Truck Traffic**

31 The proposed action would be implemented in conjunction with the development of the entire  
32 BHTRP site. Construction truck traffic impacts for the BHTRP were documented in the *BHTRP*  
33 *Draft EIS*. As discussed in the *BHTRP Draft EIS*, approximately 22,000 total truck trips would  
34 be anticipated with the fill importation required for the Port's redevelopment project. This would

1 equate to approximately 260 trucks per day and 32 trucks per hour (assuming four months of  
2 hauling and eight hour work days). The 9.03-acre (3.65-ha) NMCRC site represents about five  
3 percent of the 168-acre (68-ha) YTTI terminal being redeveloped as part of the BHTRP. Five  
4 percent of the construction truck traffic would be approximately 13 trucks per day and 2 trucks  
5 per hour. This would be less than the total daily and PM peak hour traffic anticipated with the  
6 proposed action; therefore, truck traffic impacts due to construction would not be significant and  
7 no mitigation is required.

## 8 **Parking**

9 The proposed action includes redevelopment on the NMCRC site. Based on the BHTRP EIS, it  
10 is anticipated that sufficient parking and truck queue storage would be provided to accommodate  
11 the activity within the site. No significant parking or queuing impacts would be expected due to  
12 the proposed activities that would occur on the site and no mitigation is required.

## 13 **Emergency Access**

14 Emergency vehicle access to the NMCRC site and properties along Alexander Avenue would be  
15 improved with implementation of the BHTRP in the proposed action scenario. The addition of  
16 the Taylor Way overpass (as part of the BHTRP) would eliminate trains blocking the roadway,  
17 and the opening of the Hylebos Bridge would provide a second, more direct access point to the  
18 site. No significant impacts associated with emergency access would occur and no mitigation is  
19 required.

## 20 **Goods Movement**

21 The Port of Tacoma uses a delay ratio to identify issues with rail operations. The development of  
22 the BHTRP would result in delays to rail operations under the proposed action scenario, with a  
23 delay ratio of 1.34, which is higher than the Port's acceptable 1.30 delay ratio. However, the Port  
24 would not anticipate a significant impact to rail operations with the 1.34 ratio. Additionally, the  
25 delays would occur as a result of the BHTRP, not as a result of the disposal and reuse of the  
26 NMCRC property. No mitigation is required.

27 Train activity would increase as a result of the BHTRP; however, the BHTRP proposed roadway  
28 improvements would mitigate impacts of trains blocking roadways by providing alternative  
29 routes. Thus, no significant impact associated with roadways blockage would occur and no  
30 mitigation is required.

## 31 **4.5.2 Alternative 1**

### 32 **Planned and Programmed Transportation Improvements**

33 The City, Port, and State have planned and programmed transportation improvements that were  
34 assumed for the Alternative 1 traffic analysis. These improvements are discussed below.

35 **Hylebos Bridge.** Similar to the proposed action, upgrading the existing Hylebos Bridge was  
36 included in the 2013 conditions for Alternative 1. The bridge provides a connection between  
37 E 11th Street and Marine View Drive over the Hylebos Waterway. The proposed improvements  
38 are funded and scheduled for completion by 2010.

1 **Adopted Master Plan Transportation Improvements.** Alternative 1 would be consistent with  
 2 continuation of the Port’s adopted master plan. As such, planned transportation improvements  
 3 are slightly different than the proposed action, since the BHTRP would not occur. The roadway  
 4 system would primarily be the same as existing conditions except for the following locations:

- 5 • SR 509/Taylor Way – The northbound and southbound approaches would be expanded to  
 6 include two left-turn lanes along SR 509. Right-turn lanes would be provided for the  
 7 northbound, southbound, and eastbound movements.
- 8 • 54th Avenue E/I-5 Northbound Ramp – A traffic signal would be installed.
- 9 • Taylor Way North of 11th Street E – This roadway would extend north terminating in a  
 10 cul-de-sac near the existing Trident Seafoods plant and Army Reserve Center. This  
 11 portion of Taylor Way would consist of two 12-foot lanes with 8-foot shoulders.

12 **Trip Generation**

13 Traffic generated on the NMCRC site for Alternative 1 was determined based on information  
 14 provided by the Port of Tacoma and is consistent with the *BHTRP Draft EIS*. Daily and PM  
 15 peak hour vehicular trip generation, for trucks and employees for Alternative 1 was determined  
 16 assuming the NMCRC site represents approximately five percent of the proposed development  
 17 for each Alternative 1. Table 4.5-2 provides a summary of the vehicular trip generation for the  
 18 Alternative 1.

<b>Table 4.5-2</b>		
<b>Alternative 1 Trip Generation Summary<sup>1</sup></b>		
	<b>Daily Trips</b>	<b>PM Peak Hour Trips</b>
Employees	9	0
Trucks	15	1
Displaced Trips	-75	-30
<i>Net New Trips</i>	-51	-29

1. Trips are based on information from the Port of Tacoma and rates for Port Terminals land use from *ITE Trip Generation*, 7<sup>th</sup> Edition.  
 Source: Transpo Group 2008.

19 The NMCRC site would generate approximately 51 fewer net new daily trips under Alternative  
 20 1. As shown in Table 4.5-2, both the daily and PM peak hour vehicular trips would decrease. The  
 21 decrease in trip generation is due to the change in use on site.

## 1 **LOS and Congestion**

2 Alternative 1 would improve operations to LOS D at the Taylor Way/SR 509 – Marine View  
3 Drive intersection as less traffic would be coming to and from the Port. All other intersections,  
4 under Alternative 1, would have similar operations to the proposed action. The following four  
5 intersections would continue to operate at LOS E or worse under Alternative 1 with the addition  
6 of traffic from the NMCRC site:

- 7 • 54th Avenue E/Pacific Highway E (SR 99)
- 8 • Port of Tacoma Road/Pacific Highway E
- 9 • Taylor Way – 54th Avenue E/4th Street E
- 10 • Port of Tacoma Road/20th Avenue E

11 Alternative 1 would not have a significant impact on the study intersections and no mitigation is  
12 required.

## 13 **Demand on Public Transportation**

14 The transit system would be similar to existing conditions under Alternative 1. It is not  
15 anticipated that Alternative 1 would result in increased demand on public transportation that  
16 would result in a significant impact. It is likely that as ridership increases within Tacoma and the  
17 Port of Tacoma area, Pierce Transit would provide additional service to meet the demand. No  
18 mitigation is required.

## 19 **Demand on Bicycle and Pedestrian Facilities**

20 No additional non-motorized facilities would be provided with Alternative 1. No improvements  
21 in pedestrian and bicycle connectivity are anticipated; however, Alternative 1 would not result in  
22 increased demand on bicycle and pedestrian facilities, so no significant impact would occur. No  
23 mitigation is required.

## 24 **Construction Truck Traffic**

25 Construction truck traffic associated with the development of Alternative 1 at the NMCRC site  
26 would be similar to construction truck traffic that would occur under the proposed action. Thus,  
27 Alternative 1 would result in construction truck traffic of approximately 13 truck trips per day,  
28 which would not result in any significant impacts. No mitigation is required.

## 29 **Parking**

30 Alternative 1 includes development on the NMCRC site. It is anticipated that sufficient parking  
31 and truck queue storage would be provided to accommodate the activity within the site. No  
32 significant parking or queuing impacts would be expected due to the terminal activities  
33 associated with Alternative 1 on the site. No mitigation is required.

## 1 **Emergency Access**

2 Emergency access would not be improved with Alternative 1 due to the closure of Alexander  
3 Avenue north of SR 509. The closure of this roadway could add approximately three miles (4.8  
4 km) of travel and up to four minutes to emergency response times. This additional response time  
5 does not meet the City of Tacoma's fire department level of service standard based on the  
6 *BHTRP Draft EIS*. However, the closure of Alexander Avenue north of SR 509 would not occur  
7 as a result of Alternative 1; the closure would occur as part of development of the area consistent  
8 with the Port's current master plan. This would include two new cargo and container terminals,  
9 additional auto/break bulk storage and improvements at the Washington United Terminal. As  
10 the closure of Alexander Avenue would occur as part of the overall development of the area, and  
11 not as a result of the disposal and reuse of the NMCRC site, no significant impacts associated  
12 with emergency access would occur as a result of Alternative 1. No mitigation is required.

## 13 **Goods Movement**

14 Delays to rail operations under Alternative 1 would be within acceptable levels with a delay ratio  
15 of 1.25. For Alternative 1, trains blocking roadways in the study area would increase over the  
16 current and forecasted No Action conditions. The increase in trains blocking roadways would  
17 occur as a result of the increase in rail traffic and the lack of roadway improvements that would  
18 result from the development of the area surrounding the NMCRC site consistent with the Port's  
19 current master plan. The increase in trains blocking roadways in the area would occur as a result  
20 of development consistent with the Port's master plan, not as a result of the disposal and reuse of  
21 the NMCRC site. For this reason, disposal and reuse of the NMCRC site under Alternative 1  
22 would not result in any significant impacts associated with increased roadway blockage from  
23 trains. No mitigation is required.

### 24 **4.5.3 No Action Alternative**

25 The proposed upgrades to the Hylebos Bridge discussed for the proposed action and Alternative  
26 1 would also occur in the No Action Alternative. The proposed BHTRP improvements that  
27 would occur in the proposed action scenario would also occur under the No Action Alternative,  
28 with the exception of the Taylor Way extension. As part of the No Action Alternative, the  
29 extension of Taylor Way would need to be relocated away from the NMCRC property, as the site  
30 would remain under Navy ownership. This portion of Taylor Way would consist of two 12-foot  
31 (3.6-meter) lanes with 8-foot (2-meter) shoulders. Based on the improvements that would occur  
32 as result of the BHTRP, the No Action Alternative would include one new study intersection:  
33 Taylor Way Overpass/Taylor Way. Previously referenced Figure 4.5-1 illustrates the roadway  
34 system that would occur in the No Action Alternative.

35 Under the No Action Alternative, the remainder of the BHTRP (excluding the NMCRC  
36 property) would be developed. Any roadway or rail improvements anticipated to occur within  
37 and through the NMCRC Tacoma property as part of the BHTRP would be re-routed to avoid the  
38 site.

## 1 **LOS and Congestion**

2 Five study intersections would operate at LOS E or worse under the No Action Alternative.  
3 These intersections include:

- 4 • Taylor Way/SR 509 – Marine View Drive
- 5 • 54th Avenue E/Pacific Highway E (SR 99)
- 6 • Port of Tacoma Road/Pacific Highway E
- 7 • Taylor Way – 54th Avenue E/4th Street E
- 8 • Port of Tacoma Road/20th Avenue E

9 The remaining study intersections would operate at LOS D or better. As the No Action  
10 Alternative would result in the site operating in caretaker status, it would not generate any trips.  
11 Therefore, it would not contribute to the existing congestion and LOS deficiencies at any of these  
12 intersections. Thus, no significant impact would occur and no mitigation is required.

## 13 **Demand on Public Transportation**

14 The No Action Alternative would not result in changes to the public transportation system. The  
15 transit system would be anticipated to be similar to existing conditions. As the NMCRC site  
16 would become inactive as a result of the No Action Alternative, it would not result in any  
17 increased demand on public transportation. No significant impact would occur and no mitigation  
18 is required.

## 19 **Demand on Bicycle and Pedestrian Facilities**

20 The BHTRP would construct sidewalks along Taylor Way and the Taylor Way Bypass route.  
21 The addition of sidewalks to roadways providing access to the site would improve pedestrian  
22 connectivity to and from the site as well as throughout the Port under the No Action Alternative.  
23 The No Action Alternative would result in the NMCRC site being held in caretaker status. Thus,  
24 there would be no uses at the NMCRC site which would result in increased demand on bicycle  
25 and pedestrian facilities. No significant impact would occur and no mitigation is required.

## 26 **Construction Truck Traffic**

27 The NMCRC site would be closed under the No Action Alternative and no construction traffic  
28 would be generated. No significant impacts would occur and no mitigation is required.

## 29 **Parking**

30 With the No Action Alternative, the NMCRC site would be vacated; therefore, no parking would  
31 be necessary. No significant impacts would occur and no mitigation is required.

1    **Emergency Access**

2    The BHTRP, which would be developed around the NMCRC site under the No Action  
3    Alternative, would include construction of the Taylor Way overpass to provide a grade separated  
4    crossing. The proposed roadway improvements would provide alternative routes to access the  
5    NMCRC site and allow vehicular traffic to bypass trains blocking facilities. However, it is likely  
6    that with the increases in rail activity trains blocking the Lincoln Avenue/Taylor Way  
7    intersection could increase. As the NMCRC site would be in caretaker status under the No  
8    Action Alternative, and proposed improvements would provide greater access to the site, no  
9    significant impact would occur and no mitigation is required.

10   **Goods Movement**

11   The development of the BHTRP would provide additional rail lines in the vicinity of the  
12   NMCRC site to serve the YTTI and TOTE properties. By 2013, the No Action Alternative would  
13   result in an anticipated delay ratio for rail operations of approximately 1.34, which is slightly  
14   over the Port's guideline of 1.30. However, based on the *BHTRP Draft EIS*, this delay ratio  
15   would not significantly impact rail operations in the Port. Thus, no significant impact would  
16   occur and no mitigation is required.

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## 1    **4.6    AIR QUALITY**

### 2    **4.6.1    Approach to Analysis**

3    Emissions of air pollutants that can affect air quality in the project area are generated  
4    from activities at the NMCRC site. Most operational activities at the NMCRC site have  
5    ceased. As discussed in Section 3.6, air emissions associated with current activities  
6    include minor emissions associated with motor vehicles used by tenants traveling to the  
7    site, and minor maintenance activities.

8    Development of the NMCRC site would require the demolition of the existing buildings  
9    on site, site preparation activities, and paving. Emissions associated with these activities  
10   are calculated based on assumptions regarding the amount of demolition required,  
11   estimated timeframe for construction (2011 through 2013), and estimated equipment and  
12   workforce requirements.

13   The NMCRC site would be developed as part of the larger Port Blair-Hylebos Terminal  
14   Redevelopment Plan and would include portions of the YTTI, TOTE and RRI  
15   redevelopment projects. The terminal would include activities associated with cargo port  
16   operations. Emission sources associated with these operations include the following:

- 17       • Ocean-Going Vessels (OGVs)
- 18       • Harbor Vessels (HVs)
- 19       • Rail Locomotives (RLs)
- 20       • Cargo Handling Equipment (CHE)
- 21       • On-Road Heavy Duty Vehicles (HDVs)
- 22       • Fleet Vehicles (FVs)

23   The NMCRC site itself would not include emissions from OGVs or HVs, as the NMCRC  
24   site does not include a wharf or other facilities for marine vessels. Accordingly, only  
25   those activities occurring on the NMCRC site have been evaluated to assess air emissions  
26   associated with the proposed action. These activities would include the on-dock  
27   intermodal rail, trucks gates, and container yard operations. The emission sources  
28   anticipated would include RLs, CHE, HDVs, and some use of FVs.

29   The following sections discuss the air impacts associated with the proposed action and  
30   project alternatives.

### 31   **4.6.2    Proposed Action**

32   As discussed in Section 2.2, the NMCRC site would be part of the Port's Redevelopment  
33   Plan. The Port's Redevelopment Plan consists of converting existing industrial properties  
34   to container cargo and trailer handling and support facilities. It would be necessary to

1 demolish the existing buildings at the NMCRC site to accommodate the YTTI, TOTE  
2 and RRI redevelopment projects. Emission factors and emission calculation  
3 methodologies for fugitive dust due to site grading have been based on U.S. EPA's  
4 AP-42 emission factors for construction activities. The U.S. EPA does not provide  
5 emission factors for demolition activities or specific emission factors for material  
6 handling. Therefore, emission factors for demolition and material handling were  
7 obtained from the South Coast Air Quality Management (SCAQMD) *CEQA Air Quality*  
8 *Handbook* (SCAQMD 1993), as the SCAQMD Handbook provides the most detailed  
9 estimates of fugitive dust generation from these activities, based on studies conducted by  
10 SCAQMD to evaluate emissions. Demolition emissions have been calculated based on  
11 the SCAQMD CEQA Air Quality Handbook, Table A9-9, emission factor of 0.00042 lbs  
12 PM<sub>10</sub> per cubic feet of building demolition. This emission factor provides a general  
13 estimate of fugitive dust that would be generated during demolition.

14 The existing buildings total 51,555 square feet (4,789 square meters). It was assumed  
15 that each building is on average 20 feet (6 meters) high, for a total volume of 1,031,100  
16 cubic feet (24,540 cubic meters). Based on the SCAQMD emission factor, PM<sub>10</sub>  
17 emissions from building demolition would be a total of 433.06 pounds (196 kilograms).

