ENVIRONMENTAL CHECKLIST

for the

Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project

Port of Seattle SEPA File # 17-07

prepared for

Port of Seattle

September 8, 2017

EA Engineering, Science, and Technology, Inc., PBC
Cultural Resource Consultants
Transpo Group

PREFACE

The purpose of this Environmental Checklist is to identify and evaluate probable environmental impacts that could result from the ***Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project*** and to identify measures to mitigate those impacts. "In 2015, the Port of Seattle initiated a planning process concerned with the upland assets of the Fishermen's Terminal property. The objective was to determine how the uplands can best support the homeporting activity of the commercial fishing fleet. The evolving needs of the fleet were considered along with the aging structures on the uplands. A comprehensive stakeholder outreach program was part of the planning process. The ***Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project*** would involve redevelopment of the **Gateway** site in up to 86,250 sq. ft. of marine sales and services, with accessory office and warehouse uses, the **West Wall** site in up to 48,200 sq. ft. of maritime flex-industrial and 33,000 sq. ft. of exterior open storage and the **Seattle Ship Supply** in up to 26,000 sq. ft. of workforce and maritime incubator uses.

The State Environmental Policy Act (SEPA)[1] requires that all governmental agencies consider the environmental impacts of a proposal before the proposal is decided upon. This Environmental Checklist has been prepared in compliance with the SEPA Rules, effective April 4, 1984, as amended (Chapter 197-11), Washington Administrative Code; and Port of Seattle SEPA Resolution No. 3650.

This document is intended to serve as SEPA review for site preparation work, building construction and operation of the proposed development comprising the ***Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project***. Analysis associated with the proposed project contained in this Environmental Checklist is based on plans for the project, which are on-file with the Port of Seattle. While not construction-level in detail, the schematic plans accurately represent the eventual size, location and configuration of the proposed structures and are considered adequate for analysis and disclosure of environmental impacts.

This Environmental Checklist is organized into three major sections. *Section A* of the Checklist (starting on page 1) provides background information concerning the *Proposed Action* (e.g., purpose, proponent/contact person, project description, project location, etc.). *Section B* (beginning on page 9) contains the analysis of environmental impacts that could result from implementation of the proposed project, based on review of major environmental parameters. This section also identifies possible mitigation measures. *Section C* (page 43) contains the signature of the proponent, confirming the completeness of this Environmental Checklist.

Relevant project analyses that served as a basis for this Environmental Checklist include: the *Greenhouse Gas Emissions Worksheet* (EA, 2017), *Historic/Cultural Resources Analysis (CRC*, 2017*);* and *Transportation Impact Analysis* (Transpo Group, 2017). These reports are on-file at the Port of Seattle, and are included as appendices to this SEPA Checklist.

[1] Chapter 43.21C. RCW

Table of Contents

Page

List of Figures

Figure ***Page***

Table ***Page***

PURPOSE

The State Environmental Policy Act (SEPA), Chapter 43.21 RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. The purpose of this checklist is to provide information to help identify impacts from the proposal (and to reduce or avoid impacts, if possible) and to help the Port of Seattle to make a SEPA threshold determination.

A. BACKGROUND

1. Name of Proposed Project:

Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project (Port of Seattle SEPA File # 17-07)

2. Name of Applicant:

Port of Seattle

3. Address and Phone Number of Applicant and Contact Person:

Paul Meyer, Manager Maritime Environmental Programs
Port of Seattle, Pier 69
2811 Alaskan Way
Seattle, WA
206-787-3127
Meyer.p@portseattle.org

4. Date Checklist Prepared

August 2017

5. Agency Requesting Checklist

Port of Seattle (the Port)

6. Proposed Timing or Schedule (including phasing, if applicable):

The ***Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project*** analyzed in this Environmental Checklist involves site preparation work, construction and operation of three projects within the terminal: the **Gateway**, **West Wall** and **Seattle Ship Supply** projects. Site preparation and construction is expected to begin in 2017 with build-out and building occupancy of the three projects by mid-2020.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Yes. A Long-Term Strategic Plan has been prepared for Fisherman's Terminal, however, no other specific development is planned for at this time.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal:

Past studies used to prepare this SEPA Checklist include:

- *Historical Report Soil and Ground Water Conditions* (Pinnacle 2009);
- *Geotechnical Report, South Wall Repair* (PanGEO 2000, 2002);
- *Geotechnical Report, West Bulkhead Rehabilitation* (PanGEO 2000);
- *Geotechnical Report, Fishermen's Terminal Electrical Upgrade Project* (Shannon and Wilson 1999);
- *Subsurface Exploration, Net Shed* (Rittenhouse-Zeman 1981);
- *Limited Good Faith Inspection – Building C-9 Demolition* (Port of Seattle Construction Services (PCS) 2017);
- *Limited Good Faith Inspection – Building C-12 Demolition* (Port of Seattle Construction Services (PCS) 2017);
- *Limited Good Faith Inspection – Net Shed 7 Demolition* (PCS 2017); and
- *Limited Good Faith Inspection – Net Shed 8 Demolition* (PCS 2017).

Studies prepared specifically for this SEPA Checklist include:

- *Greenhouse Gas Emissions Worksheet* (EA 2017);
- *Historic/Cultural Resources Analysis* (CRC 2017); and
- *Transportation Impact Analysis* (Transpo Group 2017).

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain:

There are no other applications that are pending approval for the ***Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project***.

10. List any government approvals or permits that will be needed for your proposal, if known:

The following approvals or permits are anticipated to be required for proposed redevelopment at all the sites (**Gateway**, **West Wall** and **Seattle Ship Supply**), unless noted for a specific project(s).

State and Regional Agencies

Washington Department of Ecology

- Construction General NPDES Permit

Seattle-King County Department of Health

- Plumbing Permits

Local Agencies

City of Seattle

Department of Construction and Inspections **-- permits/approvals associated with the proposed project, including:**

- Demolition Permits *(for **Gateway** site)*
- Grading Permit
- Building Permits
- Mechanical Permits
- Electrical Permits
- Elevator Permits (if necessary)
- Certificates of Occupancy
- Comprehensive Drainage Control Plan approval
- Shoreline Substantial Development (SSD) *(for **West Wall** and **Seattle Ship Supply** sites)*

Seattle Department of Transportation (SDOT)

- Street Use Permits *(temporary—construction-related and for any permanent curb cuts)*

11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

The Port of Seattle is proposing redevelopment in three portions of the approximately 76-acre Fishermen's Terminal. Proposed redevelopment at the **Gateway**, **West Wall** and **Seattle Ship Supply** sites is described below and summarized in **Table 1**.

Gateway

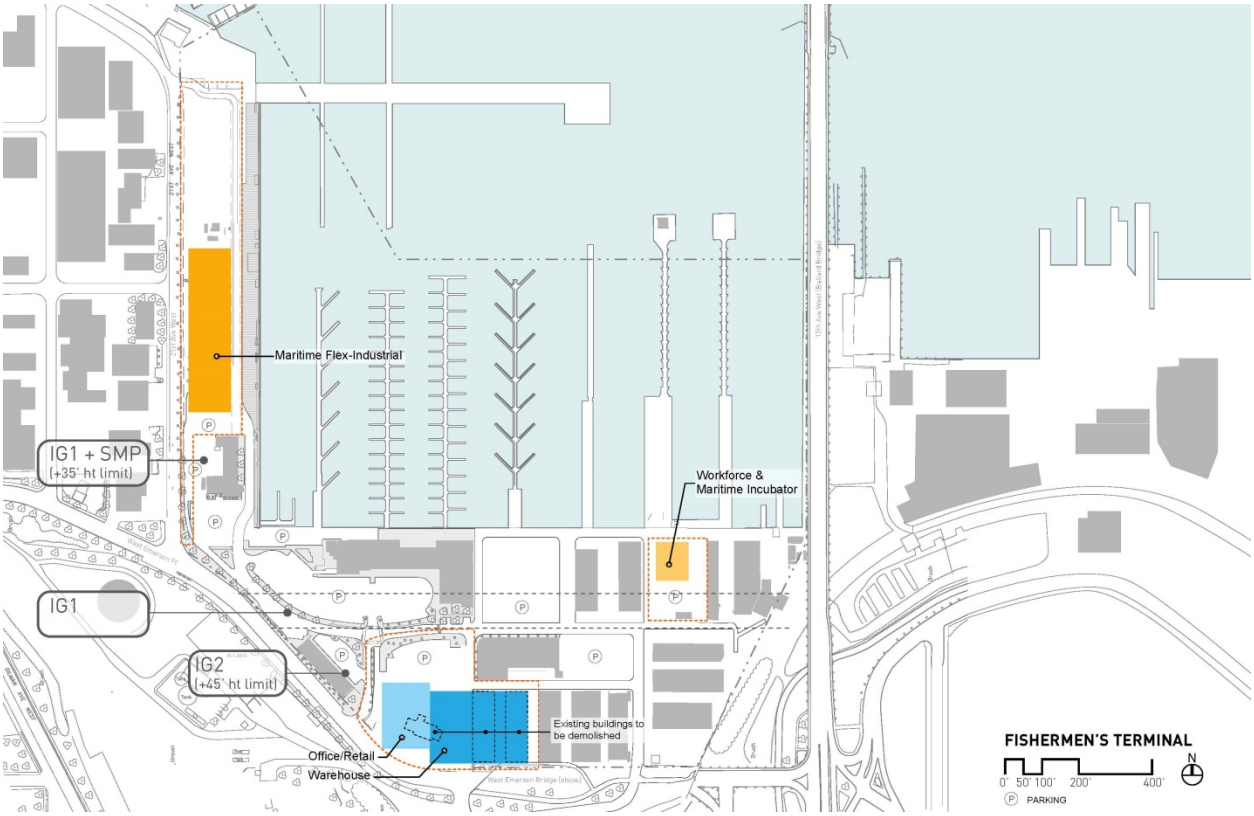
Building, Uses and Design

The Gateway redevelopment would consist of a new up to 45-foot high, 86,250-sq. ft. building. The proposal would include: 21,000 sq. ft. of marine sales and services, 55,000 sq. ft. of warehouse and 10,250 sq. ft. of office uses (see **Figure 1** for the conceptual site plan). Building design would consider contextual materials that relate to the surrounding maritime industrial setting.