18 Based on information for similar demolition projects, it was also assumed that the  
19 demolition phase of the project would utilize two bulldozers, two loaders, and eight dump  
20 trucks during the demolition of existing on-site structures, and that similar equipment  
21 would be required for construction for the entire construction period. Emissions from  
22 heavy construction equipment were calculated based on the assumption that construction  
23 equipment would meet EPA Tier 1 standards. Emissions from heavy-duty on-road trucks  
24 that would transport debris and/or building materials to the site, and emissions from  
25 worker vehicles, were estimated based on the emission factors from the MOBILE6  
26 emissions model (EPA 2002), assuming trucks would be represented by the HDDV7  
27 vehicle category, and worker vehicles would be represented by the LDGT2 vehicle  
28 category.

29 Emissions of PM<sub>2.5</sub> were estimated based on the recommendations in the SCAQMD's  
30 *Final Methodology to Calculate Particulate Matter (PM)<sub>2.5</sub> and PM 2.5 CEQA*  
31 *Significance Thresholds*, which are based on field studies conducted to determine the  
32 fraction of PM<sub>10</sub> that would be attributable to PM<sub>2.5</sub> and is the most accurate information  
33 available. Fugitive dust PM<sub>2.5</sub> would be 21 percent of PM<sub>10</sub>, offroad equipment, PM<sub>2.5</sub>  
34 would be 89 percent of offroad equipment PM<sub>10</sub>, and on-road vehicle PM<sub>2.5</sub> would be 99  
35 percent of on-road vehicle PM<sub>10</sub>.

36 Construction emissions are summarized in Table 4.6-1.

<b>Table 4.6-1 Estimated Construction Emissions Tons/year</b>						
<b>Emission Source</b>	<b>CO</b>	<b>VOCs</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Fugitive Dust	-	-	-	-	0.22	0.045
Heavy Equipment Exhaust	51.33	1.32	41.67	6.02	2.52	2.15
Worker Travel – Vehicle Emissions	11.33	0.72	0.72	0.02	0.01	0.01
Construction Truck Emissions	0.30	0.11	1.45	0.00	0.06	0.06
<b>TOTAL</b>	<b>62.96</b>	<b>2.15</b>	<b>43.84</b>	<b>6.04</b>	<b>2.81</b>	<b>2.265</b>
De Minimis Threshold <sup>a</sup>	100	N/A	N/A	N/A	100	100
<i>Above Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

<sup>a</sup>For nonattainment pollutant PM<sub>2.5</sub> and maintenance pollutants CO and PM<sub>10</sub>.

1 As discussed in Section 3.6.2, Federal actions may be exempt from conformity  
 2 determinations if they do not exceed designated *de minimis* levels for criteria pollutants  
 3 (40 CFR Part 51.853(b)). Under the provisions of 40 CFR 93.153(c)(2)(xix), actions  
 4 which would result in no emissions increase or an increase in emissions that is clearly de  
 5 minimis, including “actions (or portions thereof) associated with transfers of land,  
 6 facilities, title, and real properties through an enforceable contract or lease agreement  
 7 where the delivery of the deed is required to occur promptly after a specific, reasonable  
 8 condition is met, such as promptly after the land is certified as meeting the requirements  
 9 of CERCLA, and where the Federal agency does not retain continuing authority to  
 10 control emissions associated with the lands, facilities, title, or real properties” are also  
 11 exempt from the provisions of 40 CFR 93.153.

12 As shown in Table 4.6-1, construction emissions would be below the *de minimis*  
 13 thresholds for maintenance pollutants CO and PM<sub>10</sub>, and below major source thresholds  
 14 of 100 tons per year for all other pollutants. Construction emissions would be temporary,  
 15 and would not result in a significant impact on air quality.

16 Operational emission estimates were based on assuming that a fraction of the activity on  
 17 the YTTI, TOTE and RRI sites would occur on the NMCRC site. While only a portion  
 18 of the 9.03-acre (3.65-ha) site would be used for intermodal yard/container yard  
 19 operations, for conservative purposes, it was assumed that the entire 9.03-acre (3.65-ha)  
 20 site could be used by rail, heavy-duty trucks, cargo-handling equipment, or fleet vehicles.  
 21 Emissions from these operations were assumed to be proportional to the emissions from  
 22 the entire site.

1 Emissions were based on the *DRAFT Air Quality Discipline Report: Blair-Hylebos*  
 2 *Terminal Redevelopment Project* (Widener and Associates, et al 2008), which is based on  
 3 emission factors from the Puget Sound Maritime Air Emission Inventory (PSMAEI).  
 4 According to the report, the TOTE terminal operations are expected to be unchanged by  
 5 the Redevelopment Project and the relocated terminal is anticipated to have no increase  
 6 in throughput capacity. It was therefore assumed that, while TOTE terminal operations  
 7 would potentially be relocated to the NMCRC site, the relocation would not result in any  
 8 emission increases. Emissions associated with the RRI include rail and truck emissions  
 9 traveling on that portion of the rail and roadways that would be on the site, and those rail  
 10 and truck emissions generated from site operations.

11 Based on a comparison of the acreage of the NMCRC site with the entire YTTI site (9.03  
 12 acres [3.65-ha] vs. 167 acres [68-ha]), it was assumed that emissions associated with  
 13 activities on the NMCRC site from development as a container terminal would be  
 14 approximately five percent of the emissions from the overall YTTI site for RLs, CHE,  
 15 HDVs, and FVs. Based on this assumption, Table 4.6-2 presents a summary of the  
 16 anticipated annual emissions associated with reuse of the NMCRC site. It should be  
 17 noted that the report did not include emission calculations for VOCs.

<b>Table 4.6-2 Estimated Operational Emissions, Proposed Action Tons/year</b>					
<b>Emission Source</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Cargo Handling Equipment	3.77	10.23	0.016	0.23	0.20
Locomotives	1.30	6.88	0.0054	0.032	0.028
On-Terminal HDV	0.092	0.16	0.00054	0.00054	0.00053
<b>TOTAL</b>	<b>5.162</b>	<b>17.27</b>	<b>0.02194</b>	<b>0.26254</b>	<b>0.22853</b>
De Minimis Threshold <sup>a</sup>	100	N/A	N/A	100	100
<i>Above Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

<sup>a</sup>For nonattainment pollutant PM<sub>2.5</sub> and maintenance pollutants CO and PM<sub>10</sub>.

18 As shown in Table 4.6-2, emissions associated with the redevelopment of the NMCRC  
 19 site would be below the *de minimis* thresholds for CO and PM<sub>10</sub>, and would be below  
 20 major source thresholds for all other pollutants. Emissions would therefore not result in a  
 21 significant impact on air quality. Therefore, no mitigation measures are proposed or  
 22 required.

23 As described above, emissions produced as a result of the proposed action are well below  
 24 any thresholds that could impact air quality in any of the affected states. Therefore, no  
 25 mitigation measures are required to reduce air emissions. As shown in Tables 4.6-1 and  
 26 4.6-2, emissions associated with implementation of the proposed action would result in  
 27 increases in air emissions above baseline conditions due to construction and operations.

1 Emission increases are associated with the use of RLs, CHE, HDVs, and FVs on the  
2 NMCRC site as part of the emission increases associated with the YTTI Container  
3 Terminal. Although the proposed action would result in increases in emissions of air  
4 pollutants, it is not anticipated that they would result in exceedances of the air quality  
5 standards as discussed previously in this section.

6 Because the proposed action is exempt from the provisions of 40 CFR 93.153 based on  
7 emissions that are de minimis, and the proposed action is a transfer of land, facilities,  
8 title, and real properties through an enforceable contract or lease agreement where the  
9 delivery of the deed is required to occur promptly after a specific, reasonable condition is  
10 met, such as promptly after the land is certified as meeting the requirements of CERCLA,  
11 and where the Federal agency does not retain continuing authority to control emissions  
12 associated with the lands, facilities, title, or real properties, a Record of Non-  
13 Applicability (RONA) has been prepared for the proposed action and no further  
14 demonstration of conformity is required. The RONA is included in Appendix C of this  
15 EA.

### 16 **4.6.3 Alternative 1**

17 Alternative 1 represents redevelopment of the NMCRC Tacoma site in accordance with  
18 the probable land uses and levels of activity under existing industrial zoning should the  
19 Port not move forward with its master redevelopment program for the Blair Peninsula.  
20 Under this alternative, it is assumed that some level of redevelopment would occur on the  
21 Blair Peninsula through the buildout horizon year (2013), including the development of  
22 two new cargo and container terminals, retention of the TOTE operations at its current  
23 terminal, additional auto/break bulk storage and improvements at the Washington United  
24 Terminals. Under Alternative 1, Taylor Way would be extended through the NMCRC  
25 site in the same alignment as the Proposed Action. There would be no rail improvements  
26 on the NMCRC Tacoma site.

27 Under Alternative 1, emissions associated with demolition of existing NMCRC buildings  
28 would remain the same as presented under the Proposed Action (Table 4.6-1).  
29 Operational emissions would be less than the emissions anticipated under the Proposed  
30 Action as under Alternative 1, the container yard would have a maximum throughput of  
31 300,000 twenty-foot equivalent units (TEU) per year. While on-site rail improvements  
32 would not be constructed on the NMCRC Tacoma site, emissions associated with rail  
33 would be associated with transport of cargo from NMCRC portion of the site.

34 Based on a comparison of the acreage of the NMCRC site with the entire YTTI site (9.03  
35 acres [3.65-ha] vs. 167 acres [68-ha]), it was assumed that emissions associated with  
36 Alternative 1 activities on the NMCRC site from development as a container terminal  
37 would be approximately five percent of the emissions from the overall YTTI site for RLs,  
38 CHE, HDVs, and FVs. Based on this assumption, Table 4.6-3 presents a summary of the  
39 anticipated annual emissions associated with reuse of the NMCRC site. It should be  
40 noted that the report did not include emission calculations for VOCs.

<b>Table 4.6-3 Estimated Operational Emissions, Alternative 1 Tons/year</b>					
<b>Emission Source</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
Cargo Handling Equipment	3.59	6.03	0.005	0.23	0.20
Locomotives	0.22	1.18	0.0	0.04	0.04
On-Terminal HDV	0.02	0.03	0.0	0.0	0.0
<b>TOTAL</b>	<b>3.83</b>	<b>7.24</b>	<b>0.005</b>	<b>0.27</b>	<b>0.24</b>
De Minimis Threshold <sup>a</sup>	100	N/A	N/A	100	100
<i>Above Thresholds?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

<sup>a</sup>For nonattainment pollutant PM<sub>2.5</sub> and maintenance pollutants CO and PM<sub>10</sub>.

1 As shown in Table 4.6-3, emissions associated with Alternative 1 would be below the *de*  
 2 *minimis* thresholds for CO and PM<sub>10</sub>, and would be below major source thresholds for all  
 3 other pollutants. Emissions would therefore not result in a significant impact on air  
 4 quality. Therefore, no mitigation measures are proposed or required.

#### 5 **4.6.4 No Action Alternative**

6 As discussed in Section 2.4.3, under the No Action Alternative, the Navy would retain  
 7 ownership of the NMCRC. After the facility is closed in 2010, all buildings would remain  
 8 vacant and all facilities would remain unused.

9 Because no construction or operational activities would occur under this alternative, no  
 10 air emissions would result from the No Action Alternative. The No Action Alternative  
 11 would therefore not result in any impacts on the air quality in the area.

## 1    **4.7    NOISE**

2    This section describes potential noise impacts associated with the proposed action and  
3    alternatives, including effects to off-site sensitive receptors. Factors used to identify and  
4    evaluate significant potential noise impacts include determining whether the proposed  
5    action and alternatives would:

- 6        1. Expose sensitive receptors to noise levels that exceed established standards or  
7        guidelines;
- 8        2. Permanently and noticeably increase ambient noise in a manner that could affect  
9        the use and enjoyment of adjacent areas or facilities;
- 10       3. Locate a noise sensitive reuse such that it is negatively affected by existing or  
11       projected noise levels; or
- 12       4. Result in temporary noise levels in excess of established standards or guidelines.

### 13    **4.7.1    Proposed Action**

14    The proposed action would entail the following activities: (1) demolition of existing on-  
15    site facilities including seven buildings, all or part of the existing paved parking lots and  
16    access roads, minor landscaping and associated features (e.g., signs and fences), and  
17    portions of the existing utility systems; (2) re-grading the site and placement of fill to  
18    raise the on-site elevation (along with the rest of the Port redevelopment project area) by  
19    approximately 1 to 4 feet (0.3 to 1.2 meters); and (3) redevelopment of the site as part of  
20    the overall Port redevelopment project.

21    The following evaluations of potential noise related impacts from the described activities  
22    are based on assumptions including the amount of demolition required, the estimated  
23    construction timeframe (2011 through 2013), and estimated equipment and workforce  
24    requirements. It should also be noted that the accuracy of calculated noise levels at  
25    distances greater than approximately 500 feet (150 meters) is greatly reduced due to  
26    atmospheric, topographic, and/or reflective considerations. Based on these  
27    considerations and the fact that the closest sensitive noise receptor is approximately 775  
28    feet (236 meters) from the NMCRC site, calculated noise levels are based on a distance  
29    of 500 feet (152 meters) to improve accuracy and provide a more conservative analysis.

### 30    **Demolition**

31    Demolition-related noise was estimated using the FHWA national model for the  
32    prediction of construction noise. The FHWA prediction model utilizes an “acoustical  
33    usage factor” to estimate the fraction of time each piece of construction equipment is  
34    operating at full power (i.e., its loudest condition) during a given construction operation.  
35    The analysis is based on a table of equipment noise levels depicting A-weighted  
36    maximum sound levels ( $L_{MAX}$ ) at a distance of 50 feet (15.2 meters) from the  
37    construction equipment.

1 As previously noted, proposed demolition would include all seven on-site buildings, as  
2 well as pavement and related facilities. The two largest on-site buildings are NCHB5 and  
3 Administration Building 55, with NCHB5 consisting of a steel-framed structure and  
4 Building 55 composed of a poured in-place concrete facility with a concrete “Flying-  
5 Buttress” exterior support system. Specific demolition activities would likely include the  
6 use of a “breaker” at Building 55, with other probable demolition and cleanup equipment  
7 including a dozer, loader, skid-steer, and dump trucks. The use of a breaker (and related  
8 equipment) at Building 55 would represent the worst case noise level scenario for off-site  
9 noise sensitive receptors, even though other on-site demolition activities would be closer  
10 to the off-site receptors (due to the high noise levels associated with breaker operation).  
11 Specifically estimated noise levels at a distance of 500 feet (152 meters) from the  
12 operation of a breaker would be less than 70 dBA  $L_{MAX}$ . Demolition operations are  
13 subject to regulatory controls provided in the City of Tacoma Noise Standards. As noted  
14 in Section 3.7.1, the City of Tacoma construction standards state that: (1) equipment shall  
15 incorporate mufflers when appropriate (and commonly available); and (2) construction  
16 activities conducted between the hours of 7:00 AM and 9:00 PM on weekdays, and  
17 between the hours of 9:00 AM. and 9:00 PM on weekends, are exempt from ordinance  
18 level limitations. Because demolition activities conducted under the proposed action are  
19 anticipated to conform with the noted requirements, associated noise impacts would not  
20 be significant.

## 21 **Construction**

22 Construction-related noise was estimated using similar methods as described above for  
23 demolition. Specifically, site construction would include the installation and or  
24 modification of the following: (1) utilities; (2) fill and paved surfaces covering the entire  
25 NMCRC site; (3) portions of the YTTI rail yard and main gate; (4) portions of the  
26 proposed Taylor Way re-alignment extension; and (5) portions of the TOTE vessel  
27 maintenance area. Anticipated equipment requirements for these activities include one or  
28 more excavators, dozers, loaders, graders, backhoes, skid-steers, and dump trucks (with  
29 no form of pile driving proposed). The worst case noise level scenario for off-site noise  
30 sensitive receptors from the described construction activities would be the simultaneous  
31 operation of heavy equipment including excavators, loaders, and dozers. Estimated noise  
32 levels from such activity at a distance of 500 feet (152 meters) from the described  
33 equipment operations would be less than 79 dBA  $L_{MAX}$ . Construction activities are  
34 subject to the City of Tacoma noise standards as described above for demolition.  
35 Because construction activities conducted under the proposed action are anticipated to  
36 conform with the noted City of Tacoma requirements, associated noise impacts would not  
37 be significant.

## 38 **Operation**

39 Noise generation related to operation of the NMCRC site would be associated with  
40 vehicular traffic along the re-alignment extension of Taylor Way, rail traffic along the  
41 intermodal railroad, and vehicular/equipment use associated with a container handling  
42 area for the Intermodal Yard.

### 1 Taylor Way

2 The realigned roadway would extend across the northern edge of the NMCRC site for a  
3 distance of approximately 225 feet (69 meters). Projected peak hour traffic levels along  
4 this roadway segment are 146 vehicles traveling north and 283 vehicles traveling south,  
5 for a total peak hour traffic volume of 429 vehicles. The closest noise sensitive receptor  
6 to the on-site segment of Taylor Way is approximately 750 feet (236 meters) to the  
7 northwest. Estimated noise levels from the described peak hour roadway operations at a  
8 distance of 500 feet (152 meters) are approximately 45.5 dBA  $L_{EQ}$ . Assuming a normal  
9 traffic distribution pattern, the daily CNEL and  $L_{DN}$  at 500 feet from the on-site roadway  
10 segment would also be approximately 45.5 dBA. Because these projected noise levels are  
11 below the FHWA/WSDOT noise abatement criterion of 67 dBA identified in Section 3.7  
12 (as well as the fact that noise levels at the nearest noise sensitive receptor would likely be  
13 lower due to the greater intervening distance), associated noise impacts would not be  
14 significant.

### 15 Intermodal Railroad Yard

16 The intermodal railroad would encompass six sets of tracks, and would cross the site  
17 within a narrow (45-foot [13.7-meter]) strip of roadway located between the southern  
18 buildings and the docks. Estimated noise levels from on-site railway operations are based  
19 on the following assumptions: (1) 5 train trips per track during daylight hours; (2) 3 train  
20 trips per track during evening hours; (3) 5 train trips per track during nighttime hours;  
21 (4) all on-site trains travelling at a speed of 2.5 miles per hour (4 kilometers per hour);  
22 and (5) the nearest noise sensitive receptor to the described railway operations is  
23 approximately 1,000 feet (300 meters) to the north. Based on these assumptions,  
24 estimated noise levels for the described railway operations would be below 10 dBA  $L_{MAX}$   
25 and 15 CNEL ( $L_{DN}$ ) at 500 feet (152 meters). Because these projected noise levels are  
26 below the FHWA/WSDOT noise abatement criterion of 67 dBA identified in Section 3.7  
27 (as well as the fact that noise levels at the nearest noise sensitive receptor would likely be  
28 lower due to the greater intervening distance), associated noise impacts would not be  
29 significant.

### 30 Container Handling Area/Intermodal Yard

31 The portion of the site located west of the intermodal railroad tracks would be used as a  
32 portion of the container handling area for the Intermodal Yard. Specific operations at this  
33 site would include the use of forklifts to load and unload cargo containers. The nearest  
34 noise sensitive receptor to this area is approximately 1,250 feet (380 meters) to the north.  
35 Estimated noise levels associated with described operations at the intermodal yard area  
36 are based on 2 forklifts working simultaneously for 15 minutes per hour during the day,  
37 and 7.5 minutes per hour during the evening, with no nighttime operations. Based on  
38 these assumptions, estimated noise levels for the described forklift operations would be  
39 approximately 46 dBA  $L_{MAX}$  at a distance of 500 feet (152 meters). Because these  
40 projected noise levels are below the FHWA/WSDOT noise abatement criterion of 67  
41 dBA identified in Section 3.7 (as well as the fact that noise levels at the nearest noise  
42 sensitive receptor would likely be lower due to the greater intervening distance),  
43 associated noise impacts would not be significant.

## 1 **Summary of Proposed Action Noise Impacts**

2 Proposed demolition/construction activities and site operations would conform with all  
3 applicable regulatory requirements, including schedules and noise abatement criteria.  
4 Accordingly, no significant noise impacts would be associated with implementation of  
5 the proposed action, and no related mitigation is required.

### 6 **4.7.2 Alternative 1**

#### 7 **Demolition**

8 Demolition activities and associated potential noise impacts for this alternative would be  
9 the same as those described above for the proposed action. Because proposed demolition  
10 activities are anticipated to conform with all applicable regulatory requirements (as  
11 described above for the proposed action), associated noise impacts from Alternative 1  
12 would not be significant.

#### 13 **Construction**

14 Construction operations and associated potential noise impacts for this alternative would  
15 be the same as those described above for the proposed action with respect to grading and  
16 fill placement, addition/modification of storm drain facilities, installation of paved  
17 surfaces within the entire site, and construction of the on-site segment of Taylor Way.  
18 Because noise generation from the described construction activities are anticipated to  
19 conform with all applicable regulatory requirements (as described above for the proposed  
20 action), associated noise impacts from Alternative 1 would not be significant, and no  
21 mitigation is required.

#### 22 **Operation**

23 Operation-related noise generation from Alternative 1 would be associated with vehicular  
24 traffic along the re-alignment extension of Taylor Way, and vehicular/equipment use  
25 associated with cargo storage and handling. Traffic-related noise impacts along Taylor  
26 Way for this alternative would be identical to those described for the proposed action,  
27 which were concluded to be less than significant. Cargo storage and handling activities  
28 under this alternative would be essentially the same as those described for the proposed  
29 action, based on the fact that they would encompass virtually the same area and related  
30 vehicle/equipment use. As described above in Section 4.7.1, potential noise impacts  
31 associated with these activities were determined not to be significant, and no mitigation is  
32 required.

### 33 **4.7.3 No Action Alternative**

34 Because no demolition, construction or operational activities would occur under this  
35 alternative, no noise sources would be in operation within the NMCRC site or along  
36 adjacent roadways. Accordingly, this alternative would not result in the generation of  
37 any noise impact.

## 1    **4.8    BIOLOGICAL RESOURCES**

2    Biological resources addressed in this section include sensitive species, sensitive habitats, critical  
3    habitat, EFH, special aquatic sites, and MBTA protected species. Effects on biological resources  
4    from the proposed action or alternatives to the proposed action can be direct or indirect and  
5    temporary or permanent. These types of effects are defined below.

- 6    • *Direct*: Any alteration, disturbance, or destruction of biological resources that will result  
7    from action-related activities is considered a direct impact. Examples include encroachment  
8    into wetlands, diversion of surface water flows, and the loss of individual species and/or their  
9    associated habitats. Direct impacts are defined as the immediate impacts of an action on a  
10   species or its habitat, including construction noise disturbance, sedimentation, or habitat loss.
- 11   • *Indirect*: As a result of action-related activities, biological resources may also be affected in  
12   an indirect manner. Indirect effects are defined as those effects that are caused by, or will  
13   result from, an action later in time, but are still reasonably certain to occur. Examples of  
14   indirect effects may include increased foot or vehicular traffic following completion of  
15   construction.
- 16   • *Temporary*: Reversible effects of an action on biological resources are viewed as temporary.  
17   Examples of temporary effects include the generation of fugitive dust during construction or  
18   the removal of habitat for construction activities with subsequent restoration of that habitat  
19   following construction.
- 20   • *Permanent*: All effects that result in the irreversible removal of biological resources are  
21   considered permanent. Examples include constructing a building or permanent road on an  
22   area containing biological resources.

23   Furthermore, factors considered in determining whether an action would have significant effects  
24   on biological resources include the extent or degree to which its implementation would:

- 25   • Adversely affect sensitive species including those listed or proposed for listing as threatened  
26   or endangered under the ESA (16 U.S.C. §§ 1531-1534), marine mammals afforded  
27   protection under the MMPA (16 U.S.C. §§ 1361-1421h), migratory birds afforded protection  
28   by the MBTA (16 U.S.C. §§ 703-712) and Executive Order 13186, or other species of  
29   concern.
- 30   • Degrade or destroy designated critical habitat as defined by the ESA or EFH as defined by  
31   the MSA.
- 32   • Damage wetlands or other special aquatic sites afforded protection under the CWA.

### 33    **4.8.1 Proposed Action**

#### 34    **Direct Impacts**

35    The proposed action would have potential, direct, temporary water quality impacts on Hylebos  
36    and Blair waterways related to construction that include erosion/sedimentation, the on-site use

1 and storage of construction-related hazardous materials (e.g., fuels, etc.), generation of debris  
2 from demolition activities, and the disposal of extracted groundwater (if required). (See  
3 Subsection 4.10.1 of this EA for a discussion of water resource effects.) The degradation of  
4 water quality in these waterways could adversely affect sensitive species, critical habitat, and  
5 EFH and are described below.

6 There are no biological resources associated with the terrestrial portions of the ROI, so the  
7 proposed action would have no direct impact on them.

8 There are 11 sensitive species that have potential to occur in Hylebos and Blair waterways in the  
9 ROI: Chinook salmon, coho salmon, steelhead, bull trout, Pacific herring, marbled murrelet, bald  
10 eagle, peregrine falcon, humpback whale, killer whale, and steller sea lion. Additionally, there is  
11 Chinook salmon, bull trout, and killer whale critical habitat in Hylebos and Blair waterways in  
12 the ROI. Finally, there is groundfish, Chinook, and coho salmon EFH in Hylebos and Blair  
13 waterways in the ROI.

14 The environment of these sensitive species (including critical habitat and EFH), as well as these  
15 species individually, could be adversely affected as a result of degradation of water quality if the  
16 proposed action results in the release of contaminants (e.g., chemicals, oils) into Hylebos or Blair  
17 waterways. These adverse effects can include, for example, compromised ability of fishes to  
18 reproduce and fight disease, and the contaminants can be toxic to fish causing death (Svobodová  
19 et al. 1993). Furthermore, affected fish that are eaten by other animals (i.e., other fish, birds, and  
20 mammals such as those with potential to occur in the ROI) can cause adverse effects on the  
21 health of those animals such as compromising their ability to successfully reproduce and fight  
22 disease (Fisheries and Oceans Canada 2008).

23 It should be noted that Commencement Bay (and, therefore, Hylebos and Blair waterways that  
24 are directly connected with Commencement Bay) is part of a Superfund site established by the  
25 USEPA in 1983 due to widespread contamination of the water, sediments, and upland areas from  
26 historic industrial activities (Grette Associates<sup>LLC</sup> 2008).

27 Potential water quality impacts would be addressed through required conformance with the  
28 NPDES Construction Discharge Permit (and related local standards) described in Section 3.10 of  
29 this EA. Specifically, this would entail the preparation and implementation of a SWPPP and  
30 related monitoring/maintenance efforts to identify appropriate BMPs and ensure that applicable  
31 water quality standards are met. Subsection 4.10.1 provides examples of general measures that  
32 would likely be applicable to the proposed action.

33 Based on conformance with the applicable regulatory requirements, potential construction-  
34 related erosion/sedimentation, demolition debris, and hazardous materials would not violate  
35 associated water quality standards or requirements and would not cause significant water quality  
36 impacts on Hylebos and Blair waterways and the biological resources associated with them. No  
37 related mitigation is necessary or proposed.

38 There are no sensitive habitats (other than the critical habitat described above) or special aquatic  
39 sites in the ROI, so there would be no impacts to these biological resources from the proposed  
40 action.

1 Take of MBTA protected species could occur if these species nest in the ROI, and either nesting  
2 behavior is disrupted by human activity during construction or a nest is actually destroyed during  
3 construction. Since the terrestrial portions of the ROI consist entirely of industrial land, there is  
4 low potential that any bird species, even those adapted to such conditions, would nest there. One  
5 possible exception may be the rock dove, but the rock dove is not protected by the MBTA  
6 (USFWS 2005b). The marbled murrelet spends most of its life at sea and breeds off shore in  
7 forests outside the ROI, so it would not be taken during construction of the proposed action. The  
8 bald eagle nests in large trees not subjected to intense human activity; such trees are not present  
9 in the ROI. Therefore, the bald eagle would not be taken during construction of the proposed  
10 action. The peregrine falcon can nest in industrial environments on tall buildings, but the tallest  
11 building in the ROI is only two stories high. Therefore, the peregrine falcon is not expected to  
12 nest in the ROI and would not be taken during construction of the proposed action.

### 13 **Indirect Impacts**

14 The proposed action also has the potential to result in indirect, permanent water quality impacts  
15 on Hylebos and Blair waterways during long-term operation and maintenance related to the  
16 generation and off-site discharge of urban contaminants as described in subsection 4.10.1 of this  
17 EA. The degradation of water quality in these waterways could adversely affect sensitive  
18 species, critical habitat, and EFH as described above for Direct Impacts.

19 There are no biological resources associated with the terrestrial portions of the ROI, so the  
20 proposed action would have no indirect impacts on them.

21 Long-term operation and maintenance associated with the proposed action would be subject to  
22 applicable requirements of the Phase 1 NPDES Permit described in Section 3.10 of this EA, as  
23 well as the NPDES General Industrial Permit for pertinent activities/facilities (i.e., if such  
24 activities/facilities are proposed). As noted in Section 3.10, conformance with the Phase I  
25 Permit would entail appropriate prevention, control, and treatment measures, including  
26 development of a Stormwater Management Program and implementation, monitoring and  
27 maintenance of associated BMPs. Subsection 4.10.1 of this EA provides examples of general  
28 measures that would likely be applicable to the proposed action.

29 Based on conformance with the applicable regulatory requirements, potential long-term  
30 operation and maintenance impacts (i.e., generation and off-site discharge of urban  
31 contaminants) would not violate associated water quality standards or requirements and would  
32 not cause significant impacts on Hylebos and Blair waterways and the biological resources  
33 associated with them. Therefore, no related mitigation is necessary or proposed.

### 34 **4.8.2 Alternative 1**

#### 35 **Direct Impacts**

36 Alternative 1 would have essentially the same potential, direct, temporary water quality impacts  
37 on Hylebos and Blair waterways as those described for the proposed action. Accordingly,  
38 potential impacts associated with erosion/sedimentation, construction-related hazardous material  
39 use/storage, and demolition-related debris would be less than significant, assuming conformance  
40 with all applicable regulatory requirements (as described for the proposed action). Since no

1 significant water quality effects would occur from construction under this alternative, related  
2 mitigation is not necessary or proposed.

### 3 **Indirect Impacts**

4 Alternative 1 would have essentially the same potential, indirect, permanent water quality effects  
5 impacts on Hylebos and Blair waterways as those described for the proposed action based on the  
6 fact that both development options would entail development of the entire NMCRC Tacoma site  
7 for urban and/or industrial type uses. Specifically, the types of contaminants and conditions of  
8 concern under this alternative would be similar to those described for the proposed action. While  
9 individual BMPs to address these issues could vary somewhat, long-term operation and  
10 maintenance under either development option would require conformance with applicable  
11 regulatory guidelines that would effectively avoid associated significant water quality effects.  
12 Since no significant water quality effects would occur from long-term operation and maintenance  
13 under this alternative, related mitigation is not necessary or proposed.

14 Like the proposed action, Alternative 1 would have no impacts on sensitive habitats, special  
15 aquatic sites, and MBTA protected species.

### 16 **4.8.3 No Action Alternative**

17 Under the No Action Alternative, NMCRC Tacoma would remain vacant after closure, and all  
18 facilities would remain unused. The property would be held in inactive or caretaker status. None  
19 of the potential water quality-related effects to Hylebos and Blair waterways from demolition,  
20 grading and redevelopment/reuse of the NMCRC Tacoma site described for the proposed action  
21 and Alternative 1 would occur under the No Action Alternative. Therefore, there would be no  
22 impacts on biological resources under the No Action Alternative.

## 1    **4.9    GEOLOGY AND GEOLOGIC HAZARDS**

2    This section describes potential geologic and geologic hazard impacts associated with the  
3    proposed action and alternatives, including effects to or from unique geologic or topographic  
4    features; seismic-related ground rupture, ground shaking, liquefaction/lateral spreading, and  
5    settlement; non-seismic landslides and settlement; and volcanic hazards. Potential effects  
6    associated with erosion/sedimentation and earthquake- or landslide-induced tsunamis are  
7    discussed in Section 4.10, Water Resources. Factors used to identify and evaluate significant  
8    potential geology and geologic hazard impacts include determining whether the proposed action  
9    and alternatives would:

- 10       1. Adversely affect unique geologic or topographic features; or
- 11       2. Increase exposure of people, structures, or infrastructure to risk of catastrophic loss,  
12         injury or death from seismic-related rupture of a known earthquake fault, ground shaking,  
13         liquefaction/lateral spreading, or settlement; non-seismic landsliding or settlement; or  
14         volcanic hazards.

### 15    **4.9.1 Proposed Action**

#### 16    **Alteration of Unique Geologic or Topographic Features**

17    As described in Section 3.9, the NMCRC site is site essentially level and predominantly (over 90  
18    percent) covered with existing pavement and structures. The remaining areas encompass minor  
19    landscaping, graded/unpaved parcels, or open water in the Hylebos Waterway. Based on the  
20    described conditions and the fact that no development/disturbance would occur within or  
21    immediately adjacent to the Hylebos Waterway from the proposed action, no significant impacts  
22    to unique geologic or topographic features would result. Accordingly, no related mitigation is  
23    necessary or proposed.

#### 24    **Seismic-related Hazards**

25    Potential impacts from the proposed action associated with seismic-related hazards include  
26    ground rupture, ground shaking, liquefaction/lateral spreading, and settlement, as outlined below.

##### 27    Ground Rupture

28    As described in Section 3.9, the potential for seismically-induced ground rupture within the  
29    NMCRC site is low, based on the fact that no known active fault segments are located within or  
30    immediately adjacent to the site. While such potential impacts cannot be completely discounted  
31    (e.g., ground rupture could conceivably occur along currently unknown faults within the site),  
32    the potential for such effects is considered low and associated potential impacts are less than  
33    significant. Accordingly, no related mitigation is necessary or proposed.