Circulation and Parking

Parking would be provided for the Gateway redevelopment within the existing surface parking stalls in Fishermen's Terminal.

Figure 1
Conceptual Site Plan



West Wall

Building, Uses and Design

The West Wall redevelopment would consist of a new up to 35-foot high, 48,200-sq. ft. building. Maritime flex-industrial uses consisting of light-industrial small business uses supporting water-related activities are proposed in the new building. Such uses could include warehouse, light manufacturing, general commercial, and accessory office. The proposal would also include 33,000 sq. ft. of exterior open storage (see **Figure 1** for the conceptual site plan). Like the new Gateway building, building design would consider contextual materials that relate to the surrounding maritime industrial setting.

Circulation and Parking

Parking for 20 vehicles and a bike lane would be provided along 21st Avenue W. Parking for additional vehicles would be provided for the West Wall redevelopment within the existing surface parking stalls in the Fishermen's Terminal.

Seattle Ship Supply

Building, Uses and Design

The Seattle Ship Supply redevelopment would consist of renovating the existing 26,000-sq. ft. building and constructing a new up to 35-foot high, approximately 8,000-sq. ft. addition for workforce and maritime incubator uses including uses that further maritime job generation, and could include maritime training space. The incubator space could include workshop/warehouse space for light fabrication and accessory office space with business support resources for early stage maritime-related businesses (see **Figure 1** for the conceptual site plan). Like the new Gateway and West Wall buildings, building design would likely consider contextual materials that relate to the surrounding maritime industrial setting, although the design has yet to be finalized.

Circulation and Parking

Parking for vehicles would be provided for the Seattle Ship Supply redevelopment within the existing surface parking stalls in Fishermen's Terminal.

Table1
SUMMARY OF PROPOSED REDEVELOPMENT

Land Use	Gateway (sq. ft.)	West Wall (sq. ft.)	Seattle Ship Supply (sq. ft.)	Total (sq. ft.)
Marine Sales & Services	21,000	_	_	21,000
Warehouse	55,000	_	_	55,000.
Office	10,250	_	_	10,250
Maritime Flex-Industrial	_	48,200	_	48,200
Exterior Storage	_	33,000	_	33,000

Workforce & Maritime Incubator	_	_	26,000	26,000
Total	**86,250**	**81,200**	**26,000**	**193,540**
Land Use	**Gateway (sq. ft.)**	**West Wall (sq. ft.)**	**Seattle Ship Supply (sq. ft.)**	**Total (sq. ft.)**
Existing Building to be Renovated	_	_	18,000	18,000
Existing Buildings to be Demolished	26,410	_	_	26,410
Net New Development	**59,840**	**81,200**	**8,000**	**149,040**

Source: Port of Seattle, 2017.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any. If a proposal would occur over a range of area, provide the range or boundaries of the site(s).

The three proposed redevelopment sites are located within the Port of Seattle's Fishermen's Terminal in Seattle's Interbay neighborhood, east of the Hiram M. Chittendon Locks and immediately west of the Ballard Bridge (see **Figure 2**). The approximately 76-acre Fishermen's Terminal is bounded by Salmon Bay to the north, 15th Avenue W to the east, W Emerson Place to the south and 21st Avenue W to the west. The primary street address for the terminal is: 1511 W Thurman Street. The legal description for Fishermen's Terminal is on-file with the Port of Seattle (SEPA File # 17-07). See **Figure 3** for existing site conditions.

Gateway
The Gateway site is in the south portion of the Fishermen's Terminal. The site is bounded by Net Shed N-6 to the east and W Emerson Place to the south.

West Wall
The West Wall site is in the west portion of the Fishermen's Terminal, west of Dock 9. The site is bounded by a used oil station and gated storage areas for fishing gear to the north, a surface parking lot for the Westwall Building (4005 20th Avenue W, Building C-3) to the south and 21st Avenue W to the west.

Seattle Ship Supply
The Seattle Ship Supply site is in the east portion of Fishermen's Terminal, immediately south of Dock 4.

Figure 2
Regional and Vicinity Map

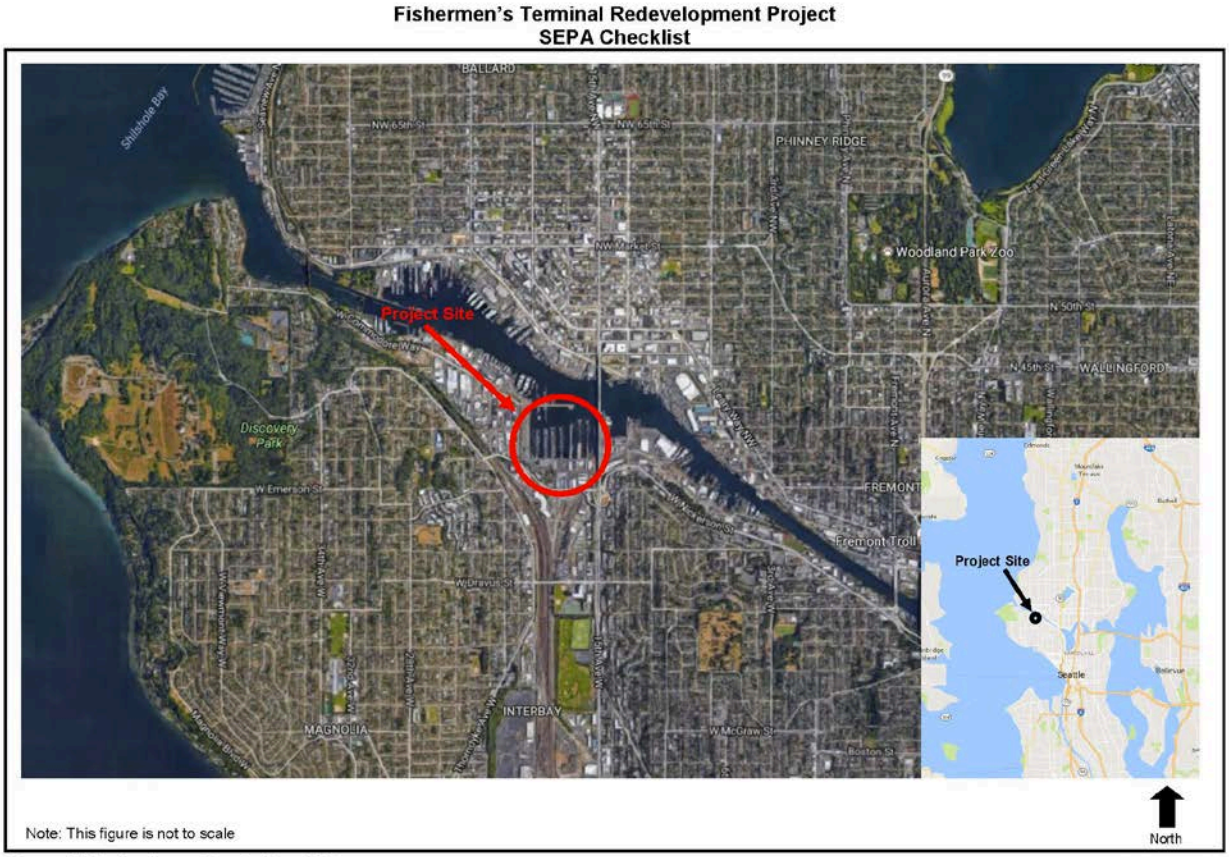
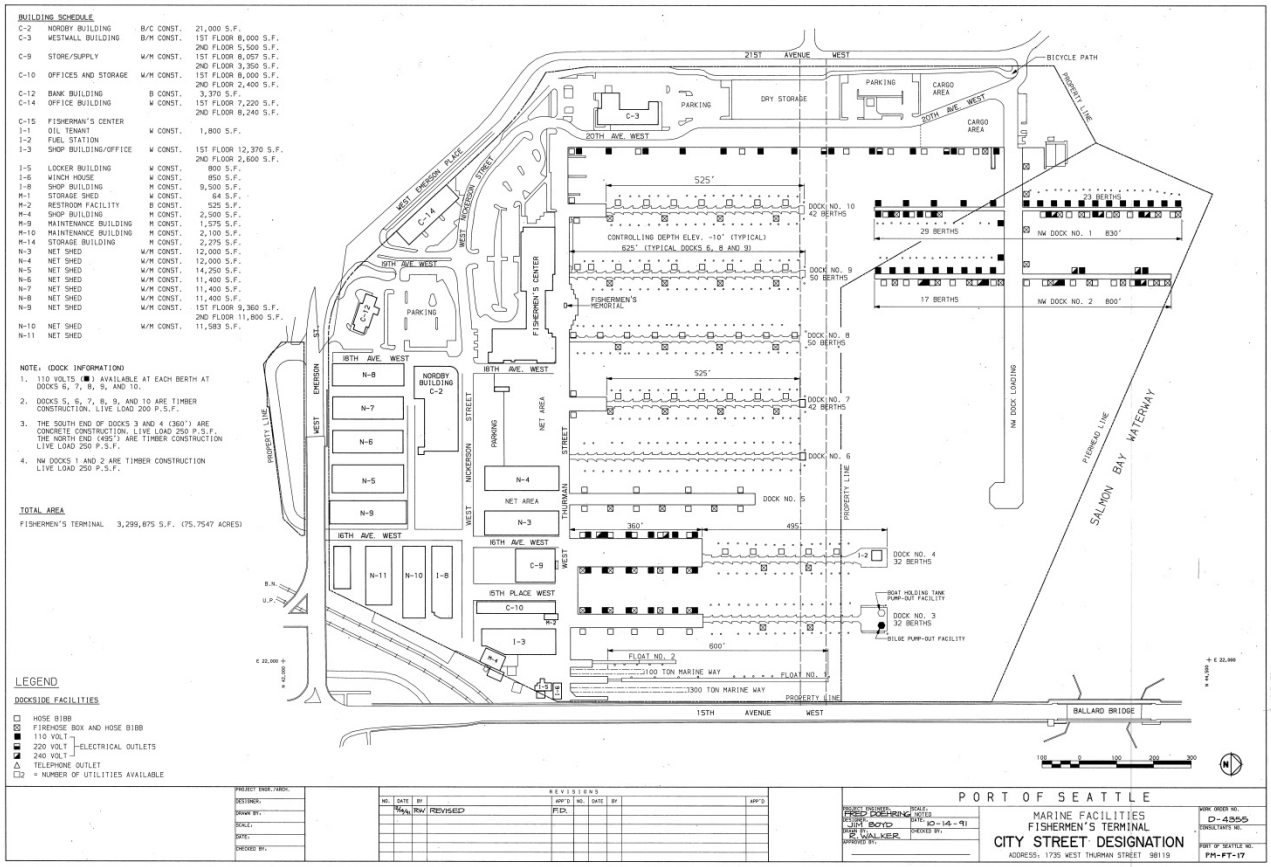


Figure 3
Existing Site Conditions



B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one):
Flat, rolling, hilly, steep slopes, mountainous, other:

*Fishermen's Terminal, including the three project sites (**Gateway**, **West Wall**, and **Seattle Ship Supply**), is relatively flat. However, on the City of Seattle GIS Environmentally Critical Area Map layers, a designated Steep Slope area runs from north to south along the west side of the **West Wall** site.*

b. What is the steepest slope on the site (approximate percent slope)?

*The steep slope area adjacent to the **West Wall** site is the steepest slope on the Fishermen's Terminal site and is essentially a vertical slope.*

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Fishermen's Terminal is entirely fill with marine deposits approximately 15 feet below existing grade. Underlying the soft clay and organic soils are glacial deposits consisting of hard silt and clay and very dense sand and gravel. [2]

No agricultural land of long-term commercial significance is present at the terminal.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

The Puget Sound region is a seismically active region; thus, Fishermen's Terminal could experience seismic activity, which may cause surface rupture, liquefaction and subsidence and landslides. All of the terminal east of 21st Avenue W is a Liquefaction Prone area, [3] *including the proposed **Gateway**, **West Wall** and **Seattle Ship Supply** sites. Liquefaction Prone areas are environmentally critical areas usually associated with a shallow groundwater table that lose substantial strength during earthquakes.*

e. Describe the purpose, type, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

*Grading and site disturbance would be required for the **Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project**; estimates are provided below (see **Table 2** for details). Ground and site disturbance will take place in existing improved, impervious areas. As shown in this table, construction of the three site areas (**Gateway**, **West Wall** and **Seattle Ship Supply**) would require a total of*

[2] Shannon and Wilson, *Geotechnical Report, Fishermen's Terminal Electrical Upgrade Project* (1999).

[3] Seattle Department of Construction and Inspections (SDCI) GIS Map. http://web6.seattle.gov/dpd/maps/dpdgis.aspx.

*approximately 37,870 CY of cut and the same amount of fill. A total of approximately 37,260 SY of Hot Mix Asphalt (HMA) would be removed and approximately 21,320 SY of HMA would be replaced. A total of 2,950 SY of demolition would be required, all on the **Gateway** site (all three buildings on this site would be demolished and removed). An approved source would be used for the fill necessary for site redevelopment.*

Table 2
GRADING, HMA REMOVAL/REPLACEMENT AND DEMOLITION

	Grading (CY) Cut/Fill	HMA (SY) Remove/Replace	DEMO (SY) Type/Area
Gateway Site	10,710/10,710	14,650/10,890	0/2,950
West Wall Site	24,530/24,530	17,370/15,000	0/0
Seattle Ship Supp	2,630/2,630	5,240/5,240	0/0
Subtotal	**37,870/37,870**	**37,260/31,130**	**0/2,950**
Emerson St. Improvements	350/350	690/690	0/0

Source: The Miller Hull Partnership, 2017.

1. HMA areas - assumed that all asphalt would be demolished and replaced
2. Grading - assumed a minimum 1.5-foot thick cut section for all areas except under existing buildings and the West Wall building pad.
3. West Wall building site – conservatively assumed removal of 15 feet of unsuitable material in the building footprint area only (does not include areas for general storage or other onsite improvements).

*The anticipated foundation size, depth and spacing for the proposed buildings at the **Gateway**, **West Wall** and **Seattle Ship Supply** sites are described in **Table 3**.*

Table 3
BUILDING FOUNDATIONS

Site Area	Foundation Size/Depth/Spacing
Gateway	Up to 310 – 24 in. dia. pile at dept to to 40 feet, spaced at 15 ft. on cente (o.c.)
West Wall	Similar to Gateway.
Seattle Ship Supply	Up to 160 - 16 in. dia. ground impro ments at depths up to 50 ft., space 8 ft. o.c.

Source: The Miller Hull Partnership, 2017.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion is possible in conjunction with any construction activity. Site work would expose soils, but the implementation of a Temporary Erosion Sedimentation Control (TESC)

plan would minimize potential impacts. Once the buildings are operational, no erosion is anticipated because soils would not be exposed.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

*Approximately 98 percent of the Fishermen's Terminal would be covered in impervious surfaces after project construction, slightly more than under existing conditions. Pervious surfaces that would be disturbed would primarily include landscaping areas. The City of Seattle Department of Construction and Inspection's (SDCI) GIS indicates that approximately 2.9 percent of the terminal is covered in tree canopy.[4] Some of this canopy would be removed for redevelopment of the **Gateway** site, and a small amount of pervious area/vegetated area on the rockery could be removed for redevelopment on the **West Wall** site.*

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

*The following proposed mitigation measure applies to redevelopment at all the project sites (**Gateway**, **West Wall** and **Seattle Ship Supply**).*

- *Comprehensive Drainage Control Plans (including Construction Best Management Practices and Erosion and Sediment Control Plans) would be submitted as part of Building Permit applications, in accordance with City of Seattle requirements.*

2. Air

a. What type of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

The proposed projects could result in localized increases in air emissions (primarily carbon monoxide and dust) due to construction vehicles, equipment and activities.

To evaluate the climate change impacts of the proposed projects, Greenhouse Gas Emissions Worksheets were prepared to estimate the emissions footprint for the lifecycle of the projects on a gross-level basis. The emissions estimates use the combined emissions from the following sources:

- *Embodied Emissions – extraction, processing, transportation, construction and disposal of materials and landscape disturbance;*
- *Energy-related Emissions – energy demands created by the development after it is completed; and,*
- *Transportation-related Emissions – transportation demands created by the development after it is completed.*

[4] Seattle Department of Construction and Inspections (SDCI) GIS Map. http://web6.seattle.gov/dpd/maps/dpdgis.aspx.

*The Worksheet estimates are based on building use and size. The estimated lifespan emissions for each of the proposed redevelopment projects are listed below (see **Appendix A** to this Checklist for the Greenhouse Gas Emissions Worksheets)*

Gateway
Approximately 63,395 $MTCO_2e$[5] lifespan emissions.

West Wall
Approximately 94,743 $MTCO_2e$ lifespan emissions.

Seattle Ship Supply
Approximately 24,974 $MTCO_2e$ lifespan emissions.

The estimated lifespan emissions for the three projects would total approximately 183,112 $MTCO_2e$.

The proposed projects would be designed to conform to applicable regulations and standards of agencies regulating air quality in Seattle, including: the Environmental Protection Agency (EPA), Washington State Department of Ecology (DOE) and the Puget Sound Clean Air Agency (PSCAA).

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no off-site sources of air emissions or odors that may affect the proposed projects.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

*The following proposed mitigation measures apply to redevelopment at all the project sites (**Gateway**, **West Wall** and **Seattle Ship Supply**). These measures could be implemented to control emissions and/or dust during construction:*

- *Using well-maintained equipment would reduce emissions from construction equipment and construction-related trucks as would avoiding prolonged periods of vehicle idling.*
- *Using electrically operated small tools in place of gas powered small tools, wherever feasible.*
- *Trucking building materials to and from the project site could be scheduled and coordinated to minimize congestion during peak travel times associated with adjacent roadways.*

[5] $MTCO_2e$ is defined as Metric Ton Carbon Dioxide Equivalent; equates to 2204.62 pounds of CO2. This is a standard measure of amount of CO2 emissions reduced or sequestered. Carbon is not the same as Carbon Dioxide. Sequestering 3.67 tons of CO2 is equivalent to sequester one ton of carbon.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Yes, Fishermen's Terminal is located adjacent to Salmon Bay and Lake Washington Ship Canal, which connect to Puget Sound.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Gateway

The Gateway project would not require work over, in or adjacent to (within 200 feet) of Salmon Bay.

West Wall

The West Wall project is located approximately 70 feet west of Salmon Bay and is in the Urban Maritime Shoreline Environment. The proposal would require work within this area (e.g., grading, asphalt removal and construction). However, no work over or in the water would be required.

Seattle Ship Supply

The Seattle Ship Supply project is located approximately 60 feet south of Salmon Bay and is in the Urban Maritime Shoreline Environment. The proposal would require work within this area (e.g. grading, asphalt removal and construction). However, no work over or in the water would be required.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill or dredge material would be placed in or removed from any surface water body with the proposed projects.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No. The proposed projects would not require any surface water withdrawals or diversions.

5) **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

No, the project sites do not lie within a 100-year floodplain and are not identified as a flood prone area on the City of Seattle Environmentally Critical Areas map layers.

6) **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

No. There would be no discharge of waste materials to surface waters.

b. Ground:

1) **Will ground water be withdrawn, or will water be discharged to ground water? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

No groundwater would be withdrawn or water discharged to ground water.

2) **Describe waste material that will be discharged into the ground from septic tanks or other sources; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

Waste material would not be discharged into the ground from septic tanks or other sources. The proposed buildings would connect to the City's sewer system and would discharge directly to the sewer system.

c. Water Runoff (including storm water):

1) **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Existing and new impervious surfaces constructed on the three sites are and would continue to be the source of runoff from the proposed projects.