##### 34    Ground Shaking

35    Based on the geologic and seismic setting descriptions provided in Section 3.9, the NMCRC site  
36    and vicinity is potentially subject to moderate to severe ground shaking from larger earthquake

1 events along regional and local faults. The described fill deposits within the site could also  
2 potentially amplify earthquake ground motions at various frequencies, resulting in increased  
3 levels of local ground shaking. In addition to the liquefaction/lateral spreading and settlement  
4 impacts discussed below, ground shaking can directly affect the integrity of surface and  
5 subsurface structures such as buildings, roads, utilities and foundations. The proposed action  
6 would incorporate a number of standard design and construction measures to address potential  
7 ground shaking impacts, including implementing recommendations from associated geotechnical  
8 and/or engineering analyses, and conformance with applicable criteria such as local building and  
9 grading codes, the American Association of State Highway and Transportation Officials  
10 (AASHTO), the American Railway Engineering Maintenance-of-Way Association (AREMA),  
11 the Uniform Building Code (UBC), ASTM International, and other applicable regulatory or  
12 industry standards. While specific measures would be determined during facility design based  
13 on site-specific conditions, examples of general measures that would likely be applicable to the  
14 proposed action include the following recommendations from the Blair-Hylebos Terminal  
15 Redevelopment Project Earth/Geology Discipline Report (GeoEngineers 2008a), as well as other  
16 applicable sources:

- 17 • Incorporating applicable seismic design criteria, including consideration of acceleration  
18 values, seismic zone, subsurface profile types, seismic and near-source coefficients for  
19 acceleration and velocity, and seismic source.
- 20 • Using appropriate foundation types/designs for proposed facilities, potentially including  
21 deep-foundation piles or drilled shafts.
- 22 • Installing anchors or other means for securing applicable structures.
- 23 • Using properly engineered fill, including consideration of parameters such as  
24 composition, depth, moisture content and compaction.
- 25 • Using properly reinforced concrete and masonry.

26 Based on the described conformance with geotechnical/engineering recommendations and  
27 applicable regulatory and/or industry standards, potential seismic-related ground shaking impacts  
28 associated with implementation of the proposed action would not be significant. Accordingly, no  
29 related mitigation is necessary or proposed.

### 30 Liquefaction/Lateral Spreading

31 As discussed in Section 3.9, the NMCRC site and vicinity include a number of areas with  
32 moderate or high potential for the occurrence of seismically induced liquefaction/lateral  
33 spreading. A number of structures and facilities associated with the proposed action could be  
34 affected by such phenomena, including buildings, pavement, rail lines, foundations/footings, and  
35 utilities. The proposed action would incorporate a number of standard design and construction  
36 measures to address potential liquefaction/lateral spreading impacts, including implementing  
37 recommendations from associated geotechnical and/or engineering analyses, and conformance  
38 with applicable regulatory/industry criteria similar to those noted in the discussion of potential  
39 ground shaking effects. While specific measures would be determined during facility design

1 based on site-specific conditions, examples of general measures that would likely be applicable  
2 to the proposed action include similar recommendations regarding seismic parameters and  
3 foundation/fill design as noted above for ground shaking, as well as the following  
4 recommendations from the referenced geotechnical report and other applicable sources:

- 5 • Implementing soil improvements to eliminate or reduce liquefaction potential (e.g., soil  
6 densification through vibro-replacement [stone column] or soil grouting techniques).
- 7 • Using surface grading methods and/or subdrains to avoid saturation of near-surface  
8 deposits.
- 9 • Replacing liquefiable soils with engineered fill.

10 Based on the described conformance with geotechnical/engineering recommendations and  
11 applicable regulatory and/or industry standards, potential seismic-related liquefaction/lateral  
12 spreading impacts associated with implementation of the proposed action would not be  
13 significant. Accordingly, no related mitigation is necessary or proposed.

#### 14 Settlement

15 Seismically induced settlement is associated with ground shaking and/or liquefaction as  
16 described above, and can result in similar effects related to surface and subsurface facilities such  
17 as buildings, pavement, foundations/footings and utilities. The proposed action would  
18 incorporate similar types of standard design and construction measures to address potential  
19 seismic settlement impacts as noted above for ground shaking and liquefaction/lateral spreading,  
20 as well as the following recommendation from the referenced geotechnical report:

- 21 • Using lightweight fill (geofoam) in applicable locations to eliminate or reduce  
22 seismically-induced settlement potential.

23 Based on the described conformance with geotechnical/engineering recommendations and  
24 applicable regulatory and/or industry standards, potential seismically induced settlement impacts  
25 associated with the proposed action would not be significant. Accordingly, no related mitigation  
26 is necessary or proposed.

#### 27 **Non-seismic Hazards**

28 Potential impacts from the proposed action associated with non-seismic hazards include  
29 landsliding and settlement, as outlined below.

#### 30 Landsliding

31 Based on the essentially level nature of the NMCRC site and the fact that implementing the  
32 proposed action would not result in notable on-site slopes, no associated significant impacts  
33 related to landsliding would occur.

## 1 Settlement

2 Non-seismic settlement can occur as a result from the compression of surficial materials under  
3 load (i.e., from placement of buildings and other improvements). Non-seismic and/or differential  
4 settlement (i.e., varying degrees of settlement over short distances) can result in similar impacts  
5 related to surface and subsurface facilities such as buildings, pavement, foundations/footings and  
6 utilities as described above for seismic ground shaking, liquefaction and settlement. The  
7 proposed action would incorporate similar types of standard design and construction measures to  
8 address potential non-seismic settlement impacts as noted above for seismic hazards, as well as  
9 potentially using methods such as surcharge loading and settlement monitoring. Specifically,  
10 this would involve artificially loading graded areas to induce settlement prior to development of  
11 buildings or other improvements, and associated use of settlement monuments/monitoring to  
12 determine when adequate settlement has occurred to allow development to proceed.

13 Based on the described conformance with geotechnical/engineering recommendations and  
14 applicable regulatory and/or industry standards, potential non-seismic settlement impacts  
15 associated with the proposed action would not be significant. Accordingly, no related mitigation  
16 is necessary or proposed.

## 17 **Volcanic Hazards**

18 As described in Section 3.9, potential volcanic hazards identified in the referenced geotechnical  
19 report are associated with a volcanic debris flow (or lahar) from an eruption at Mt. Rainer that  
20 could potentially reach the NMCRC site under certain conditions. While a catastrophic lahar  
21 event originating at Mt. Rainer could substantially affect the NMCRC site and surrounding Port  
22 facilities, these potential impacts are considered less than significant based on the following  
23 considerations: (1) the probability of a catastrophic lahar event that would result in substantial  
24 effects to the Port area and NMCRC site is considered low; (2) early warning and evacuation  
25 plans related to volcanic hazards are currently in place for Pierce County (including the Port area  
26 and NMCRC site); and (3) implementation of the proposed action would not increase potential  
27 lahar-related impacts relative to the existing condition (i.e., the existing site and facilities are  
28 subject to the same lahar hazards that would be associated with the proposed action). Because  
29 no significant impacts are identified in association with lahar hazards under the proposed action,  
30 related mitigation is not proposed.

## 31 **4.9.2 Alternative 1**

### 32 **Alteration of Unique Geologic or Topographic Features**

33 No significant impacts to unique geologic or topographic features would result from this  
34 alternative, for similar reasons as noted above for the proposed action. Accordingly, no related  
35 mitigation is necessary or proposed.

### 36 **Seismic-related Hazards**

37 Potential seismic-related hazards under this alternative would be essentially the same as those  
38 described for the proposed action. This conclusion is based on the generally similar nature of  
39 proposed development and operations for the proposed action and Alternative 1, as well as the

1 fact that on-site geologic and seismic conditions would be identical for both development  
2 options. Based on the above conclusion, no significant impacts from seismic-related hazards  
3 would be associated with Alternative 1, and related mitigation is therefore not necessary or  
4 proposed.

#### 5 **Non-seismic Hazards**

6 Potential non-seismic hazards under this alternative would be essentially the same as those  
7 described for the proposed action, for similar reasons as noted above for seismic hazards. Based  
8 on this conclusion, Alternative 1 would not result in any significant impacts related to non-  
9 seismic hazards, and associated mitigation is therefore not necessary or proposed.

#### 10 **Volcanic Hazards**

11 Potential volcanic hazards under this alternative would be essentially the same as those identified  
12 above for the proposed action, for similar reasons as noted above for seismic and non-seismic  
13 hazards. Based on this conclusion, no significant impacts from non-seismic hazards would be  
14 associated with Alternative 1, and related mitigation is therefore not necessary or proposed.

#### 15 **4.9.3 No Action Alternative**

16 None of the potential geologic and geologic hazard impacts related to demolition, grading and  
17 redevelopment/reuse of the NMCRC site described for the proposed action and Alternative 1  
18 would occur under the No Action Alternative. It should be noted, however, that all of these  
19 potential impacts were determined to be less than significant, and the site would continue to be  
20 subject to similar potential volcanic hazard impacts under this alternative as described for the  
21 proposed action and Alternative 1.

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## 1    **4.10    WATER RESOURCES**

2    This section describes potential water resource impacts associated with the proposed action and  
3    alternatives, including effects related to drainage alteration, storm water flows, water quality and  
4    groundwater resources. Additional discussion of existing and proposed storm water facilities  
5    and potential water quality issues related to hazardous material sites is provided in Sections 4.11  
6    (Uilities) and 4.13 (Hazardous Materials and Waste), respectively. Factors used to identify and  
7    evaluate significant potential water resource impacts include determining whether the proposed  
8    action and alternatives would:

- 9           1. Adversely affect drainage patterns to the extent that the physical, chemical, or biological  
10           character of nearby water bodies would be substantially altered;
- 11           2. Degrade water quality below levels established by regulatory agencies;
- 12           3. Increase risk to human health and safety, or for economic damage, by siting incompatible  
13           land uses and facilities in areas susceptible to flood hazards; or
- 14           4. Adversely affect groundwater recharge or flow to the extent that local aquifer levels or  
15           use would be substantially altered.

### 16    **4.10.1 Proposed Action**

#### 17    **Drainage Alteration**

18    As described in Section 3.10, existing surface drainage from the NMCRC site discharges into the  
19    Blair and Hylebos waterways via a number of existing storm water outfalls. The majority of the  
20    site (approximately the northernmost 90 percent) drains north-northeast to the Hylebos  
21    Waterway through existing outfall nos. 547, 550 and 554 (with portions of the existing pier nos.  
22    40 and 60 draining directly into the Hylebos Waterway). The southeastern corner of the site  
23    (within the main parking area south of building no. 55) drains south-southwest through existing  
24    outfall nos. 523 and 506/13-01 and flows into Blair Waterway (KJC 2008). Implementation of  
25    the proposed action would entail a number of additions/modifications to the existing storm drain  
26    system, including removing outfall nos. 547, 550, 554 and 506/13-01, and modifying outfall no.  
27    523, with proposed drainage from the NMCRC site outlined below.

- 28           • Existing drainage into outfall nos. 550 and 554 would be rerouted as follows: (1) most  
29           runoff from the southern portion of the NMCRC site (south of building nos. 56, 57 and  
30           65) that currently flows north-northeast to the Hylebos Waterway would be rerouted  
31           south-southwest into modified outfall nos. 523 and CY2-01, and would drain into the  
32           Blair Waterway; (2) small areas of the southern (associated with building nos. 56 and 65)  
33           and central (the existing access road between building nos. 51 and 57) portions of the site  
34           that currently flow north into the Hylebos Waterway would be rerouted into modified  
35           outfall no. 616, and would continue to drain north into the Hylebos Waterway; and  
36           (3) runoff from the northeastern portion of the site (in the vicinity of pier no. 40) that  
37           currently flows north into the Hylebos Waterway would be rerouted into proposed outfall  
38           no. T5, and would continue to drain north into the Hylebos Waterway.

- 1       • Existing drainage from the northwestern corner of the site (in the vicinity of pier no. 60)  
2       that currently flows north into the Hylebos Waterway through outfall no. 547, would be  
3       rerouted into modified outfall no. 541 and would continue to drain north into the Hylebos  
4       Waterway.
  
- 5       • Existing drainage from the southeastern corner of the site (within the main parking area  
6       south of building no. 55) that currently flows south-southwest through existing outfall  
7       nos. 523 and 506/13-01 and into the Blair Waterway, would be rerouted into modified  
8       outfall nos. 523 and CY2-01 and would continue to flow into the Blair Waterway.

9       Based on the above descriptions, drainage from the southern portion of the site (excluding the  
10       southeastern corner of the existing parking area south of building no. 55) would be rerouted from  
11       the Hylebos Waterway to the Blair Waterway. All other portions of the NMCRC site would  
12       continue to ultimately flow into either the Blair or Hylebos waterways as described for the  
13       existing condition (although the internal flow configurations would be modified as noted). These  
14       proposed modifications would not result in significant impacts related to drainage  
15       alteration/patterns or the associated character of nearby water bodies, based on the following  
16       considerations: (1) the majority of flows from the NMCRC site would continue to drain into the  
17       same waterway (i.e., either the Blair or Hylebos) as described for the existing condition; and (2)  
18       while portions of the southern site area would be rerouted from the Hylebos Waterway to the  
19       Blair Waterway, both of these water bodies drain into Commencement Bay just northwest of the  
20       site and the overall existing drainage patterns would not be changed. Accordingly, no related  
21       mitigation is necessary or proposed.

## 22       **Water Quality**

23       Potential water quality impacts from the proposed action are associated with both short-term  
24       construction activities and long-term site operation and maintenance, as outlined below.

25       The proposed action would not result in any direct effects to groundwater quality through  
26       activities such as underground storage of hazardous materials. Accordingly, potential impacts to  
27       groundwater quality would be limited to the percolation of surface runoff and associated  
28       contaminants generated within the NMCRC site. The following assessment of potential water  
29       quality impacts is therefore applicable to both surface and groundwater resources, with the  
30       Groundwater Discipline Report prepared for the Blair-Hylebos Terminal Redevelopment Project  
31       (which includes the NMCRC site) concluding that “There are no adverse impacts to groundwater  
32       quality reasonably expected from stormwater infiltration that may occur on the...site under all  
33       alternatives.” (GeoEngineers 2008b).

### 34       *Short-term Construction*

#### 35       Construction

36       Potential water quality impacts related to construction of the proposed action include  
37       erosion/sedimentation, the on-site use and storage of construction-related hazardous materials  
38       (e.g., fuels, etc.), and generation of debris/contaminants from demolition activities.

1 Erosion and Sedimentation. Proposed excavation, grading and construction activities within the  
2 NMCRC site could potentially result in erosion and sedimentation from activities including:  
3 (1) removal of existing surface stabilizing features such as structures and pavement; (2)  
4 excavation of existing compacted materials; (3) redeposition of excavated (and/or imported)  
5 material as fill in proposed development sites; (4) potential sediment generation from demolition  
6 and paving activities; and (5) potential erosion from disposal of extracted groundwater (if  
7 required). Project-related erosion could result in the influx of sediment into downstream  
8 receiving waters, with associated water quality effects such as turbidity and the transport of other  
9 contaminants (e.g., hydrocarbons) that tend to adhere to sediment particles (although petroleum-  
10 contaminated soil at the site is below cleanup levels, refer to Section 3.13 of this EA).

11 While graded/excavated areas and fill materials associated with the above described activities  
12 would be stabilized through efforts such as compaction and installation of hardscape, erosion  
13 potential would be higher in the short-term than for existing conditions. Erosion and  
14 sedimentation are not considered to be significant long-term concerns for the proposed action  
15 because developed areas would be stabilized through the described installation of buildings and  
16 pavement. The short-term water quality effects from erosion and sedimentation described above  
17 could potentially affect downstream waters and associated wildlife habitats, with such impacts  
18 considered potentially significant. These potential impacts would be addressed through required  
19 conformance with the NPDES Construction Discharge Permit (and related local standards)  
20 described in Section 3.10 of this EA. Specifically, this would entail the preparation and  
21 implementation of a SWPPP and related monitoring/maintenance efforts to identify appropriate  
22 BMPs and ensure that applicable water quality standards related to erosion and sedimentation are  
23 met. While individual BMPs would be determined based on site-specific conditions, examples  
24 of general measures that would likely be applicable to the proposed action include the following  
25 as summarized from the Blair-Hylebos Terminal Redevelopment Project WQTR (Kindig 2008):

- 26 • Using construction scheduling to restrict ground disturbing activities to the dry season  
27 whenever feasible, and phasing construction operations to limit the extent of grading at  
28 any given time to the minimum feasible area.
- 29 • Using erosion prevention and sediment catchment devices/materials in applicable  
30 locations (including dewatering outlets), and storing appropriate quantities on-site to  
31 ensure availability when needed. Specific devices/materials may include fiber rolls,  
32 gravel bags/hay bales (e.g., at storm drain inlets), energy dissipators (at applicable outlet  
33 points), silt fence, mats or mulching, material stockpile covers, temporary sediment  
34 basins, and soil binders.
- 35 • Stabilizing construction entrance points and access roads through efforts such as  
36 temporary paving, and use of stabilized quarry spall pads and/or wheel washing in  
37 contained sumps.
- 38 • Monitoring and maintaining erosion/sedimentation facilities and operations to ensure  
39 proper working order.