2) **Could waste materials enter ground or surface waters? If so, generally describe.**

No. The proposed stormwater drainage control systems and associated mitigation measures would prevent waste materials from entering ground water or surface waters.

3) Does the proposal alter or otherwise affect drainage patterns in *the vicinity of the site? If so, describe.*

No, the projects would not alter or otherwise affect drainage patterns in the site vicinity.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

*The following proposed mitigation measures apply to redevelopment at all the project sites (**Gateway**, **West Wall** and **Seattle Ship Supply**).*

- *Stormwater from new impervious surfaces would be mitigated per the City's current stormwater code.*
- *The proposed projects would require City approval of Comprehensive Drainage Control Plans (including Construction Best Management Practices, Erosion and Sediment Control approvals) as part of the building permit processes.*

4. Plants

a. Check or circle types of vegetation found on the site:

X_deciduous tree
X_evergreen tree
X_shrubs
__grass
__ pasture
__ crop or grain
__ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
__ water plants: water lily, eelgrass, milfoil, other
X_other types of vegetation:

Gateway
Ornamental landscaping is present around the existing bank building, in the parking area surrounding the building and on the rockery to the south of the building. As necessary an arborist report would be prepared to identify existing trees meeting the criteria for 'exceptional' designation according to DPD Director's Rule 16-2008.

West Wall
Ornamental landscaping is present on the rockery to west of the existing outdoor storage area on the West Wall site.

Seattle Ship Supply
No vegetation is present on the Seattle Ship Supply site.

b. What kind and amount of vegetation will be removed or altered?

Gateway

Ornamental landscaping in the existing project area would be removed for the proposed project. Some of the trees located in the parking area onsite would be removed as well. The project would adhere to the City of Seattle's mitigation requirements if any exceptional trees are removed.

West Wall

Existing groundcover on the rockery in the west portion of the West Wall site may need to be removed for the proposed project.

Seattle Ship Supply

No vegetation would be removed for the proposed project at the Seattle Ship Supply site.

c. List threatened or endangered species known to be on or near the site.

No known threatened or endangered plant species are located on or proximate to the project sites.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Landscaping would be provided for all three projects that would meet the requirements of the Seattle Land Use Code.

e. List all noxious weeds and invasive species known to be on or near the site.

English ivy is an invasive species that is present on the Gateway and West Wall sites. Milfoil could be present beneath the docks and in the water in Salmon Bay adjacent to the project sites.

5. Animals

a. Circle (underlined) any birds and animals that have been observed on or near the site or are known to be on or near the site:

birds: songbirds**,** hawk, heron, eagle**,** other: seagulls, pigeons.
mammals: deer, bear, elk, beaver**,** other: small mammals.
fish: bass, salmon, trout, herring, shellfish**.**

Birds and small mammals tolerant of urban conditions may use and may be present on and near Fishermen's Terminal. Mammals likely to be present include: raccoon, eastern gray squirrel, mouse, rat, opossum, muskrat and feral cats.

Birds common to the area include: European starling, house sparrow, rock dove, American crow, seagull, western gull, Canada goose, American robin, and house finch.

Salmonid species, including Chinook, coho and sockeye salmon and steel head trout, are present in Salmon Bay. Other fish species and benthic animals occupy the bay as well.

b. List any threatened or endangered species known to be on or near the site.

.
Chinook salmon and Puget Sound steelhead trout are listed as threatened under the federal Endangered Species Act (ESA). Puget Sound coho salmon are considered an ESA species of concern.

c. Is the site part of a migration route? If so, explain.

Yes. Anadromous salmonids living in the Cedar-Sammamish Basin use Salmon Bay as part of a migratory passageway to and from saltwater. Adult salmon use the bay and Ship Canal system as a migration corridor to upstream spawning grounds. No in water work or over water structures are proposed in Salmon Bay for the Fishermen's Terminal Redevelopment projects, and the proposed stormwater control systems would minimize impacts on fisheries resources.

The entire Puget Sound area is within the Pacific Flyway, which is a major north-south flyway for migratory birds in America—extending from Alaska to Patagonia. Every year, migratory birds travel some or all this distance both in spring and in fall, following food sources, heading to breeding grounds or travelling to overwintering sites. The proposed buildings would be of a similar height to adjacent structures; therefore, no impacts on the Pacific Flyway migration route are expected.

d. Proposed measures to preserve or enhance wildlife, if any:

*The following proposed mitigation measure applies to redevelopment at all the sites (**Gateway**, **West Wall** and **Seattle Ship Supply**).*

- *Temporary and permanent stormwater control system plans (including construction BMPs and erosion and sediment control approvals) would be implemented, which would limit stormwater impacts on fisheries resources.*

e. List any invasive animal species known to be on or near the site.

Invasive species found in King County include European starling, house sparrow and eastern gray squirrel.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity and natural gas are the primary sources of energy that would serve the proposed projects. During operation, these energy sources would be used for project heating, cooling, hot water and lighting.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No. The proposed project would not affect adjacent properties use of solar energy.

e. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

*The following proposed mitigation measure applies to redevelopment at all the project sites (**Gateway**, **West Wall** and **Seattle Ship Supply**).*

- *Where feasible, building systems could include high efficiency mechanical systems, rain water harvesting, solar hot water, photovoltaics, stormwater control through green roofs and/or landscape features.*

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

*Exposure to hazardous site materials (soil and groundwater) and building materials could occur with the **Fisherman's Terminal Redevelopment** project.*

1) Describe any known or possible contamination at the site from present or past uses.

Soil and Groundwater

Many locations at Fishermen's Terminal could be considered Areas of Concern (AOC) for soil and groundwater contamination from past uses. However, it is likely that many of these areas have no residual contamination. There are three different categories of AOCs:

- *Potential Sources of Petroleum Contamination: this includes above-ground and underground storage tanks, piping, garages and net tarring facilities.*

- *Shops and Industrial Process Areas: this includes non-descript "shops" and a "factory" and better described facilities, including machine shops, paint shops, boiler shops, a tin shop, a battery shop, a toll shop and boilers. These shops and areas may have used chemicals that could result in soil or groundwater contamination, if released.*

- *Other Possible Contaminant Sources: this includes historic fills, an incinerator, a foundry, a kiln and two blacksmith shops. Electrically powered shop equipment*

that have heavy power demand may require transformers and capacitators with the possibility of PCB releases.

Below are descriptions of the Areas of Concern:

Gateway

Former shops and industrial process areas are present in the west part of the Gateway site and at the south end of a former canal that passed through the site (between the vacant bank building and Net Shed 8). A potential source of petroleum contamination, as well as former shops and industrial process areas are located between Net Shed 7 and Net Shed 6 (see ***Figure 4****).*[6]

West Wall

No Areas of Concern were identified at the West Wall site. However, given the past industrial and commercial uses at Fishermen's Terminal, soil and groundwater contamination could be present at this location.

Seattle Ship Supply

Former shops and industrial process occurred in the Seattle Ship Supply building. Other possible contaminant sources are present in the south part of the site (see ***Figure 4****).*[7]

Buildings

Gateway

Limited "good faith" inspections of the three existing buildings on the Gateway site (bank building/C-12, Net Shed 7 and Net Shed 8) were conducted. These inspections detected asbestos, including in the roofing at the net sheds, and in asbestos board panels, tile, coating/mastic and exterior soffit texture at the bank building.[8]

Lead based paint was detected in the metal siding, flashing, piping ladders, equipment, entry doors, bollards and standpipes at the net sheds, and throughout the interior and on the bollards to the north of the bank building.[9]

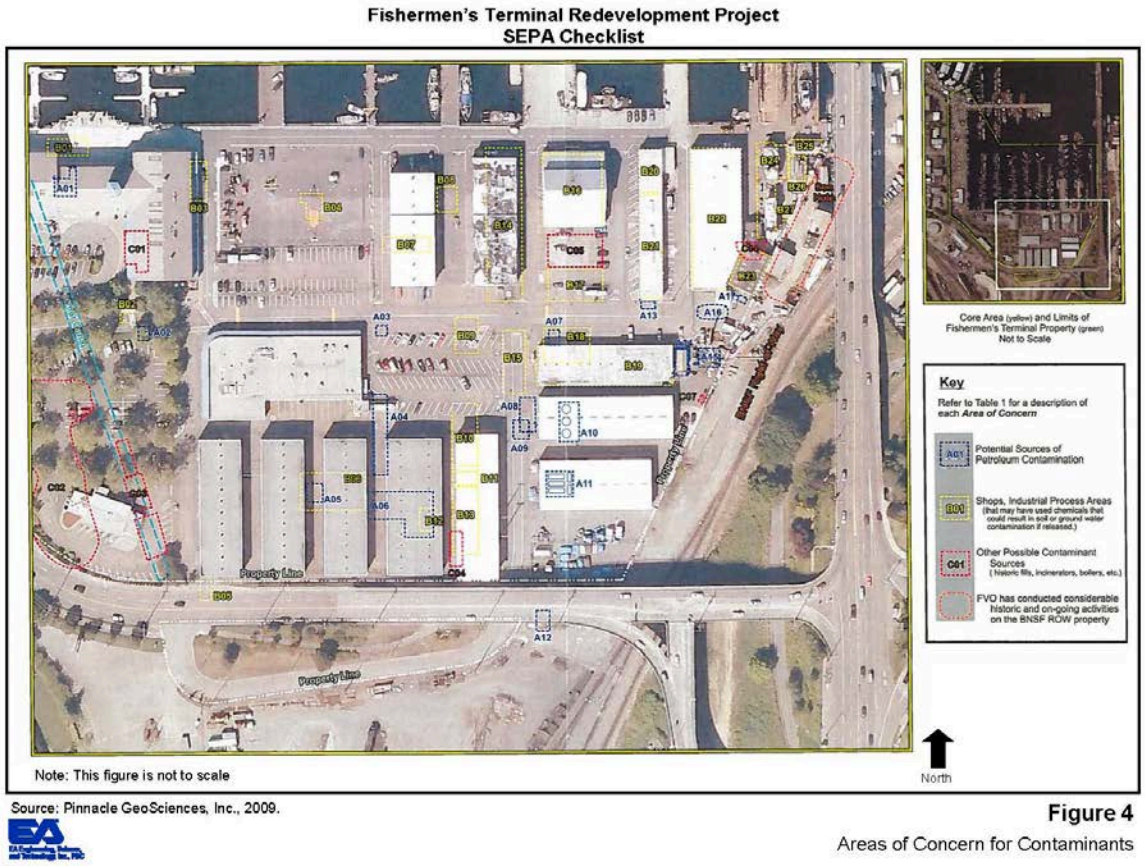
[6] Pinnacle GeoSciences, Historical Report Soil and Ground Water Conditions, Fisherman's Terminal (2009).