40 Based on the described conformance with applicable regulatory requirements, potential  
41 construction-related erosion and sedimentation impacts would not violate associated water

1 quality standards or requirements and would not be significant. Accordingly, no related  
2 mitigation is necessary or proposed.

3 Construction-related Hazardous Materials. Construction associated with the proposed action  
4 would involve the on-site use and storage of hazardous materials such as fuels, lubricants,  
5 solvents, concrete, paint, and portable septic system wastes. The accidental discharge of these  
6 types of pollutants could potentially result in significant impacts if they reach downstream  
7 receiving waters, particularly materials such as petroleum compounds that are potentially toxic to  
8 aquatic species in low concentrations. As described above for erosion/sedimentation (and in  
9 Section 3.10), a SWPPP and related monitoring/maintenance would be required under NPDES  
10 and related local guidelines, and would include detailed measures to avoid or address potential  
11 impacts related to the use and potential discharge of construction-related hazardous materials.  
12 While individual BMPs would be determined based on site-specific conditions, examples of  
13 general measures that would likely be applicable to the proposed action include the following as  
14 summarized from the previously referenced Blair-Hylebos Terminal Redevelopment Project  
15 WQTR:

- 16 • Restricting paving operations during wet weather and using sediment control devices  
17 downstream of paving activities.
- 18 • Containing paving and construction wastes or slurry (e.g., from washouts for concrete,  
19 stucco, paint, caulking, sealants or drywall plaster), through measures such as using  
20 portable (and impermeable) sumps, and off-site waste disposal in an approved location.
- 21 • Minimizing the amount of hazardous materials stored onsite, and restricting storage/use  
22 locations to areas at least 50 feet (15.3 meters) from storm drains and surface waters.
- 23 • Use of covered and/or enclosed storage facilities for hazardous materials, and  
24 maintenance of accurate and up-to-date written material inventories.
- 25 • Monitoring and maintaining hazardous material use/storage facilities and operations to  
26 ensure proper working order.

27 Based on the described conformance with applicable regulatory requirements, potential  
28 construction-related hazardous material impacts would not violate associated water quality  
29 standards or requirements and would not be significant. Accordingly, no related mitigation is  
30 necessary or proposed.

31 Demolition-related Debris Generation. The proposed action would involve the demolition of  
32 existing facilities including structures and pavement. These activities would generate variable  
33 amounts of construction debris, potentially including concrete, asphalt, glass, metal, drywall,  
34 paint, insulation, fabric, wood and other materials. Proposed demolition activities could also  
35 potentially generate particulates (e.g., dust from structure razing or pavement demolition), as  
36 well as contaminants related to hazardous materials including lead-based paint and asbestos  
37 insulation. The introduction of demolition-related particulates or hazardous material  
38 contaminants into the local storm drain system could potentially result in significant downstream  
39 water quality impacts. Project construction would be subject to the NPDES/SWPPP (and related

1 local) requirements described above, and would include measures to address potential effects  
2 associated with contaminant generation from demolition activities (refer also to Section 4.13,  
3 Hazardous Materials and Waste). While individual BMPs would be determined based on site-  
4 specific conditions, examples of general measures that would likely be applicable to the  
5 proposed action include the following as summarized from the previously referenced WQTR:

- 6 • Recycling appropriate (i.e., non-hazardous) construction debris for on- or off-site use  
7 whenever feasible.
- 8 • Using appropriate storage facilities for construction debris, including adequately sized  
9 watertight dumpsters, covers to preclude rain from contacting waste materials,  
10 impervious liners, and surface containment features such as berms, dikes or ditches to  
11 prevent run-on and runoff.
- 12 • Using appropriate erosion prevention and sediment/dust control measures for all  
13 demolition activities.
- 14 • Conforming with applicable requirements related to the handling, transport and disposal  
15 of hazardous materials generated during demolition (e.g., appropriate sampling,  
16 monitoring containment, safety and transport procedures).

17 Based on the described conformance with applicable regulatory requirements, potential  
18 construction-related demolition impacts would not violate associated water quality standards or  
19 requirements and would not be significant. Accordingly, no related mitigation is necessary or  
20 proposed.

### 21 Long-term Operation and Maintenance

22 Long-term operation and maintenance water quality impacts associated with the proposed action  
23 include the generation and off-site discharge of urban contaminants. The previously referenced  
24 Blair-Hylebos Terminal Redevelopment Project WQTR identifies vehicular traffic as the  
25 “greatest local cause of stormwater pollution” and lists associated contaminants including metals,  
26 petroleum products and solids. Additional contaminants and conditions of concern identified in  
27 the referenced WQTR include: (1) nutrients and pesticides (insecticides and herbicides) from  
28 landscaping runoff; (2) fecal coliforms from animal (e.g., wildlife) wastes; (3) biochemical  
29 oxygen demand (BOD, i.e., oxygen depletion in water); and (4) temperature modification. For  
30 the NMCRC site, the described contaminants related to vehicle use would represent the primary  
31 source of long-term water quality impacts (i.e., due to the proposed uses including access roads),  
32 although other listed contaminants could also be a factor in association with on-site landscaping  
33 and/or run-on from off-site landscaping. In addition, industrial type facilities such as the  
34 proposed TOTE vessel maintenance area could potentially generate other contaminants related to  
35 chemical use or other factors (e.g., temperature effects from discharge of cooling water). Long-  
36 term operation and maintenance associated with the proposed action would be subject to  
37 applicable requirements of the Phase 1 NPDES Permit described in Section 3.10, as well as the  
38 NPDES General Industrial Permit for pertinent activities/facilities (i.e., if such activities/facilities  
39 are proposed). As noted in Section 3.10, conformance with the Phase I Permit would entail  
40 appropriate prevention, control, and treatment measures, including development of a Stormwater

1 Management Program and implementation, monitoring and maintenance of associated BMPs.  
2 While individual BMPs would be determined based on site-specific conditions, examples of  
3 measures that would likely be applicable to the proposed action include the following as  
4 summarized from the referenced WQTR:

- 5 • Using high efficiency equipment to conduct regular sweeping of paved areas including  
6 streets, parking areas, and piers to remove accumulated sediment/particulates and  
7 attached contaminants (e.g., petroleum hydrocarbons) before they are picked up by runoff  
8 and enter the storm water system.
- 9 • Reducing or eliminating the use of unsealed galvanized metal (a major source of zinc) in  
10 facilities such as roofs, ductwork, equipment boxes, gutters/downspouts, storm drains,  
11 fences, light poles, grating and steps.
- 12 • Conducting regular inspections of potential contaminant sources and collection areas, and  
13 implementing immediate clean up for spills of materials including motor oil, hydraulic  
14 fluids, coolant or other applicable substances.
- 15 • Using appropriate storm water treatment facilities such as bioretention facilities,  
16 biofiltration swales, proprietary storm water filters (e.g., StormFilter™), and oil and  
17 water separators. Bioretention facilities typically capture (retain) and infiltrate storm  
18 water in a vegetated basin designed to provide appropriate percolation rates, while  
19 biofiltration facilities direct runoff flows through a vegetated and gently sloped channel.  
20 Proprietary filters typically use a variety of gravity setting (to remove larger debris and  
21 sediment) and/or media (e.g., sand) filters to treat a specific runoff volume or flow rate  
22 (with StormFilter™ units employing a leaf compost or zeolite media to remove pollutants  
23 through filtration, ion exchange, adsorption, and microbial degradation).
- 24 • Implementing regular inspections and as-needed maintenance of all BMPs to ensure  
25 proper working order and effective water quality treatment.

26 Based on the described conformance with applicable regulatory requirements, potential long-  
27 term operation and maintenance impacts would not violate associated water quality standards or  
28 requirements and would not be significant. Accordingly, no related mitigation is necessary or  
29 proposed.

### 30 **Flood Hazards**

31 Potential impacts from the proposed action related to flood hazards include tsunamis, surcharged  
32 storm drain facilities, and sea level rise, as outlined below.

#### 33 Tsunamis

34 As described in Section 3.10, the NMCRC site could potentially be subject to tsunami-related  
35 flood hazards in association with major earthquake or landsliding events. While a catastrophic  
36 tsunami event in the Commencement Bay area could substantially affect the NMCRC site and  
37 surrounding Port facilities, these potential impacts are considered less than significant based on

1 the following considerations: (1) the probability of a catastrophic tsunami event that would result  
2 in substantial effects to the Port area and NMCRC site is considered low; (2) the proposed action  
3 would entail raising the NMCRC site elevation by 1 to 4 feet (0.3 to 1.2 meters) through fill  
4 placement; (3) early warning and evacuation plans related to tsunami hazards are currently in  
5 place for the Pacific region (including the Port area and NMCRC site); and (4) implementation  
6 of the proposed action would not increase potential tsunami-related impacts relative to the  
7 existing condition (i.e., the existing site and facilities are subject to the same tsunami hazards that  
8 would be associated with the proposed action). Because no significant impacts are identified in  
9 association with tsunami hazards under the proposed action, related mitigation is not proposed.

#### 10 Surcharged Storm Drain Facilities

11 As described in Section 3.10 of this EA, a number of existing storm drain facilities at the Port  
12 site are subject to surcharging (inundation) during larger storm events, including one or more  
13 outfalls that currently drain portions of the NMCRC site. This discussion also notes, however,  
14 that while surcharging indicates that associated facilities may not be adequate to convey flows  
15 from larger storm events, it “[d]oes not necessarily indicate flooding is a major concern.” (KJC  
16 2008). Under the proposed action, drainage from the NMCRC site would be rerouted into  
17 several new or modified outfalls (as described above in this section under Drainage Alteration),  
18 all of which would be designed to accommodate appropriate design storm events (i.e., 10- or 25-  
19 year storms) pursuant to applicable regulatory requirements (KJC 2008). Accordingly, no  
20 significant flooding impacts would result from the proposed action in association with  
21 surcharged storm drain facilities, and no related mitigation is necessary or proposed.

#### 22 Sea Level Rise

23 Based on the medium and very high figures derived from the UW/Ecology climate change  
24 analysis described in Section 3.10.4 of this EA (UW 2008), two impact scenarios were  
25 hydraulically modeled in the STR conducted for the Blair-Hylebos Redevelopment Project (KJC  
26 2008): the probable-case scenario (PCS) and the worst-case scenario (WCS). Both the PCS and  
27 WCS models identified a number of inundation impacts associated with projected Mean Lower  
28 Low Water elevations of 15.4 and 18.5 feet (4.7 and 5.6 meters), respectively. The STR  
29 concludes, however, that “[t]hese impacts would likely be alleviated, if not avoided  
30 completely...as much of the Blair-Hylebos Redevelopment Project site would be raised 1 to 4  
31 vertical feet as currently proposed.” Accordingly, no significant flooding impacts would result  
32 from the proposed action in association with projected sea level rises, and no related mitigation is  
33 necessary or proposed.

#### 34 **Groundwater Recharge and Flow**

35 Potential impacts related to groundwater recharge and flow are associated with changes in local  
36 infiltration (and recharge) capacity from construction of additional impervious surfaces. Only  
37 very minor (less than one acre [0.4 hectare]) additional impervious surfaces would be  
38 constructed at the NMCRC site under the proposed action, however, in association with  
39 replacement of existing landscaping and graded lots with paved surfaces or structures.  
40 Accordingly, no significant impacts to groundwater recharge and flow would occur from the  
41 proposed action, and no related mitigation is necessary or proposed.

## 1 **4.10.2 Alternative 1**

2 This alternative would entail the following activities: (1) demolition of existing on-site facilities  
3 including seven buildings, all or part of the existing paved parking lots and access roads, minor  
4 landscaping and appurtenant facilities (e.g., signs and fences), and portions of the existing storm  
5 drain system; (2) re-grading the site and placement of fill to raise the on-site elevation (along  
6 with the rest of the Port redevelopment project area) by approximately 1 to 4 feet (0.3to 1.2  
7 meters); and (3) reuse of the site to include additional and modified storm drain facilities,  
8 impervious (paved) surfaces covering the entire NMCRC site, portions of a main access road  
9 serving the north end of the Blair Peninsula, and cargo storage. Potential water resource impacts  
10 from these activities related to drainage alteration, water quality, and flood hazards are described  
11 below.

### 12 **Drainage Alteration**

13 Existing drainage within the NMCRC site under this alternative would be modified as described  
14 for the proposed action, with similar associated less than significant impacts related to drainage  
15 alteration/patterns and the associated character of nearby water bodies. Accordingly, no related  
16 mitigation is necessary or proposed.

### 17 **Water Quality**

18 Potential short-term (construction) water quality impacts for this alternative would be essentially  
19 the same as those described above for the proposed action, based on the similar nature of related  
20 operations. Accordingly, potential impacts associated with erosion/sedimentation, construction-  
21 related hazardous material use/storage, and demolition-related debris generation would be less  
22 than significant, assuming conformance with all applicable regulatory requirements (as described  
23 for the proposed action). Because no significant water quality impacts would occur from short-  
24 term construction under this alternative, related mitigation is not necessary or proposed.

25 Long-term water quality impacts under this alternative would be essentially the same as those  
26 described for the proposed action, based on the fact that both development options would entail  
27 development of the entire NMCRC site for urban and/or industrial type uses. Specifically, the  
28 types of contaminants and conditions of concern under this alternative would be similar to those  
29 described for the proposed action. While individual BMPs to address these issues could vary  
30 somewhat, long-term operation and maintenance under either development option would require  
31 conformance with applicable regulatory guidelines that would effectively avoid associated  
32 significant water quality impacts. Because no significant water quality impacts would occur  
33 from long-term operation and maintenance under this alternative, related mitigation is not  
34 necessary or proposed.

### 35 **Flood Hazards**

36 Potential flood hazard impacts from this alternative related to tsunamis, surcharged storm drain  
37 facilities and sea level rise would be the same as those identified for the proposed action. This  
38 conclusion is based on considerations including: (1) both development options would encompass  
39 the same hazard conditions and site development criteria (e.g., grading and fill placement)  
40 associated with potential tsunami and sea level rise effects; and (2) both development options

1 would encompass the same proposed drainage system modifications to address potential  
2 surcharging effects. Because no significant impacts related to flood hazards would occur under  
3 this alternative, related mitigation is not necessary or proposed.

#### 4 **Groundwater Recharge and Flow**

5 Potential impacts related to groundwater recharge and flow from this alternative would be the  
6 same as those described for the proposed action. This conclusion is based on the fact that both  
7 development options would entail construction of impervious surfaces within the entire NMCRC  
8 site. Because no significant impacts related to groundwater recharge and flow would occur  
9 under this alternative, related mitigation is not necessary or proposed.

#### 10 **4.10.3 No Action Alternative**

11 None of the potential water resource impacts related to demolition, grading and  
12 redevelopment/reuse of the NMCRC site described for the proposed action and Alternative 1 in  
13 Sections 4.10.1 and 4.10.2 would occur under the No Action Alternative. It should be noted,  
14 however, that all of these potential impacts were determined to be less than significant, and the  
15 No Action Alternative would result in similar impacts related to tsunami hazards, and somewhat  
16 greater impacts related to flooding hazards from surcharged storm drain facilities than described  
17 for either of the development alternatives. Specifically, the latter conclusion is based on the fact  
18 that no storm drain improvements would occur under the No Action Alternative, and the existing  
19 surcharge conditions described above in Section 4.10.1 would remain.

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## 1    **4.11 UTILITIES**

2    This section describes potential utilities impacts associated with the proposed action and  
3    alternatives. Utility services addressed in this section include potable water and fire protection  
4    distribution, wastewater collection and treatment, stormwater collection, electrical and natural  
5    gas, telecommunications, and solid waste systems. Section 4.10 contains additional discussion  
6    of impacts to stormwater collection systems. Factors used to identify and evaluate significant  
7    potential utilities impacts include determining whether the proposed action and alternatives  
8    would:

- 9           1. Increase utility demand to a level in excess of current or planned capacity for major  
10           utility system components, such as reservoirs, wastewater treatment plants, or landfills; or
- 11           2. Would cause the utility provider to violate applicable legal or regulatory environmental  
12           standards and requirements.

### 13    **4.11.1 Proposed Action**

14    With implementation of the proposed action, existing utility infrastructure would either be  
15    abandoned in place, remain in place where feasible, or be relocated to accommodate the Port's  
16    full-buildout development plan for the Blair Peninsula. The utilities relocation would primarily  
17    occur in easements along the relocated Taylor Way corridor. Utilities would be above or below  
18    ground as required by code or by the direction of the utility provider. Overall, changes to the  
19    utility infrastructure in the immediate vicinity of the NMCRC site would be improved to provide  
20    improved service to the area as part of the overall redevelopment program for Blair Peninsula.

#### 21    **Increased Demand**

22    *Potable Water and Fire Protection Water.* The existing Tacoma Water main located along the  
23    11<sup>th</sup> Street corridor between Alexander Avenue and the proposed realignment of Taylor Way  
24    would be abandoned or removed as part of the proposed action. Additionally, an existing 12-  
25    inch (0.30-meter) main located along Alexander Avenue, north of 11<sup>th</sup> Street, would be  
26    abandoned or converted to private Port of Tacoma use as part of the proposed action.