[7] Ibid.

[8] Port of Seattle Construction Services, *Limited Good Faith Inspections - Building C-12, Net Shed 7 and Net Shed 8 Demolition* (2017).

[9] Ibid.

Figure 4
Fisherman's Terminal Areas of Concern for Contaminants



Source: Pinnacle GeoSciences, Inc., 2009.

Figure 4
Areas of Concern for Contaminants

West Wall
No buildings are present on the West Wall site that would contain contaminants.

Seattle Ship Supply
A limited "good faith" inspection of the one existing building on the Seattle Ship Supply site (Building C-9) was conducted. This inspection detected asbestos, including in sealants, pipe wrapping, ceiling and floor tiles, a fire door, insulation and wallboard joints, of the building.[10]

Lead based paint was detected throughout the interior and exterior of the Seattle Ship Supply building.[11]

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

See the identified soil/groundwater and building contamination described above and shown in ***Figure 4****.*

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

No toxic or hazardous chemicals are anticipated to be produced during the projects' construction or operation. Hydraulic oil and fuel would be used and could be stored onsite during construction of the projects. If handled improperly, oil and fuel spills could occur.

4) Describe special emergency services that might be required.

No special emergency services are anticipated to be required because of the projects. As is typical of urban development, it is possible that normal fire, medical and other emergency services may, on occasion, be needed from the City of Seattle.

5) Proposed measures to reduce or control environmental health hazards, if any:

*The following proposed mitigation measures apply to redevelopment at all the project sites (****Gateway****,* ***West Wall*** *and* ***Seattle Ship Supply****).*

- *Contaminated soil and/or asphaltic concrete pavement would be characterized as part of site clearing, grading or general excavating to select an appropriate off-site disposal location.*

10 Port of Seattle Construction Services, *Limited Good Faith Inspection – Building C-9 Demolition* (2017).
11 Ibid.

- *A site-specific health and safety plan would be prepared that includes the safety requirements of WAC 296-843, Hazardous Waste Operations, and WAC 296-155, Safety Standards for Construction Work, to minimize the potential for workers to be exposed to hazardous materials during construction and to address appropriate handling and disposal of any soil with contaminant concentrations greater than the MTCA cleanup levels.*

- *During construction activities, possible contaminants in soil could become entrained in stormwater. Stormwater treatment and monitoring would be conducted during demolition and/or construction activities.*

- *If unanticipated contamination is discovered, the project would need to comply with applicable cleanup provisions, based on MTCA regulations.*

- *Spill prevention and response planning would be conducted prior to the start of construction to prevent and, if needed, respond to hydraulic oil or fuel spills*.

- *Asbestos-containing material (ACM) and presumed asbestos-containing material (PACM) that could be impacted by demolition/renovation activities would be removed by a licensed asbestos abatement contractor prior to disturbance. The asbestos work would be performed in compliance with Washington State worker protection and environmental protection regulations. See WAC 292-62, WAC 296-65 and Puget Sound Clean Air Agency Regulation III, Article 4 for additional information.*

- *Necessary precautions (e.g., exposure assessments, respiratory protection) would be taken to prevent or minimize worker exposure to lead, as outlined in WAC 296-155-176. Demolition waste that contains lead would be characterized and disposed of in accordance with the provisions of the Dangerous Waste Regulations (WAC 173-303).*

- *Conventional dust control measures would be implemented to minimize the exposure of workers and the immediate surrounding populations to construction-generated dust.*

b. Noise

1) What types of noise exist in the area that may affect your project (for example: traffic, equipment operation, other)?

Traffic noise associated with adjacent streets is relatively high at certain times of day, particularly along 15th Avenue W immediately east of the site—a major arterial with access to downtown Seattle. The traffic noise is not expected to adversely affect the proposed projects. The project vicinity contains numerous industrial noise sources from both Port tenants, nearby industrial facilities and the facility location in a working maritime industrial area.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from site.

The proposed project would create construction activity and equipment noise related to demolition of buildings and building construction.

*The project size is zoned for Industrial uses and potentially affected sensitive receivers in the project vicinity include residences to the west and east of the site. The nearest residences west of the site are located approximately 965 feet from the **West Wall** building site and 1,020 feet from the **Gateway** building site. East of the site, the nearest sensitive receivers are 1,266 feet from the **Gateway** site, and 2,000 feet from the **West Wall** site. Commercial development occurs on Fishermen's Terminal and adjacent to the planned development sites at distances of 70 feet or more.*

*Construction noise would be short-term and would occur during daytime hours. Typical construction noise activities would include grading, demolition and building construction and would employ equipment such as dump trucks, excavators, pavers, generators and compressors. The foundations for the **Gateway** and **West Wall** building will likely require piling support to achieve necessary strength to support the buildings. Pile driving would occur between 965 and 2,000 feet from the **West Wall** building at the nearest residences, and 1,020 and 1,265 feet from the **Gateway** building to the nearest residence. The proposed projects would comply with provisions of Seattle's Noise Code (SMC, Chapter 25.08); no noise variances are anticipated.*

The unique nature of pile driving noise could result in the loudest sounds being audible at the residences nearest this activity. This noise could be perceived by some people as intrusive and possibly annoying, but the low overall sound levels and compliance with Seattle's noise code would minimize the potential for significant impacts.

Once the buildings are operational, no significant long-term noise impacts are anticipated; the developments would comply with provisions of the City of Seattle's Noise Ordinance.

3) Proposed measures to reduce or control noise impacts, if any:

*The following proposed mitigation measure applies to redevelopment at all the project sites (**Gateway**, **West Wall** and **Seattle Ship Supply**).*

- *The project would comply with provisions of the City's Noise Ordinance (SMC 25.08); specifically: construction hours would be limited to standard construction hours (non-holiday) from 7 AM to 10 PM and Saturdays and Sundays from 9 AM to 10 PM. If extended construction hours are necessary, the applicant would apply for a noise variance.*

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

Fishermen's Terminal is a commercial fishing facility that accommodates over 600 vessels. Recreational moorage is also provided at the terminal. There are 20 buildings located on the upland portion of the terminal, with approximately 227,000 sq. ft. of office, retail, restaurant, industrial and warehouse space (see ***Figure 3****). Most building tenants have ties to the fishing fleets or the broader maritime industry.*

Fishermen's Terminal occupies approximately 76 acres (about half of which is upland area and half of which is docks/water), and is generally bounded by other industrial and commercial areas, including: marinas and warehouses to the north, across Salmon Bay; the Salmon Bay Terminals to the east; the Burlington Northern Santa Fe (BNSF) Interbay rail yard to the south; and commercial and retail office buildings to the west of the site.

Fishermen's Terminal is located within one of two designated Manufacturing/Industrial Centers in the City of Seattle – the Ballard-Interbay-Northend Manufacturing/Industrial Center (BINMIC). These areas are home to the city's industrial businesses, and are designated as regional resources for retaining and attracting jobs, and maintaining a diversified economy.[12] *A more detailed description of land and shoreline uses at and around each project site is provided below. The potential for each project to affect current land uses is also discussed.*

Gateway

The Gateway site currently contains two net shed storage buildings, a vacant bank building and surface parking areas. Net Sheds 7 and 8 occupy the east side of the site and are each approximately 11,400 sq. ft. The bank is a one-story, approximately 3,370-sq. ft. building and occupies the west side of the site. Land uses surrounding the site include:

- ***North -*** *W Nickerson Street and the one-story Nordby Building (Building C-2), which consists of retail shops and restaurants, as well as office spaces for UnCruise Adventures and the Inlandboatmen's Union;*
- ***East -*** *net shed buildings (Net Sheds 6, 5 and 9);*
- ***South -*** *the Emerson Street Bike Trail and BNSF Interbay rail yard is located to the south, across W. Emerson Place; and*
- ***West -*** *a two-story office building (Building C-14).*

West Wall

The West Wall site currently contains a fenced in, open storage area for marine supplies. Land uses surrounding the site include:

- ***North -*** *additional open space storage and a materials recycling and disposal station;*
- ***East -*** *working berths, loading space and marina slips/docks;*
- ***South -*** *a surface parking area and the two-story Westwall building (Building C-3); and*
- ***West -*** *a vegetated/landscaped slope and sidewalk area adjacent to 21st Avenue W*[13] *immediately to the west, with retail and office buildings further to the west.*

[12] City of Seattle Comprehensive Plan.

[13] An existing staircase connects the West Wall site with the sidewalk adjacent to 21st Avenue W.

Seattle Ship Supply

The Seattle Ship Supply site is currently occupied by the Seattle Ship Supply building (Building C-9); a surface parking area and Substation No. 6. The three-story, approximately 12,454-sq. ft. ship supply building is in the north part of the site and is presently used for storage. Land uses surrounding the site include:

- ***North –*** *Dock 4 and the marina;*
- ***East –*** *a one-story storage warehouse and retail building (Building C-10);*
- ***South –*** *a one-story building with retail and office space (Building I-8); and*
- ***West –*** *net shed buildings (Net Sheds 3 and 4).*

*The proposed **Fisherman's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project** would be developed as marine sales and services, office and warehouse uses (on the **Gateway** site); maritime flex industrial[14] and exterior open storage (on the **West Wall** site); and workforce and maritime incubator uses[15] (on the **Seattle Ship Supply** site). These uses would be allowed by the **Gateway** site's IG2 U/45 zoning classification, and the **West Wall** and **Seattle Ship Supply** sites' IG1 U/45 zoning classification and Urban Maritime Shoreline Master Program (SMP) designation. They would also be consistent with the types and character of the land uses in the surrounding area on and offsite. The height, bulk and scale of the proposed buildings would be consistent with the sites' zoning classifications and SMP designation and existing development in the area. Also, because of the topography of the site, the proposed building at the **West Wall** site would be as much as 20 feet lower than surrounding land uses, which would minimize height/bulk/scale impacts. Therefore, the proposed redevelopment is not expected to negatively affect nearby or adjacent properties.*

b. Has the site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No, the site has not been used as working farmlands or forest lands for over 100 years.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No. The site is in an urban area and would not affect or be affected by working farm or forest land; no working farm or forest land near this urban site.