27    A private fire protection/water distribution system would be installed on the northern portion of  
28    the Peninsula as part of the larger Blair Peninsula redevelopment plan. This system would have  
29    at least two connections into Tacoma Water's mains and would include backflow prevention  
30    assemblies and meters at these connection points. The private system would be designed to  
31    ensure adequate fire protection and water flow. As the potable water and fire protection water  
32    system for the NMCRC site would be improved as part of the overall redevelopment plan for the  
33    Blair Peninsula, it would be designed to accommodate the demand associated with the proposed  
34    redevelopment. For this reason, the proposed action would not result in any significant impacts  
35    to the potable water and fire protection water systems associated with increased demand. No  
36    mitigation is required.

37    *Wastewater Collection and Treatment.* The proposed action would result in the abandonment of  
38    several gravity sewer lines located within 11<sup>th</sup> Street and Alexander Avenue and the encasement  
39    of existing sewers crossing under proposed rail tracks. A number of other improvements to the

1 wastewater collection system are proposed as part of the overall redevelopment program for the  
2 Blair Peninsula. Improvements to the wastewater collection system that serves the NMCRC site  
3 would be designed as part of the overall redevelopment program and would be designed to  
4 accommodate demand for the entire redevelopment program. For this reason, no significant  
5 impacts to wastewater collection and treatment associated with increased demand would occur.  
6 No mitigation is required.

7 *Stormwater Collection.* Alterations to the stormwater collection system on site would occur as a  
8 result of the proposed action. Existing drainage on the site would be reconfigured as part of the  
9 proposed action, as previously discussed in Chapter 4.10. Changes to the stormwater collection  
10 system on the NMCRC site would be incorporated into the overall storm drainage system for the  
11 Port's redevelopment plan. As part of the overall redevelopment program for the Blair  
12 Peninsula, alterations to the stormwater collection system would include a wide-scale upgrade of  
13 stormwater management infrastructure across the Peninsula which would increase the system's  
14 capacity. The addition of fill to areas on the Blair Peninsula to raise the surface elevation by 1 to  
15 4 feet (0.3 to 1.2 meters) would allow more adequate drainage conveyance. Twenty of forty-four  
16 existing outfalls for the redevelopment plan area would be removed. Of the remaining twenty-  
17 four that would remain in service, nineteen would be reconstructed or modified. Additionally,  
18 six new outfalls would be constructed as part of the overall redevelopment plan. Because  
19 stormwater drainage and collection modifications to the NMCRC site would be incorporated into  
20 the overall stormwater collection system for the redevelopment plan, the modified system would  
21 be placed and sized appropriately to allow for the adequate capacity to handle stormwater flows.  
22 For this reason, no significant impacts to the stormwater collection system would occur as a  
23 result of the proposed action. No mitigation is required.

24 *Electrical and Natural Gas Systems.* New electrical transmission and distribution lines and poles  
25 would be constructed along new road and rail rights-of-ways, including along the extension of  
26 Taylor Way. The existing natural gas distribution mains along Alexander Avenue and 11<sup>th</sup> Street  
27 would be abandoned in place, and many of the existing natural gas laterals would be terminated  
28 and/or reconfigured. The new electrical and natural gas utilities within the NMCRC site would  
29 be part of the new utility infrastructure for the overall redevelopment program. Thus, the new  
30 electrical and natural gas systems would be sized appropriately to serve the redevelopment  
31 program area and the proposed action would not result in any impacts associated with increased  
32 demand to electrical and natural gas systems. No mitigation is required.

33 *Telecommunications.* New telecommunications infrastructure would be constructed as part of the  
34 proposed action. A new communications hut would be installed at the northeast corner of 11<sup>th</sup>  
35 Street and Taylor Way, near the NMCRC site. An existing underground fiber from the Blair  
36 Waterway along the 11<sup>th</sup> Street Corridor would be replaced with new underground fiber. These  
37 new improvements on and near the NMCRC site would be a piece of the overall  
38 telecommunications infrastructure network that would be installed as part of the Port  
39 redevelopment plan.

40 An existing Qwest Hut is located at the southwest intersection of Taylor Way and 11th Street.  
41 Existing Qwest infrastructure, such as the aerial telecommunication services along 11th Street,  
42 would be replaced with a new underground service. A new aerial line would be installed along  
43 the proposed Taylor Way extension, which would provide services to customers on the north end

1 of the Blair Peninsula. Additionally, existing aerial fiber serving Alexander Avenue would be  
2 replaced with a new underground fiber.

3 Click! Network service would be maintained and service routes would continue to follow  
4 Tacoma Power's transmission and distribution lines. The TFD fiber loop and fire alarm loop  
5 service would be replaced with a combination of new underground cable and aerials.

6 The new telecommunications facilities installed within and adjacent to the NMCRC site would  
7 be part of the overall telecommunications network for the area that would be installed as part of  
8 the larger redevelopment program for the Blair Peninsula. The new/upgraded  
9 telecommunications network would be sited appropriately to provide adequate service to the  
10 redevelopment program area. Therefore, the proposed action would not result in any significant  
11 impacts associated with increased demand to the telecommunication system. No mitigation is  
12 required.

13 *Solid Waste.* Solid waste service to the site would continue to be provided by the City of  
14 Tacoma Public Works Department and transported to a municipal landfill. Solid waste  
15 collection is a "demand responsive" service and current levels can be expanded and funded  
16 through user fees without difficulty. For this reason, any increased demand for solid waste  
17 collection at the site would not result in any significant impacts to the provision of solid waste  
18 services. No mitigation is required.

## 19 **Environmental Standards**

20 Proposed infrastructure improvements for each of the six utilities discussed would be designed  
21 and installed per all applicable legal or regulatory environmental standards and requirements. As  
22 installation of proposed utility infrastructure would be subject to review and approval from  
23 appropriate agencies, no significant impact would occur as a result of the proposed action. No  
24 mitigation is required.

### 25 **4.11.2 Alternative 1**

#### 26 **Increased Demand**

27 Implementation of Alternative 1 would result in changes to the existing utility infrastructure for  
28 each of the six utilities discussed previously (potable water and fire protection water, wastewater  
29 collection and treatment, stormwater collection, electrical and natural gas systems,  
30 telecommunications, and solid waste). The NMCRC site would be developed as a portion of a  
31 terminal. Because the NMCRC site would be used for development of a larger area, the utilities  
32 for the NMCRC would be incorporated into the design of the terminal. Similar to the proposed  
33 action, implementation of Alternative 1 would likely require upgrades and/or installation of new  
34 utilities to serve the terminal. As these utilities would be designed and installed as a piece of the  
35 larger terminal development area, they would be sized appropriately to adequately handle demand.  
36 For this reason, no significant impacts to potable water and fire protection water, wastewater  
37 collection and treatment, stormwater collection, electrical and natural gas systems,  
38 telecommunications, and solid waste would occur with implementation of Alternative 1. No  
39 mitigation is required.

1 **Environmental Standards**

2 Similar to the proposed action, any infrastructure improvements that would occur under  
3 Alternative 1 would be designed and installed per all applicable legal or regulatory  
4 environmental standards and requirements. As installation of any new utility infrastructure  
5 would be subject to review and approval from appropriate agencies, no significant impact would  
6 occur as a result of Alternative 1 implementation. No mitigation is required.

7 **4.11.3 No Action Alternative**

8 Under the No Action Alternative, the Navy would retain ownership of the NMCRC site, and no  
9 associated demolition or reuse would occur as described for the proposed action and Alternative  
10 1. The existing facilities within the NMCRC site would remain in place and unused under this  
11 alternative, with the property held in an inactive or caretaker status. Demand for potable water,  
12 wastewater collection and treatment, electrical and natural gas systems, telecommunications, and  
13 solid waste at the site would decrease to levels necessary for caretaker status. Storm drain  
14 conditions would not change. The No Action Alternative would have no impact on either the  
15 capacity or function of on-site utility systems and no construction of any on-site utility systems  
16 would be required. No significant impacts would occur and no mitigation is required.

## 1    **4.12 PUBLIC SERVICES**

2    Public services addressed in this section are fire protection, police protection, and emergency  
3    medical services. Factors considered in determining whether an alternative would have  
4    significant impacts on public services included the extent or degree to which its implementation  
5    would:

- 6           1. Require or result in unplanned construction of new facilities that would cause changes  
7           or alterations to the physical environment; or
- 8           2. Result in a demand for public services or facilities that would exceed the available or  
9           planned capacity of those services.

### 10   **4.12.1 Proposed Action**

#### 11   **Increased Demand/New Facilities**

12    *Fire Protection.* The proposed action would result in the development of the NMCRC site as a  
13    portion of the Port's redevelopment plan. While not a part of the proposed action, as a result of  
14    the overall Port redevelopment plan, the demolition of Fire Station 15, located at the corner of  
15    Taylor Way and 11<sup>th</sup> Street, would occur. The Port is coordinating with the TFD to ensure  
16    continued fire response service to the Blair Peninsula during construction and with operation of  
17    overall Port redevelopment plan, which the proposed action is a portion. The continuation of fire  
18    protection services on the Blair Peninsula would be provided through one of several methods,  
19    including reestablishing the Fire Station in the same vicinity as the current location (e.g. along  
20    the relocated Taylor Way near the Hylebos Bridge), establishing a new facility in a new location  
21    to serve the Peninsula, or covering the service area from other existing stations. The TFD is in  
22    the process of modeling and analyzing response times and siting alternatives and the provision of  
23    appropriate fire protection services would be provided via one of the three methods identified.  
24    The Port's redevelopment plan would result in the need for the construction of a new facility or  
25    the coverage of the service area from existing fire stations as a result of the removal of Fire  
26    Station #15. However, the need for a new facility is associated with the removal of an existing  
27    facility located within the redevelopment area, not as a result of an increased demand for fire  
28    protection services. Because the removal of Fire Station #15 would be addressed by providing  
29    alternative service to the area within acceptable response times, either via the construction of a  
30    new facility or coverage of the area by existing fire stations, no significant impact would occur to  
31    fire protection services as a result of the proposed action. Refer to Section 4.5.1 under the  
32    heading "Emergency Access" regarding the proposed action's (not significant) effect on  
33    emergency vehicle access. No mitigation is necessary.

34    *Police Protection.* Police protection to the NMCRC site would continue to be provided by the  
35    TPD. The proposed action would result in a change of uses at the NMCRC site; however, this  
36    change of uses is not anticipated to result in the need for increased police protection. As the  
37    proposed action would not result in the need for increased police protection, and no new police  
38    facilities would be required to serve the site following implementation of the proposed action.  
39    No significant impact would occur and no mitigation is required.

1 *Emergency Medical Services.* Similar to police services, the proposed action would not result in  
2 the need for new facilities or increased need for emergency medical services. The NMCRC site  
3 would continue to be served by the TFD for emergency medical services. The proposed action  
4 does not include any uses that would result in expected increases in the need for emergency  
5 medical services. No significant impact to emergency medical services would occur and no  
6 mitigation is necessary.

#### 7 **4.12.2 Alternative 1**

##### 8 **Increased Demand/New Facilities**

9 *Fire Protection.* Fire protection to the site would continue to be provided by the TFD.  
10 Alternative 1 would not require the removal of Fire Station #15. Fire Station #15 would remain  
11 in its current location and continue to operate. Alternative 1 would result in the development of  
12 the NMCRC site in accordance with the probable land uses and levels of activity under existing  
13 industrial zoning should the Port not move forward with its master redevelopment program for  
14 the Blair Peninsula, including the development of two new cargo and container terminals,  
15 retention of the TOTE operations at its current terminal, additional auto/break bulk storage and  
16 improvements at the Washington United Terminal. The implementation of Alternative 1 would  
17 not result in the development of the site with uses which are likely to require increased fire  
18 protection response. As fire protection services required for the site with development of  
19 Alternative 1 would be similar to those currently required for the NMCRC site, Alternative 1  
20 would not result in increased demand or the need for new fire protection facilities. No  
21 significant impact would occur and no mitigation is necessary.

22 *Police Protection.* Police protection to the NMCRC site would continue to be provided by the  
23 TPD. Alternative 1 would result in a change of uses at the NMCRC site; however, this change  
24 of uses is not anticipated to result in the need for increased police protection. Similar to the  
25 proposed action, the implementation of Alternative 1 would not result in the need for increased  
26 police protection, and no new police facilities would be required to serve the site. No significant  
27 impact would occur and no mitigation is required.

28 *Emergency Medical Services.* As Alternative 1 does not include any uses that would result in an  
29 expected increase in the need for emergency medical services, it would not result in the need for  
30 new facilities. The NMCRC site would continue to be served by the TFD for emergency  
31 medical services. No significant impact to emergency medical services would occur and no  
32 mitigation is necessary.

#### 33 **4.12.3 No Action Alternative**

34 The No Action Alternative would not result in the need for the construction of new fire, police,  
35 or emergency medical services. With the site being held in caretaker status, demand for these  
36 services would decrease. No significant impacts would occur and no mitigation is required.

## 1    **4.13       HAZARDOUS MATERIALS AND WASTE**

2    The section describes potential hazardous materials and waste impacts associated with the  
3    proposed action and alternatives. Factors used to identify and evaluate significant potential  
4    hazardous materials and waste impacts include determining whether the proposed action and  
5    alternatives would:

- 6       1. Create a hazard to the public or the environment through the routine transport, use, or  
7       disposal of hazardous materials, substances, or wastes; and
- 8       2. Create a hazard to the public or the environment through reasonably foreseeable upset  
9       and accident conditions involving the likely release of hazardous materials into the  
10      environment.

### 11   **4.13.1     Proposed Action**

#### 12   **Routine Transport, Use, or Disposal of Hazardous Materials, Substances, or Wastes**

13    As described in Section 3.13, NMCRC Tacoma is a small-quantity generator (producing less  
14    than 2,205 pounds [1,000 kilograms] per month) of hazardous wastes. Hazardous wastes  
15    generated at the NMCRC site consists of used oil and antifreeze, flammable solvents, and  
16    flammable debris. Hazardous waste on the NMCRC site is accumulated in 55-gallon (208-liter)  
17    drums. These drums are then secured in export containers which are removed from the NMCRC  
18    site and disposed of by Phillips Environmental Services under a Defense Reutilization and  
19    Marketing Services contract. All hazardous materials and wastes (other than structural materials  
20    such as asbestos and lead-based paint) would be removed in accordance with the NMCRC  
21    hazardous waste management plan before properties are transferred or conveyed.

#### 22    Short-term Construction

23    Construction associated with the proposed action would involve the on-site use and storage of  
24    hazardous materials such as fuels, lubricants, solvents, concrete, paint, and portable septic  
25    system wastes. The accidental discharge of these types of pollutants could potentially result in  
26    significant risks to the public and/or environment. Minimization of these risks would be provided  
27    through compliance with local, state, and federal regulations relating to the potential use, or  
28    storage of hazardous materials. A hazardous materials management plan would include detailed  
29    measures to avoid or address potential impacts related to the use and potential discharge of  
30    construction-related hazardous materials (e.g., through conformance with the NPDES  
31    construction permit process described in Section 4.10, *Water Resources*). Accordingly, no  
32    related mitigation is necessary or proposed.

#### 33    Long-term Operation and Maintenance

34    Land use under the proposed action could use and generate small amounts of hazardous  
35    substances in the proposed TOTE Vessel Maintenance Area. In addition, hazardous substances  
36    could be transported or stored in the YTTI storage yard. Hazardous wastes generated by the  
37    future operations onsite would be required to be compliant with current regulatory guidelines.

1 The acquiring entity and any tenants and business operators with which the acquiring entity  
2 establishes property usage agreements would be responsible for hazardous materials and waste  
3 management under federal, state, and local laws and regulations. Depending on the types and  
4 quantities of the hazardous materials used, each acquiring entity would be subject to the  
5 requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA), the  
6 Resource Conservation and Recovery Act (RCRA), and state hazardous materials business plans  
7 and risk management prevention programs for emergency planning review and community right-  
8 to-know inventory reporting. Adherence to these strict regulatory requirements would reduce or  
9 eliminate potential impacts to the public or the environment. No mitigation is proposed.

## 10 **Hazardous Material Releases**

11 Implementation of the proposed action could result in a hazard to the public or the environment  
12 through releases of hazardous materials. Releases might occur during both the construction phase  
13 and operations phases of the proposed action. Hazardous materials found at the site are described  
14 in Section 3.13.

### 15 Short-term Construction (Demolition)

16 In order to accommodate the YTTI rail intermodal yard, the vessel maintenance area and the  
17 extension of Taylor Way, the proposed action would involve the demolition of existing facilities  
18 including structures and pavement. These activities would generate variable amounts of  
19 construction debris, potentially including concrete, asphalt, glass, metal, drywall, paint,  
20 insulation, fabric, wood and other materials. The demolition of existing structures has the  
21 potential for releasing hazardous material into the environment (described below). Reduction or  
22 elimination of these concerns would be addressed by completing pre-demolition surveys and by  
23 conducting asbestos and/or lead abatement activities where required by air quality or worker  
24 safety regulations, and using appropriate demolition and disposal practices consistent with state,  
25 local, and federal regulations (refer also to Section 4.10, *Water Resources*).

26 Asbestos Containing Material (ACM). The demolition of onsite buildings has the potential to  
27 generate air emissions from ACM. A licensed asbestos-abatement contractor in accordance with  
28 Washington Administrative Code (WAC) 296-62-077 and Puget Sound Clean Air Agency  
29 (PSCAA) Regulation III, Article 4 would remove all asbestos-containing and asbestos-  
30 contaminated building materials. Friable ACM identified as damaged or in poor condition would  
31 be removed or repaired by certified asbestos workers to comply with Washington State  
32 Department of Labor and Industries – Division of Occupational Safety and Health (DOSHS)  
33 Housekeeping Regulations, WAC 296-62-07723. In addition, all available information on ACM  
34 will be provided to the transferee.

35 Adherence to these regulatory requirements would reduce potential impacts to a not significant  
36 level. No mitigation is proposed.

37 Lead Based Paint (LBP). The demolition of buildings onsite has the potential to generate air  
38 emissions from LBP. In addition, Ecology requires that demolition wastes be characterized  
39 under the provisions of WAC 173-303, the Dangerous Waste Regulations. The acquiring entity  
40 would assume responsibility for properly managing and disposing of building materials

1 potentially containing lead in accordance with all applicable federal, state, and local laws and  
2 regulations. Adherence to these regulatory requirements would reduce potential impacts to less  
3 than significant. No mitigation is proposed.

4 Polychlorinated Biphenyls (PCBs). PCBs may be present in the fluorescent light ballasts. The  
5 Washington statutes governing the designation of a material as PCB-containing require that any  
6 material with more than 2 parts per million PCBs be treated as a PCB-containing material. The  
7 acquiring entity would assume responsibility for properly managing and disposing of building  
8 materials potentially containing PCBs in accordance with all applicable federal, state, and local  
9 laws and regulations. Adherence to these regulatory requirements would reduce potential impacts  
10 to a less than significant. No mitigation is proposed.

#### 11 Short-term Construction (Earthwork)

12 Construction activities at NMCRC would include earthwork activities such as regrading and  
13 excavation. To meet redevelopment objectives the site elevation would be increased an  
14 additional 1 to 4 feet (0.3 to 1.2 meters). In addition, excavation of new subsurface utility  
15 corridors would be required. These earthwork activities are not likely to disturb subsurface  
16 petroleum-contaminated soil in the vicinity of Site 1, former AST area, and the former UST 2  
17 and UST 4 areas. Re-grading at the site will add 1 to 4 feet (0.3 to 1.2 meters) of clean fill soil. In  
18 addition, the top of the USTs is generally at 4 to 5 feet (1.2 to 1.5 meters) below ground surface.  
19 As discussed in Section 4.10 (*Water Resources*), potential erosion and sedimentation impacts  
20 associated with earthwork activities would be addressed through required conformance with the  
21 NPDES Construction Discharge Permit (and related locals standards) as well as requirements of  
22 the grading permit. Specifically, this would entail the preparation and implementation of a  
23 SWPPP and related monitoring/maintenance efforts to identify appropriate BMPs and ensure that  
24 applicable water quality standards related to erosion and sedimentation are met. If any evidence  
25 of contaminated soils is observed during grading (or other construction) activities, appropriate  
26 remediation would be implemented pursuant to applicable regulatory requirements (e.g., testing  
27 and appropriate disposal of contaminated soils).

#### 28 Long-term Operation and Maintenance

29 Land use under the proposed action could use and generate small amounts of hazardous  
30 substances in the proposed TOTE Vessel Maintenance Area. In addition, hazardous substances  
31 could be transported or stored in the YTTI storage yard. The presence of hazardous substances  
32 would create the potential for incidents of uncontrolled releases of hazardous materials to the  
33 environment through accidental spills, equipment failure, and other unanticipated events (for  
34 example, spills of petroleum could occur from trucks operating at the new terminals). However,  
35 no significant impacts related to hazardous materials use or hazardous materials waste generation  
36 are anticipated under the proposed action because federal, state, and local laws require  
37 procedures and practices to ensure that hazardous material are properly used, store, and disposed  
38 of to prevent or minimize injury to human health and the environment.

39 Long-term operation and maintenance activities under the proposed action would also involve  
40 continuing the on-going site investigations and/or remedial actions associated with offsite clean-  
41 up activities. There are two ongoing remedial actions that would need to continue simultaneously

1 to implementation of the proposed action (refer to Section 3.13 for additional information); each  
2 is described below.

3 *Mouth of the Hylebos Sediments:* Under the terms of an EPA Consent Decree, the Hylebos  
4 sediments offshore of NMCRC Tacoma are subject to the selected ongoing remedy of monitored  
5 natural recovery. Since the proposed action would not involve dredging or disturbing the bottom  
6 adjacent to the NMCRC in any manner, the ongoing monitored recovery of the Navy Bank  
7 sediments would not be impacted. No mitigation is proposed.

8 *Former Occidental Site:* Investigations associated with the former Occidental Chemical site  
9 include ongoing groundwater assessment (i.e., groundwater sampling) on a portion of NMCRC  
10 Tacoma. During the former Occidental Chemical NPL site investigation, solvent contamination  
11 was found in groundwater at the NMCRC site (see Section 3.13). In consideration of the long-  
12 term nature of the former Occidental site cleanup action and in consideration of the importance  
13 of coordinating both on-property and off-property cleanup actions with area planning and design,  
14 the Port of Tacoma has stated its desire to unite the different portions of the Occidental cleanup  
15 site under common ownership and to implement a long-term industrial reuse plan for the  
16 property that is intended to be compatible with and supportive of ongoing site remediation  
17 activities.

18 To accommodate the ongoing remedial activities at the former Occidental Chemical site, the  
19 proposed action would need to incorporate flexibility to ensure continued site access to support  
20 site remediation for the foreseeable future. This would include continued access to the  
21 monitoring well located at NMCRC Tacoma. This may also involve disruption of site areas if  
22 required for additional remedial activities, such as the installation of a groundwater treatment  
23 system to address the solvent plume at NMCRC Tacoma.

24 The predominant proposed features to be located on the impacted portions of NMCRC consist of  
25 paved terminal yard areas at the new TOTE and YTTI terminal. The Port anticipates that these  
26 yard areas would be beneficial to ongoing remediation efforts (e.g., by using paving of the yard  
27 areas to reduce groundwater recharge within some contaminated portions of the groundwater  
28 plumes prior to or in conjunction with development of a final site remediation plan). Further, the  
29 Port expects that these terminal yard areas could readily accommodate a variety of remediation  
30 structures or activities (e.g., installation of subsurface remediation systems such as are located  
31 within portions of the Earley Business Center [EBC]) where required by future EPA and Ecology  
32 remediation decisions, when such decisions are finalized. The EBC is located on the north end of  
33 the East Blair Peninsula. Ongoing cleanup activities at this site are being managed by the Army  
34 Reserve.

35 As part of the engineering design process for the redevelopment plan, the Port has been working  
36 to coordinate cleanup and development activities. This includes routine site redevelopment  
37 methods such as contaminated soil management (i.e., testing and appropriate soil disposal for  
38 contaminated soil generated during invasive construction activities) and provisions for worker  
39 health and safety protection during and after construction. Further, the Port has engaged EPA and  
40 Ecology in a process to determine what additional measures may be appropriate in order to  
41 implement the Proposed Actions, including additional early cleanup activities. Based upon the

1 Port's coordination of off-site investigations with the EPA and Ecology, no mitigation is  
2 proposed.

### 3 **Environmental Protection of Children from Environmental Health Risks and Safety Risks**

4 The disposal and reuse of the NMCRC site would not result in any disproportionate effect on  
5 children. The NMCRC site and surrounding area is industrial in nature, and does not contain any  
6 residential uses, parks, schools, or other uses where children would be present. Given the lack of  
7 children in the area, the disposal and reuse of the NMCRC site would not result in any  
8 disproportionate environmental health and safety risks to children.

#### 9 **4.13.2 Alternative 1**

### 10 **Routine Transport, Use, or Disposal of Hazardous Materials, Substances, or Wastes**

11 Under this alternative, the routine transport, use, or disposal of hazardous materials, substances,  
12 or wastes would be identical to the proposed action. All hazardous wastes and hazardous  
13 materials other than structural materials such as asbestos and LBP would be removed in  
14 accordance with the NMCRC hazardous waste management plan before the properties are  
15 transferred or conveyed.

### 16 **Hazardous Material Releases**

17 Potential short-term (construction) hazardous material impacts for this alternative would be  
18 essentially the same as those described above for the proposed action, based on the similar nature  
19 of related operations. Accordingly, potential impacts associated with construction-related  
20 hazardous material use/storage, and demolition-related debris generation (asbestos, lead paint,  
21 PCBs) would be less than significant, assuming conformance with all applicable regulatory  
22 requirements (as described for the proposed action).

23 As discussed for the proposed action, these earthwork activities are not likely to disturb  
24 subsurface petroleum-contaminated soil in the vicinity of Site 1, former AST area, and the  
25 former UST 2 and UST 4 areas. Re-grading at the site will add 1 to 4 feet (0.3 to 1.2 meters) of  
26 clean fill soil. In addition, the top of the USTs is generally at 4 to 5 feet (1.2 to 1.5 meters) below  
27 ground surface. As discussed previously, potential surface transport of soil (erosion and  
28 sedimentation) would be addressed through required conformance with the NPDES Construction  
29 Discharge Permit (and related locals standards) as well as requirements of the grading permit. In  
30 addition, as noted above in Section 4.13.1, if any evidence of contaminated soils is observed  
31 during construction activities, appropriate remediation would be implemented pursuant to  
32 applicable regulatory requirements (e.g., testing and appropriate disposal of contaminated soils).

33 Long-term hazardous materials and wastes impacts under this alternative would be essentially  
34 the same as those described for the proposed action, based on the fact that both development  
35 options would entail development of the entire NMCRC site for urban and/or industrial type  
36 uses. Specifically, the types of contaminants and conditions of concern under this alternative  
37 would be similar to those described for the proposed action. As described for the proposed  
38 action, this alternative would involve continuing the site investigations and/or remedial actions

1 associated with offsite clean-up activities (Hylebos sediments and the former Occidental  
2 Chemical site).

### 3 **Environmental Protection of Children from Environmental Health Risks and Safety Risks**

4 Similar to the proposed action, Alternative 1 would not result in any disproportionate effect on  
5 children. The NMCRC site and surrounding area is industrial in nature, and does not contain any  
6 residential uses, parks, schools, or other uses where children would be present. Given the lack of  
7 children in the area, the disposal and reuse of the NMCRC site would not result in any  
8 disproportionate environmental health and safety risks to children.

#### 9 **4.13.3 No Action Alternative**

10 No construction would occur under this alternative.

11 Under the No Action Alternative, all hazardous wastes and hazardous materials other than  
12 structural materials such as asbestos and LBP would be removed in accordance with the  
13 NMCRC hazardous waste management plan before the property was placed in inactive or  
14 caretaker status.

15 ACM left in existing buildings would not be impacted under the caretaker status. Normal  
16 maintenance operation in buildings would not release ACM.

17 The No Action Alternative would have no impact to hazardous materials and environmental  
18 contamination on NMCRC. Maintenance would be undertaken so that human health and the  
19 environment would be protected.

20 Under this alternative, the ongoing site investigations and/or remedial actions associated with  
21 offsite clean-up activities (Hylebos sediments and the former Occidental Chemical site) would  
22 also continue. The Navy would continue to provide access to Occidental Chemical site  
23 investigation monitoring well located on NMCRC property.

24 The No Action Alternative would not result in any disproportionate environmental health and  
25 safety risks to children.

## CHAPTER 5.0

### CUMULATIVE PROJECTS AND IMPACTS

CEQ regulations implementing NEPA require that the cumulative impacts of a proposed action be assessed (40 C.F.R. Parts 1500-1508). A cumulative impact is an “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 C.F.R. § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 C.F.R. § 1508.7). CEQ’s guidance for considering cumulative effects states that NEPA documents “should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant” (CEQ 1997). In this section, the region of influence for each resource is the same as described in Chapter 4. Cumulative projects within close proximity to the NMCRC site were identified for analysis. While it is likely that many other projects may occur in this area (i.e., construction projects, roadway modifications, dredging activities), most such projects would be either too small or too remote to have a meaningful interaction with the proposed action. Cumulative projects considered below are either similar to the proposed action, large enough to have far reaching effects, or in proximity to the proposed action.

#### 5.1 CUMULATIVE PROJECTS

Five local nonmilitary developments or plans are considered in the cumulative analysis. These projects include the Blair-Hylebos Terminal Redevelopment Project, The Point at Northshore, Emerald Queen Casino Expansion, East Blair 1 Terminal, and Puyallup Tribe/SSA Marine Container Terminal. Each of these projects is described below and shown on Figure 5-1.

##### 5.1.1 Blair-Hylebos Terminal Redevelopment Project

As previously discussed in Section 1.4, the Port of Tacoma is currently preparing an EIS for the Blair Peninsula Redevelopment Project. The redevelopment area includes approximately 600 acres (245-ha) and includes four main components which are discussed in detail in Section 1.4: TOTE, YTTI, Washington United Terminals, and RRI.

##### 5.1.2 The Point at Northshore

The Point at Northshore is a proposed residential development located in Northeast Tacoma. The proposed development consists of 864 residential units that would be located on the site of the current Northshore Golf Course. Build-out of The Point at Northshore is estimated for completion in 2012.

##### 5.1.3 Emerald Queen Casino Expansion

The Emerald Queen Casino is located in Fife, Washington, at the intersection of 59<sup>th</sup> Avenue East and SR 99. The proposed expansion consists of the construction of a parking structure and improvements to the existing casino and hotel. The new parking structure would result in the addition of 1,240 parking stalls. The proposed expansion is anticipated to be complete by 2015.



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## Cumulative Projects

DRAFT ENVIRONMENTAL ASSESSMENT FOR DISPOSAL AND REUSE OF NMCRC TACOMA

Figure 5-1

#### 1 **5.1.4 East Blair 1 Terminal**

2 The East Blair 1 Terminal is proposed for construction on the Blair Peninsula. The expected  
3 completion year for the terminal is 2013. The East Blair 1 Terminal would include a 2,300-foot  
4 (705-meter) wharf, a 110-acre (45-ha) container yard, and an on-dock intermodal rail yard.

#### 5 **5.1.5 Puyallup Tribe/SSA Marine Container Terminal**

6 The container terminal will have two berths for ships. It will be located on 180 acres (73-ha),  
7 with both the Puyallup Tribe and SSA Marine contributing property. As part of the agreement,  
8 SSA Marine will transfer ownership of its 52-acre (21-ha) parcel on the East Blair Waterway to  
9 the Puyallup Tribe. Construction of the facility is estimated for completion in 2012.

### 10 **5.2 ANALYSIS OF CUMULATIVE IMPACTS**

11 The cumulative impacts of these concurrent developments are discussed by resource area below.  
12 Implementing Navy disposal action, as essentially a transfer of title, would not contribute to any  
13 direct cumulative impacts to any of the resources analyzed in this document. Therefore, the  
14 discussion of cumulative impacts for each resource does not include further analysis of Navy  
15 disposal. Relevant cumulative impacts associated with the NMCRC reuse are described below.

#### 16 **5.2.1 Land Use**

17 The proposed action and Alternative 1 would result in the development of the site with additional  
18 industrial uses related to Port and/or cargo container facilities, which would be consistent with  
19 existing zoning and land use designations for the site. While both the proposed action and  
20 Alternative 1 would result in a change from the existing military use that has occurred at the site  
21 to industrial and Port-related uses, the change would be similar in nature to the other base  
22 closures that have occurred. Combined with future regional development, each reuse alternative  
23 would contribute to a cumulative development of the Peninsula with Port-related and maritime  
24 uses. The increased conversion of the Blair Peninsula to these uses would be consistent with land  
25 use plans of the City of Tacoma and the Port. These plans contain policies, implementation  
26 measures, and programs designed to ensure that future development would be compatible with  
27 existing and planned land uses, would proceed in an orderly fashion, and would contribute to  
28 community goals and objectives for land use. The proposed action and Alternative 1 would be  
29 implemented in a manner that would not create land use conflicts with existing or future land  
30 uses in the area. Therefore, the reuse alternatives' incremental contribution to regional  
31 cumulative land use impacts would not be significant.