[14] Maritime flex-industrial development would include light-industrial small business uses that support water-related activities. The flex-component could include warehouse, light manufacturing, general commercial, and accessory office.

[15] Workforce and maritime incubator uses would include uses that further maritime job generation and could include maritime training space. Incubator space could include workshop/warehouse space for light fabrication and accessory office space with business support resources for early stage maritime-related businesses.

c. Describe any structures on the site.

*As previously described, the **Gateway** site contains two net sheds (N-7 and N-8), both approximately 11,400 sq. ft., and a vacant one-story, approximately 3,370 sq. ft. bank building (C-12). The **Seattle Ship Supply** site contains the three-story, 12,454-sq. ft. Seattle Ship Supply building and Substation No. 6. No buildings are present on the **West Wall** site.*

d. Will any structures be demolished? If so, what?

*Yes, all structures on the **Gateway** site would be demolished with proposed redevelopment (Net Sheds N-7, N-8 and the bank building/C-12). The existing building on the **Seattle Ship Supply** would be retained and renovated and the substation would be retained. An approximately 8,000 sq. ft. addition would be constructed on the south side of the Seattle Ship Supply building.*

f. What is the current zoning classification of the site?

The project sites are currently zoned as follows:

- ***West Wall** and **Seattle Ship Supply:** Industrial General 1 Unlimited/45 (IG1 U/45)*
- ***Gateway:** Industrial General 2 Unlimited/45 (IG2 U/45).*

Fishermen's Terminal is also within the Ballard-Interbay-Northend Manufacturing Industrial Center (BINMIC). As noted above, this is one of two designated Manufacturing/Industrial Centers in the City of Seattle. These areas are home to the city's thriving industrial businesses, and are designated as important regional resources for retaining and attracting jobs, and maintaining a diversified economy.

f. What is the current comprehensive plan designation of the site?

The Future Land Use Map in the Seattle Comprehensive Plan identifies Fishermen's Terminal as a Manufacturing Industrial Center.

g. If applicable, what is the current shoreline master program designation of the site?

*The **West Wall** and **Seattle Ship Supply** sites are located within the Urban Maritime Shoreline Master Program (SMP) designation. The **Gateway** site is not located in any SMP designation.*

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Based on the SDCI GIS mapping, Fisherman's Terminal contains the following Environmentally Critical Areas.

Gateway

*The Gateway site is located within a liquefaction prone area. The site is also located within the archaeological buffer zone as defined in SMC 25.05.675H, Director's Rule 2-98 (see Section 13, Historic and Cultural Preservation and **Appendix B** for details).*

West Wall

*40% steep slope areas are located along the west edge of the West Wall site, adjacent to 21st Avenue W. This area corresponds to an existing rockery and vegetated area in this location. The site is also located within the archaeological buffer zone as defined in SMC 25.05.675H, Director's Rule 2-98 (see Section 13, Historic and Cultural Preservation and **Appendix B** for details).*

Seattle Ship Supply

*The Seattle Ship Supply site is located within a liquefaction prone area. Most of the site is also located waterward of the archaeological buffer zone, but portions of the east and south edges of the site are within the buffer zone (see Section 13, Historic and Cultural Preservation and **Appendix B** for details).*

i. Approximately how many people would reside or work in the completed project?

*The project would not contain any residential units; therefore, no people would reside in the completed projects. The proposed **Fisherman's Terminal Redevelopment** could provide a total of approximately 429 jobs: 241 jobs in the **Gateway** project, 107 jobs in the **West Wall** project, and 80 jobs in the **Seattle Ship Supply** project (see **Table 4** for details).*

Table 4
ESTIMATED JOBS WITH PROPOSED REDEVELOPMENT

Land Use	Gateway		West Wall		Seattle Ship Supply		Total
	Sq. Ft.	Jobs	Sq. Ft.	Jobs	Sq. Ft.	Jobs	Jobs
Marine Sales & Service	21,000	70.0[1]	--	--	--	--	70.0[1]
Warehouse	55,000	122.2[2]	--	--	13,000	28.9[2]	151.1[2]
Accessory Office	12,250	49.0[3]	--	--	13,000	52.0[3]	101.0[3]
General Lt. Industrial	--	--	48,200	107.1[2]	--	--	107.1[2]
Ext. Storage	--	--	33,000	--	--	--	--
Total	86,250	**241.2**	81,200	**107.1**	26,000	**80.9**	**429.2**

Source: EA Engineering, Science and Technology, Inc., PBC, 2017.

[1] Based on 300 sq. ft./employee for retail uses from the *2014 King County Buildable Lands Report*.

[2] Based on 450 sq. ft./employee for industrial uses from the *2014 King County Buildable Lands Report*.
[3] Based on 250 sq. ft./employee for office uses from the 2014 *King County Buildable Lands Report*.

j. Approximately how many people would the completed project displace?

The completed development project would not displace any people.

k. Proposed measures to avoid or reduce displacement impacts, if any:

No displacement impacts would occur and no mitigation measures are necessary.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The project is compatible with existing and projected land uses and plans, and no mitigation is necessary.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The project site is not located near agricultural or forest lands and no mitigation measures would be necessary.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units would be provided.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing presently exists onsite and none would be eliminated.

c. Proposed measures to reduce or control housing impacts, if any:

No housing impacts would occur and no mitigation measures would be necessary.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Gateway

Based on the site's IG2 U/45 zoning, the proposed building on the Gateway site would be a maximum of 45 feet high. Existing structures on the Gateway site include the one-story bank building and the 1-story net sheds.

West Wall

Based on the site's IG1 U/45 zoning and Urban Maritime SMP designation, the proposed building on the West Wall site would be a maximum of 35 feet high.

Seattle Ship Supply

Based on the site's IG1 U/45 zoning and Urban Maritime SMP designation, the proposed addition on the Seattle Ship Supply site would be a maximum of 35 feet high. The existing Ship Supply Building is 3-stories.

Building design for the proposed buildings would likely consider contextual materials that relate to the surrounding maritime industrial setting, although the design has not been finalized at this time.

b. What views in the immediate vicinity would be altered or obstructed?

The City's public view protection policies are intended to "protect public views of significant natural and human-made features: Mount Rainier, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water including Puget Sound, Lake Washington, Lake Union and the Ship Canal, from public places consisting of specified viewpoints, parks, scenic routes and view corridors identified in Attachment 1" to the SEPA code.[16] *It is also the City's policy to protect views of designated historic landmarks.*[17] *And it is City policy to protect public views of the Space Needle from designated public places.*[18] *The* ***Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project*** *are not expected to result in significant impacts on views from City-designated public viewpoints, parks, scenic routes or view corridors of significant natural and human-made features; views of the Space Needle from City-designated public places; or views of City-designated historic landmarks, as described below.*

Designated Viewpoints and Designated Views of the Space Needle

The nearest City-designated viewpoints are Commodore Park, approximately one mile northwest of Fishermen's Terminal and Lawton Playground, approximately ½ mile west of the terminal. The nearest designated view of the Space Needle is from Kerry Park on the south side of Queen Anne hill, approximately two miles southeast of the terminal. Views from these viewpoints would not change with the proposed redevelopment projects because of the distance from the viewpoints and topographic separation.

[16] SMC Chap. 25.05.675 P.2.a.i.

[17] SMC Chap. 25.05.675 P.2.b.i.

[18] SMC Chap. 25.05.675 P.2.c.

Scenic Routes

City-designated scenic routes near Fishermen's Terminal include:

- *15th Avenue W to the east;*
- *W Emerson Street/Place to the south; and,*
- *21st Avenue W to the west of the terminal.*

*The projects are not expected to affect protected views to the water from either 15th Avenue W or W Emerson Street/Place. The 15th Avenue W right-of-way is elevated above the site, and the proposed new buildings would not be expected to affect views toward the water from this roadway. From W Emerson Street/Place, views of the water are largely blocked by existing development and vegetation under existing conditions. The proposed **Gateway** building and addition to the **Seattle Ship Supply** building would, therefore, represent a continuation of this existing condition.*

*The proposed approximately 48,200 sq. ft. and up to 35-foot tall building at the **West Wall** site would obscure a portion of the view of Salmon Bay from 21st Avenue W. Views to the east are partially obstructed from certain locations due to the presence of existing trees and vegetation under existing conditions. With proposed redevelopment, views of the water along an approximately 450 ft. span of the roadway would be replaced by views of the new building. Assuming the existing view of the water available from 21st Ave. W from W Emerson Street to the NW Dock is approximately 90 percent (minus 10 percent for the existing C-3 Building), the view could be reduced by approximately 35 percent following redevelopment. Approximately 55 percent of the existing view would remain.*

Views of Landmarks

The nearest City-designated historic landmark is Salmon Bay Bridge approximately one mile to the northwest of Fishermen's Terminal. Views toward the bridge would not be impacted by the proposed projects because of the distance and topographical separation.

The Ballard Bridge located to the east of the site is listed in the National Register of Historic Places. Impacts to the viewshed of the bridge are not anticipated with proposed redevelopment of Fishermen's Terminal due to the extensive development of the Ballard and Interbay neighborhoods over the past century, which has already significantly altered the surrounding landscape of this resource.

c. Proposed measures to reduce or control aesthetic impacts, if any:

No significant aesthetic/views impacts are anticipated with the proposed projects and no mitigation measures are proposed.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

At times during the construction process, area lighting of the job sites (to meet safety requirements) may be necessary, which will be noticeable proximate to the project sites. In general, however, light and glare from construction of the proposed projects are not anticipated to adversely affect adjacent land uses.

Once operational, interior and exterior building lighting could at times be visible from adjacent land uses and streets. The amount of light and associated glare is not expected to differ substantially from that which presently occurs from other buildings/structures of similar height on and near the project sites. Stationary sources of light would include interior lighting, building and parking entrance lighting; pedestrian-level façade lighting; and security lighting.

Sources of glare would also include any mirrored and/or glazed building facade materials.

Shadows

Seattle's SEPA policies aim to "minimize or prevent light blockage and the creation of shadows on open spaces most used by the public."[19] *Areas of the City outside Downtown that are to be protected include:*

- *publicly-owned parks;*
- *public schoolyards;*
- *private schools which allow public use of schoolyards during non-school hours; and*
- *publicly owned street ends in shoreline areas.*

There are no protected open space areas that are proximate to Fishermen's Terminal where the projects could block light or cast shadows.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No light or glare safety hazards or view interferences are anticipated.

c. What existing off-site sources of light or glare may affect your proposal?

*No off-site sources of light or glare are anticipated to affect the proposed **Fishermen's Terminal Redevelopment**.*

d. Proposed measures to reduce or control light and glare impacts, if any:

*No significant long term light or glare-related environmental impacts are anticipated, including for motorists on 15th Avenue W, W Emerson Street or 21st Avenue W, because of the proposed **Fishermen's Terminal Redevelopment** projects, and no mitigation measures are necessary.*

[19] SMC 25.05.675 Q2.

*However, the following mitigation measures would help to reduce overall light and glare from the projects as they relate to the neighborhood surrounding the site. These proposed measures apply to redevelopment at all the project sites (**Gateway**, **West Wall** and **Seattle Ship Supply**).*

- *Excessively-reflective surfaces (i.e. mirrored glass, or polished metals) that go beyond what is required to meet energy-related code provisions could be minimized on the exterior of the project buildings.*

- *Pedestrian-scale lighting would be provided consistent with code, function and safety requirements. Exterior lighting would include fixtures to direct the light downward and/or upward and away from off-site land uses.*

- *New exterior lighting could be provided by light fixtures with well shielded sources that have precise optical control to reduce impacts to neighboring properties.*

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Fishermen's Terminal offers year-round recreational opportunities, including: recreational moorage, self-guided walking tours and festivals, as well as retail shops and restaurants. There are sidewalks along W Emerson Place and 19th Avenue W, as well as sidewalks along internal streets and crosswalks at key locations within the terminal. The Emerson Bike Trail runs along the south side of W Emerson Place, with a connection to the terminal at 19th Avenue W. The Emerson Bike Trail links to the Ship Canal Trail near 15th Avenue W, providing bicycle connectivity between the terminal and other areas of Seattle.

*Parks and recreational facilities near Fishermen's Terminal and their distance from terminal are listed in **Table 5**.*

Table 5
PARKS AND RECREATIONAL FACILITES NEAR SITE

Park/Recreational Facility	Distance from Fishermen's Terminal
Lawton Park	½ miles W
Kiwanis Memorial Preserve	¾ miles W
Magnolia Manor Park	¾ mile SW
Discovery Park	1 miles W
Interbay Golf Center	1 mile S
Commodore Park	1 ½ miles NW
Hiram M. Chittenden Locks	1 ½ miles NW
Queen Anne Bowl Playfield	1 ½ miles SE
David Roger's Park	1 ½ miles SE

Source: EA Engineering, Science, and Technology, Inc., PBC, 2017.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The project would not displace any existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No significant recreation impacts are anticipated and no mitigation measures are necessary.

13. Historic and Cultural Preservation

*A detailed Cultural Resources Assessment was prepared for the **Fishermen's Terminal Redevelopment** projects by CRC in June 2017 (see **Appendix B**). The following responses summarize the findings in this report.*

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

The nearest City-designated historic landmark is Salmon Bay Bridge, located approximately one mile to the northwest of Fishermen's Terminal. The Ballard Bridge, located to the east of the site, is listed in the National Register of Historic Places (NRHP).

Below are summaries of historic/historic age buildings on the project sites.

Gateway

The three buildings on the Gateway site (the former bank building/Building C-12, Net Sheds 7 and 8) have not been previously inventoried, and therefore are not currently designated City Landmarks or historic resources. All three buildings are at least 25 years old, and meet the City of Seattle's threshold for eligibility as a Seattle Landmark. Net Sheds N-7 and N-8 were constructed in 1943 and 1954, respectively. These two net sheds are significant on the local level and are potentially eligible as Seattle Landmarks. The vacant bank building/Building C-12 onsite was constructed in 1964, and meets the threshold for historic structures. However, the bank does not possess traits to support eligibility for listing on a historic register. The adjacent Nordby building to the east was constructed in 1955. It has not been inventoried, but meets the age threshold for historic structures. The bank building/Building C-12 and Net Sheds 7 and 8 would be demolished and removed with the proposed project.

West Wall

There are no buildings located within or adjacent to the West Wall site that are over 45 years old listed in or eligible for listing in any historic registers.

Seattle Ship Supply

The former Seattle Ship Supply building was constructed in 1918, but was determined ineligible for listing in the NRHP in 2003 due to extensive alterations and a lack of historical significance. However, the building is significant on a local level and is potentially eligible as a Seattle Landmark. Adjacent Building C-10 to the east (constructed in 1938) and Net Shed N-3 to the west (constructed in 1943) are at least 25 years old and meet the threshold for historic structures; however, they are not listed on any historic registers. The ship supply building would be renovated and expanded with the proposed project.

c. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

*Potential impacts to cultural resources with the proposed **Fishermen's Terminal Redevelopment** projects were evaluated in the Cultural Resources Report (see **Appendix B**). Below are summaries of the ethnographic and historic context of Fishermen's Terminal, and the potential for archeological sites at Fishermen's Terminal and the project sites.*

Ethnographic Context

Archeological sites dating to the early to mid-Holocene (the Holocene began about 11,700 years before present) are more commonly found in the region. Human land use was generally structured around the value of natural resources available in the local environments, including fresh water, terrestrial and marine food resources, forests and suitable terrain. Fishermen's Terminal is within the traditional territory of the Duwamish, a southern South Coast Salish people who spoke Southern Lushootseed; historically, members of the Suquamish and Muckleshoot Tribes also used this vicinity. A major Duwamish winter village was located on the north shore of Salmon Bay and the bay was a thoroughfare for Puget Sound peoples headed east to Lake Washington via canoe and portage seeking resources and trade with neighboring tribes. Inland peoples also travelled by trail to Salmon Bay in search of marine foodstuffs.

Historic Context

In the late 1700s, Euro-American exploration and settlement of the region began, including on the south shore of Salmon Bay. In 1855, following the signing of the Point Elliot Treaty and others, area tribes were forced to abandon their Puget Sound villages and relocate to reservations. In 1911, the Port of Seattle was created and in 1913, construction of Fishermen's Terminal began. The terminal was envisioned as a harbor for Seattle's fishing fleet. In 1917, the Ship Canal connecting Lake Union Bay and Salmon Bay and the Hiram M. Chittenden Locks opened. The locks raised the water level of what was once east Salmon Bay approximately 21 feet and converted it to a fresh water environment. Over the subsequent decades, Fishermen's Terminal was expanded and improved.

Potential for Archaeological Sites at Fishermen's Terminal

Review of the local archaeological record and geomorphological setting indicates a high potential for archaeological sites to be located at Fishermen's Terminal. While the terminal's landscape has been modified by twentieth century development, near shore locations retain the potential to contain buried intact archaeological sites, which may have been capped by historic fill material or buried during seismic subsidence.

SDCI GIS mapping identifies an archaeological buffer area that extends 200 feet from the U.S. Government Meander Line. The meander line provides the approximate location of the saltwater shoreline prior to recent fill episodes and landscape alterations. The buffer area represents the area where most potentially "archaeologically significant resources" are likely located.[20] *Most of Fishermen's Terminal is located within the Government Meander Line Buffer area.*
Below are descriptions of the likelihood of encountering cultural resource at the project sites:

Gateway and West Wall
The Gateway and West Wall sites are located within the archaeological buffer zone. In the past, these sites contained shoreline habitat that could have provided for longer-term occupation. Native Holocene sediments could potentially be capped beneath fill or buried seismic subsidence at this sites, which could contain buried intact archaeological sites

Ship Supply Building
Most of the Ship Supply site is located waterward of the archaeological buffer zone. However, the east and south parts of the site are within the archaeological buffer zone.

*(See **Appendix B** for details.)*

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

*Potential impacts to historic and cultural resources were assessed by reviewing available project information, local environmental and cultural information and historical maps, as well as a site survey. Archaeological and historic data from the Washington State Department of Archaeology and Historic Preservation (DAHP) and the Washington Information System for Architectural and Archaeological Records Data (WISSARD) was reviewed. Contact was made with cultural resources staff of the Duwamish Tribe, Muckleshoot Indian Tribe, Snoqualmie Indian Nation and the Suquamish Tribe Nation on a technical staff-to-technical basis to inquire about project-related cultural information or concerns. The Suquamish Tribe responded and they did not have any specific concerns regarding the project at this time. On April 7, 2017, a field investigation was conducted, consisting of a surface survey and photo documentation of site conditions and historic structures anticipated to be impacted by proposed redevelopment (see **Appendix B** for details).*

[20] SMC 25.05.675 H, Director's Rule 2-98.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

*The following proposed mitigation measures apply to redevelopment at all the project sites (**Gateway**, **West Wall** and **Seattle Ship Supply**), unless noted for a specific project(s).*

- *The applicant would develop and implement appropriate measures for historic buildings on the Gateway and Ship Supply sites in conjunction with the Seattle Historic Preservation Program, King County Preservation Program, DAHP, and other applicable parties. These measures could include the completion of Seattle Landmarks nomination forms to determine if the structures could be listed on the local register and/or completion of Level II Mitigation Documentation as defined by DAHP, which would include more detailed documentation of the structures' architecture and history, and supplemental interior and exterior photographs.*