32 Several cumulative projects would occur on the Blair Peninsula: the Blair-Hylebos Terminal  
33 Redevelopment Project, the East Blair 1 Terminal, and the Puyallup Tribe/SSA Marine  
34 Container Terminal. Each of these projects, in combination with either the proposed action or  
35 Alternative 1 would result in further conversion of the Blair Peninsula to maritime and  
36 Port-related uses. These uses are consistent with the long-term planning for the Blair Peninsula,  
37 and would not result in cumulative land use impacts. The remaining two cumulative projects,  
38 The Point at Northshore and the Emerald Queen Casino Expansion, are not located on the Blair

1 Peninsula. The Point at Northshore is located approximately 1.4 miles (2.3 km) north of the  
2 NMCRC site, and the Emerald Queen Casino is located approximately 3 miles (5 km) southwest  
3 of the NMCRC site. These projects are not located in near enough proximity to the site to result  
4 in land use incompatibilities. Therefore, no significant cumulative land use impacts would  
5 occur.

### 6 **5.2.2 Visual Resources**

7 The majority of the Blair Peninsula is characterized by Port-related maritime activities. The  
8 Peninsula consists of relatively flat land, covered by existing buildings, support structures, and  
9 infrastructure. In combination with the three other projects that are proposed for the Blair  
10 Peninsula, the cumulative visual effect would result in the continuation of development of Port-  
11 related and maritime uses that are similar in nature to the types of uses already occurring in the  
12 immediate vicinity. Implementation of either the proposed action and Alternative 1 would result  
13 in similar visual changes at the NMCRC site – the removal of existing structures and the  
14 construction of Port-related and maritime uses. Because these uses would be similar to those  
15 already occurring in the area, the development of either the proposed action or Alternative 1, in  
16 combination with other projects proposed for development on the Blair Peninsula, would not  
17 result in significant cumulative effects on visual resources. Visual impacts from construction  
18 activities, such as from construction staging or lighting, would be short-term. These impacts,  
19 combined with potential construction impacts from NMCRC site reuse construction, would not  
20 be cumulatively significant. Given the industrial and developed nature of the area, the  
21 development of cumulative projects in combination with the proposed action or Alternative 1,  
22 the new light sources associated with these projects would not result in significant impacts due to  
23 the number of existing light sources in the area. The Point at Northshore and Emerald Queen  
24 Casino Expansion are located at a distance from the NMCRC site, and would not contribute to  
25 significant changes in the viewshed or impact visual resources when considered in combination  
26 with the proposed action or Alternative 1.

### 27 **5.2.3 Socioeconomics**

28 The proposed action and Alternative 1 would contribute to the generation of jobs; however,  
29 these jobs are anticipated to be filled by persons living locally. Four of the five cumulative  
30 projects would generate new jobs, while the proposed Point at Northshore project would result in  
31 the construction of 864 dwelling units. The City of Tacoma currently has an approximately nine  
32 percent vacancy rate for residential dwellings. It is anticipated that jobs created as a result of  
33 cumulative projects and the NMCRC site reuse would be filled by persons already living within  
34 the area; however, if some relocation to the area occurs as a result, the existing residential  
35 vacancies and the proposed 864 residential-unit project at Northshore could accommodate  
36 persons relocating without causing the need for the construction of large amounts of residential  
37 dwelling units. Therefore, cumulatively, the proposed action or Alternative 1, in combination  
38 with other projects occurring in the area would not have a significant effect on regional housing  
39 demand and would therefore not be cumulatively considerable.

#### 1 **5.2.4 Cultural Resources**

2 Resuse of the NMCRC site would result in the removal of all structures at the site; however,  
3 none of the structures are considered eligible for the National Register of Historic Places and  
4 NMCRC reuse would not result in any significant impacts to historic resources. Therefore, the  
5 reuse of the NMCRC site would not contribute to a significant cumulative impact to historic  
6 resources. Neither the proposed action nor Alternative 1 would be anticipated to result in  
7 significant impacts to archaeological resources, due to fill activities and industrial activities that  
8 have historically occurred on the site and surrounding area. It is anticipated that the three other  
9 cumulative projects proposed for the Blair Peninsula would similarly have low potential for  
10 archaeological resources for the same reasons. While the remaining two cumulative projects may  
11 or may not have potential to impact archaeological resources, the reuse of the NMCRC site via  
12 the proposed action or Alternative 1 would not contribute to cumulatively considerable impacts  
13 to archaeological resources.

#### 14 **5.2.5 Transportation**

15 The traffic analysis presented in Section 4.5 calculated traffic to be generated by the proposed  
16 action and Alternative 1, added it to projected traffic from probable future development,  
17 distributed the trips to the transportation network, and then determined the impact. The  
18 background traffic forecasts considered development of pipeline projects including The Point at  
19 Northshore, Emerald Queen Casino Expansion, and the East Blair 1 Terminal. The analysis  
20 assumed a build out year of 2013.

21 The proposed action and Alternative 1 would contribute a small increment to projected traffic  
22 volumes in the area. The proposed action would result in 120 new daily trips, while Alternative 1  
23 would reduce trips attributable to the NMCRC site by 51. The proposed action and Alternative 1  
24 would both reduce PM peak hour trips attributable to the site, as industrial type uses typically  
25 generate higher traffic during off-peak hours when roadways are less congested. Given that  
26 neither alternative would result in significant traffic impacts, and given that the traffic forecasts  
27 used in the analysis included traffic generated by the cumulative projects identified, the disposal  
28 and reuse of the NMCRC site would not contribute to cumulatively significant traffic impacts.

#### 29 **5.2.6 Air Quality**

30 The geographic scope of impacts on air quality is the Puget Sound area. Falling within the  
31 boundaries of the Puget Sound area are stationary source emissions within the NMCRC site,  
32 mobile source emission from people travelling to and from the NMCRC site, and power plant  
33 emissions from facilities providing power to the site. All of these affect the concentration of  
34 pollutants at locations distant from the site within the Puget Sound area. Cumulative air quality  
35 concerns include potential local CO effects due to cumulative traffic congestion and cumulative  
36 regional emissions of ozone precursors and particulate matter.

37 Ozone precursors and particulate matter emissions associated with NMCRC site reuse (see  
38 Tables 4.6-1 and 4.6-2 in section 4.6) would be added to similar emissions from other sources of  
39 regional growth and would contribute to cumulative air pollutant emissions in the Puget Sound

1 Area. Cumulative air quality issues in the Puget Sound area are being addressed through  
2 compliance with Washington-adopted standards. The Puget Sound area is classified as  
3 attainment/unclassified for the NAAQS for all pollutants except PM<sub>2.5</sub>, for which it was recently  
4 designated as a nonattainment area. The proposed action and Alternative 1 would not have  
5 significant cumulative air quality impacts because projected reuse-generated emissions would  
6 not exceed *de minimis* thresholds for CO and PM<sub>10</sub> and are below major source thresholds of 100  
7 tons per year for all other pollutants. While NMCRC reuse, in combination with other  
8 development occurring within the area, would generate emissions that could contribute to  
9 significant cumulative air quality impacts, individual projects that would exceed emission  
10 thresholds would be required to implement measures to reduce emissions, thus reducing any  
11 significant cumulative air quality impacts.

### 12 **5.2.7 Noise**

13 Noise conditions are inherently localized, because noise levels decrease quickly with increasing  
14 distance from the noise source. Very few noise sources are audible at distances beyond two miles  
15 (3.2 km). Cumulative noise effects are limited primarily to local effects of cumulative traffic  
16 conditions or combined effects of adjacent development. Given the industrial nature of the Blair  
17 Peninsula, the reuse of the NMCRC, in combination with cumulative projects in the area, would  
18 not result in cumulatively considerable noise impacts.

### 19 **5.2.8 Biological Resources**

20 The NMCRC site reuse (the proposed action or Alternative 1) would not combine with other  
21 projects to result in cumulatively significant effects on biological resources. The proposed action  
22 and Alternative 1 would not result in any direct impacts to biological resources associated with  
23 the terrestrial portions of the NMCRC site. While there are sensitive species located within the  
24 Hylebos and Blair waterways which could be adversely affected as a result of degradation of  
25 water quality if the NMCRC site reuse results in the release of contaminants, compliance with  
26 NPDES Construction Discharge Permit (and related local standards), the reuse would not impact  
27 these species. Similarly, the three cumulative projects that are also located on the Blair Peninsula  
28 could adversely affect species in the Hylebos and Blair Waterways, contributing to a cumulative  
29 impact. However, these projects would also require compliance with NPDES Construction  
30 Discharge Permit (and related local standards), ensuring that no significant, cumulative impact to  
31 sensitive species and habitat in the waterways would occur. The other two cumulative projects  
32 are located at some distance from the waterway and would not contribute to any cumulative  
33 biological impacts of sensitive species located in the waterways. The proposed action,  
34 Alternative 1, and each of the cumulative projects would be required to adhere to applicable  
35 requirements to protect biological species, including the MBTA. Compliance with these  
36 requirements would ensure cumulatively considerable impacts to biological resources would be  
37 less than significant.

### 38 **5.2.9 Geology and Soils**

39 The NMCRC site is in a seismically active area subject to periodic earthquakes. Both the  
40 proposed action and Alternative 1, in conjunction with other projects occurring in the area,

1 would expose more persons to earthquake hazards. Other geotechnical constraints, such as  
2 liquefaction and lateral spreading, might present hazards in specific areas. Adherence to  
3 recommendations contained in site-specific geotechnical reports, building codes, and grading  
4 ordinances, and implementation of region-wide erosion control plans would avoid significant  
5 cumulative impacts because exposure would not result in risks higher than commonly accepted.

#### 6 **5.2.10 Water Resources**

7 Possible cumulative impacts from development of structures in coastal areas include impacts  
8 associated with changes in flooding patterns and water quality impacts. While the proposed  
9 action or Alternative 1 would result in alterations to drainage facilities on-site, overall existing  
10 drainage patterns would not be substantially altered. Similarly, other projects occurring in the  
11 area are likely to include modifications to drainage on each site; however, as Blair Peninsula and  
12 surrounding areas are urbanized and contain extensive development, the drainage alternations  
13 that could occur with other projects would likely not significantly alter overall drainage patterns  
14 in the area. Land use and drainage patterns would not be substantially altered and no impacts are  
15 expected in these areas. Construction and operational activities of cumulative projects occurring  
16 in the area could result in potential water quality impacts associated with erosion, hazardous  
17 materials use, and demolition debris. However, the proposed action and Alternative 1 and other  
18 projects occurring in the area would be required to comply with applicable NPDES requirements  
19 ensuring cumulative water quality impacts would be less than significant.

#### 20 **5.2.11 Utilities**

21 The proposed action or Alternative 1, in combination with cumulative regional development,  
22 would result in increased demand for utilities (potable water and fire protection distribution,  
23 wastewater collection and treatment, stormwater collection, electrical and natural gas,  
24 telecommunications, and solid waste systems) in the City of Tacoma. The increased regional  
25 demand could require construction of new and enlarged utility systems and upgrading of existing  
26 utility infrastructure. Construction of utility systems and facilities to serve regional growth and  
27 development would proceed under the direction of the utility providers. Both the proposed action  
28 and Alternative 1 would include development of utility systems and facilities that would  
29 adequately serve the reuse development without impacting services in the region and therefore  
30 would not contribute to a cumulatively considerable impact.

#### 31 **5.2.12 Public Services**

32 The proposed action and Alternative 1, in conjunction with other area development, would result  
33 in a cumulative increase in demand for public services. However, development restrictions  
34 would not allow for construction of a reuse alternative until all public services can be provided.  
35 Further, reuse of NMCRC would not result in the development of other projects in the area  
36 which may further increase the demand for public services. Therefore, NMCRC reuse  
37 development under any of the proposed action or Alternative 1 would not incrementally  
38 contribute to a cumulative impact on the ability to provide these services.

1 **5.2.13 Hazardous Materials and Waste**

2 Similar reuse of contaminated properties with residual levels of contamination could result in a  
3 greater potential for exposure of the public to hazardous substances. Implementing various  
4 remedial actions pursuant at each of these sites to remove, manage, or isolate any potentially  
5 hazardous substances prior to conveyance would minimize the potential for a significant  
6 cumulative impact.

7 Implementation of the proposed action and Alternative 1 would result in the use of hazardous  
8 materials and the generation of hazardous wastes at the NMCRC site. Similar to the NMCRC  
9 site, future development in the area would be required to comply with all applicable federal,  
10 state, and local regulations governing the use, storage, transfer, and disposal of hazardous  
11 materials. Additionally, future development in the vicinity of the NMCRC site would be required  
12 to cooperate with ongoing site investigations and/or remedial actions occurring in the area.  
13 Therefore, development at NMCRC under any of the proposed action or Alternative 1 would not  
14 incrementally contribute to a cumulative impact from hazardous materials or waste.

## CHAPTER 6.0 OTHER CONSIDERATIONS REQUIRED BY NEPA

This chapter addresses additional considerations required by NEPA, including the irreversible or irretrievable commitment of resources; the relationship between short-term uses of the environment and long-term productivity, the identification of any irreversible and irretrievable commitments of resources; means to mitigate or monitor environmental impacts; probable adverse environmental effects that cannot be mitigated; and a discussion of Executive Order 12898 (Environmental Justice, 59 Fed. Reg. 7629 [Feb 11, 1994]) and Executive Order 13045 (Environmental Health and Safety Risks to Children, 62 Fed. Reg. 19885 [April 21, 1997]).

### **6.1 Relationship Between Local Short-term Use of the Human Environment and Maintenance and Enhancement of Long-term Natural Resource Productivity**

NEPA requires an analysis of the relationship between an action's short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. The analysis covers the extent to which both disposal and reuse involve tradeoffs between short-term environmental gains at the expense of long-term losses, or vice versa. Because the NMCRC site has been developed, redevelopment under the Proposed Action or Alternative 1 would do little to negatively affect the short or long-term productivity of the area. Disposal and subsequent reuse of NMCRC could however result in both short- and long-term environmental gains that would enhance productivity of the site. Improved access to the Blair Peninsula as a result of the Taylor Way extension and realignment and improved utility infrastructure for the peninsula would be both a short- and long-term gain. Long-term gains would also include increases in jobs as a result of the overall Port redevelopment project (which the disposal and subsequent reuse of the NMCRC site would contribute to).

### **6.2 Irreversible or Irretrievable Commitment of Natural or Depletable Resources**

NEPA requires that an EA analyze the extent to which the proposed alternatives' primary and secondary effects would commit nonrenewable resources to uses that future generations probably would be unable to reverse. Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. This includes the use of non-renewable resources such as metal and fuel, and other natural or cultural resources. These resources are irretrievable in that they would be used for this action when they could have been used for other purposes. Human labor is also considered an irretrievable resource. Another impact that falls under this category is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment. Disposal and subsequent reuse of Navy property would constitute an irreversible or irretrievable commitment of military resources and land uses. Reuse of the property would provide for responsible long-term resource management and makes no irreversible resource commitments.

1 Implementing any of the reuse alternatives would require short-term commitments of both  
2 renewable and nonrenewable energy and material resources for demolition of on-site structures,  
3 and commitments for construction of the structures and infrastructure improvements required for  
4 implementation. These developments would represent a very large commitment of financial  
5 resources but would not represent an irreversible commitment of NMCRC surplus property to  
6 the proposed uses.

7 Equipment used during demolition activities at NMCRC would consume petroleum fuels, such  
8 as gasoline and diesel. This temporary energy expenditure would occur over the short term and  
9 would not substantially increase the overall demand for electricity or natural gas. Implementing  
10 the reuse of the site as part of the overall Port redevelopment plan would consume large volumes  
11 of nonrenewable fossil fuel as a result of increased trips generated by trucks, trains, and ships.  
12 The increase in development likely would result in an increase in the annual amount of energy  
13 consumed in heating, air conditioning, and other operational uses of energy. Infrastructure  
14 improvements would be provided as part of the overall Port redevelopment plan to meet  
15 increased demand.

16 The proposed action would result in minor irreversible or irretrievable commitment of resources.  
17 Under the proposed action, construction would require the consumption of materials typically  
18 associated with construction (e.g., concrete, etc). In addition, the use of construction vehicles at  
19 the location would result in the consumption of additional fuel, oil, and lubricants. The use of  
20 electrical power during construction would also result in an irreversible or irretrievable  
21 commitment of resources in the form of fossil fuel. The proposed action would result in the  
22 development of the NMCRC site as a part of the overall Port redevelopment plan. The  
23 commitment of resources for construction, including construction materials and fuels, would be  
24 an irreversible or irretrievable commitment of resources; however, the proposed action would  
25 only be a small piece of the overall construction of the Port redevelopment plan, and the  
26 proposed action's commitment of irretrievable resources is small fraction of those required for  
27 the overall redevelopment plan.

### 28 **6.3 Means to Mitigate and/or Monitor Adverse Environmental Impacts**

29 Measures to compensate for direct effects to hazardous materials are incorporated into the  
30 proposed action. By including these compensatory and monitoring measures in the project  
31 design, the proposed action would not result in any significant adverse environmental impacts.  
32 Therefore, no additional mitigation and/or monitoring measures would be implemented.

### 33 **6.4 Any Probable Adverse Environmental Effects that Cannot be Avoided and are** 34 **Not Amenable to Mitigation**

35 There are no probable adverse environmental effects that cannot be avoided or are not amenable  
36 to mitigation.

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