- *An accurate as-built drawing of the **Seattle Ship Supply** building could be prepared, as this is not presently available, and, in-kind materials could be used or replaced for renovation/expansion of this structure.*

- *Interpretive information that would convey the historical significance of the structures to be removed (on the **Gateway** site) and renovated/expanded (on the **Seattle Ship Supply** site) could be used as public education tools and/or integrated into future planning and design efforts.*

- *Archaeological monitoring would be conducted for ground disturbance such as grading and excavation (including street improvements, utility installation, etc.) within the Holocene deposits at the **Gateway** and **West Wall** sites, as well as to the east and south of the **Seattle Ship Supply** building.*

- *In the event that resources of potential archaeological significance are encountered during excavation or construction associated with the proposed project, the proposed 'Inadvertent Discovery Protocol' identified in the Cultural Resources Report (see **Appendix B**) would be followed including:*
  - *work that is occurring in the portion of the site where potential archaeological resources are found would be stopped immediately;*
  - *agencies with jurisdiction over the property would be contacted;*
  - *the City of Seattle land use planner that is assigned to the project and the Washington State Archaeologist at DAHP would immediately be contacted; and*
  - *a final written report of the discovery completed.*

- *In the unlikely event that human remains are found within the project area, all activity would cease that could cause further disturbance to the remains, and the proposed 'Protocols for Discovery of Human Remains' identified in the Cultural Resources Report (see **Appendix B**) would be followed, including:*
  - *covering and securing the discovery; and*
  - *contacting effected law enforcement personnel.*

14. Transportation

*A detailed Transportation and Parking Memorandum was prepared for the **Fishermen's Terminal Redevelopment** projects by Transpo Group in July, 2017 (see **Appendix C**). The following responses summarize the findings in this report.*

a. Identify public streets and highways serving the site or affected geographic area and describe the proposed access to the existing street system. Show on site plans, if any.

*Fishermen's Terminal is bounded by three public streets: 15th Avenue W (and the Ballard Bridge) to the east, W Emerson Street/Place to the south and 21st Avenue W to the west. Primary access is provided via W Emerson Street/19th Avenue W. Secondary access is available at 21st Avenue W, and an industrial-user access off of16th Avenue W (see **Figure 3**). Below are descriptions of the roadways/access to the three project sites.*

Gateway

The Gateway site is bounded by W Nickerson Street to the north, an alley between Net Sheds 6 and 7 to the east, W Emerson Street to the south (separated by a rockery) and 19th Avenue W to the west. Currently, 18th Avenue W runs north-south and a parking lot driveway runs east-west through the middle of the site.

West Wall

The West Wall site is bounded by 20th Avenue W to the east and 21st Avenue W to the west (separated from the site by a rockery). No streets border the north or south ends of the site.

Seattle Ship Supply

The Seattle Ship Supply site is bounded by W Thurman Street to the north, 15th Place W to the east, W Nickerson to the south and 16th Avenue W to the west.

b. Is site or affected geographic area currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Yes, there are two transit routes operated by King County Metro near Fishermen's Terminal. The nearest transit stop is along W Emerson Place approximately 750 feet to the west of the 19th Avenue W entrance to the terminal. This transit stop is served by Route 31. The terminal is also served by Rapid Ride Line D which operates along 15th Avenue W approximately 1,500 feet to the east of the 19th Avenue W entrance.

c. How many additional parking spaces would the completed project have? How many would the project or proposal eliminate?

There are presently 969 parking spaces within Fishermen's Terminal. Of these, there are 342 available spaces during the peak hour, of which 126 would be available for retail uses (two-hour parking) and 216 would be available for other proposed uses.

In total, the three projects would eliminate 100 parking spaces at the terminal. The projects would result in a net of 126 two-hour available spaces and 216 other available spaces for the proposed development. During the peak hour, there would be a demand

*for 49 two-hour parking spaces and 76 eight-hour parking spaces with the projects. The 2-hour parking has 126 available spaces, which could accommodate the anticipated 49 vehicles associated with the proposed marine sales and services accessory retail. The available parking on-site for other uses is 216 spaces, which would fully accommodate the 76 vehicles anticipated for the accessory office, warehouse, and light industrial uses on-site (see **Appendix C** for details).*

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The project would include construction of 20 on-street parking spaces along 21st Avenue W.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Given the project sites' location at Fishermen's Terminal, there may be some use of water transportation with various commercial and recreational boating services.

Fishermen's Terminal is situated to the north of the BNSF Railway Terminal. However, it is not anticipated that the projects would use rail transportation.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

*In total, the **Fishermen's Terminal Redevelopment** projects are estimated to generate 1,020 net new weekday trips per day, with 175 trips occurring during the weekday AM peak hour and 51 trips occurring during the weekday PM peak hour. The trip generation estimate is based on methodology from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition.*

Traffic operations at the following three intersections were analyzed:

- *19th Avenue W/ W Emerson Place;*
- *16th Avenue W/W Emerson Place; and*
- *W Nickerson Street/W Emerson Place.*

*The transportation analysis shows that the existing off-site transportation system would accommodate total proposed development of the three projects (**Gateway**, **West Wall** and **Seattle Ship Supply**). (See **Appendix C** for details).*

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The project would not interfere or be affected by the movement of agricultural and forest products on the roadway network near the site area.

h. Proposed measures to reduce or control transportation impacts, if any.

No impacts are anticipated and no mitigation is proposed.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No. The project would not result in an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

While the potential increase in employees and visitors associated with the proposed projects could result in incrementally greater demand for emergency services, it is anticipated that adequate service capacity is available within the Interbay area and city as a whole to preclude the need for additional public facilities/services.

16. Utilities

a. Circle utilities currently available at the site: <u>electricity</u>, <u>natural gas</u>, <u>water</u>, <u>refuse service</u>, <u>telephone</u>, <u>sanitary sewer</u>, septic system, other.

All utilities are currently available at the site and have adequate capacity to serve the proposed redevelopment projects.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in immediate vicinity that might be needed.

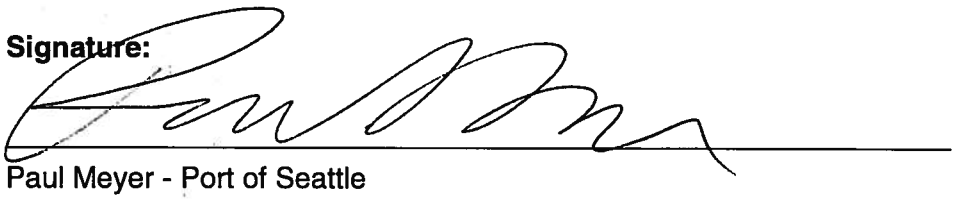
Utilities and providers (in parentheses) proposed for the projects would include the following:

- *Water – New domestic water connections and fire service connections to existing infrastructure at the Port (Seattle Public Utilities).*
- *Sewer – New side sewer connections to existing infrastructure at the Port (Seattle Public Utilities).*
- *Natural Gas – New gas service connections to existing Port infrastructure (Puget Sound Energy).*
- *Telecommunications – New telecommunications connections to existing infrastructure at the Port (Century Link, Comcast).*
- *Electrical – New electrical feed from existing infrastructure at the Port (Seattle City Light).*
- *Refuse/Recycling Service (Cleanscapes/Recology).*

C. SIGNATURES

The above answers are true and complete to the best of my knowledge. I understand the lead agency is relying on them to make its decision.

Signature:



Paul Meyer - Port of Seattle

Date submitted:

September 8, 2017

APPENDIX A

GHG Worksheets

Port of Seattle Fisherman's Terminal Redevelopment - Gateway

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			**Lifespan Emissions (MTCO2e)**
			Embodied	Energy	Transportation	
Single-Family Home	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall)		21.0	39	577	247	**18118**
Office		10.3	39	723	588	**13831**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		55.0	39	352	181	**31446**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement		0.00				**0**

Total Project Emissions: **63395**

Version 1.7 12/26/07

Port of Seattle Fisherman's Terminal Redevelopment - Seattle Ship Supply

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall)		0.0	39	577	247	**0**
Office		13.0	39	723	588	**17541**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		13.0	39	352	181	**7433**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement		0.00				**0**

Total Project Emissions: **24974**

Version 1.7 12/26/07

Port of Seattle Fisherman's Terminal Redevelopment - West Wall

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			**Lifespan Emissions (MTCO2e)**
			Embodied	Energy	Transportation	
Single-Family Home	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall)		0.0	39	577	247	**0**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		33.0	39	352	181	**18868**
Other		48.2	39	1,278	257	**75875**
Vacant		0.0	39	162	47	**0**

Section II: Pavement

Pavement		0.00				**0**

Total Project Emissions: **94743**

Version 1.7 12/26/07

APPENDIX B

Historic / Cultural Resources Analysis

Cultural Resource Consultants

TECHNICAL MEMO 1703D-3

DATE: June 22, 2017

TO: Hugh Mortensen
The Watershed Company

FROM: Margaret Berger, Principal Investigator

RE: Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Redevelopment Project, Seattle, King County, Washington

DAHP PROJECT: 2017-04-02572

The attached short report form constitutes our final report for the above referenced project. CRC completed updated and initial historic property inventory forms for four structures slated for demolition (DAHP Properties 38460, 709702, 709703, and 709704). Based on CRC's investigations three of the four structures are significant on the local level and are potentially eligible for nomination as Seattle Landmarks. These structures will be adversely impacted by proposed project plans. Potential mitigation measures for these impacts are presented. CRC recommends location specific archaeological monitoring during ground disturbing activity should proposed project actions reach native Holocene sediments. Please contact our office should you have any questions about our findings and/or recommendations.

1416 NW 46TH STREET, STE 105 PMB 346 SEATTLE, WA 98107
PHONE 206 855-9020 - info@crcwa.com

CULTURAL RESOURCES REPORT COVER SHEET

Author: Sonja Kassa

Title of Report: Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Redevelopment Project, Seattle, King County, Washington

Date of Report: June 22, 2017

County(ies): King Section: 14 Township: 25 N Range: 03 E

Quad: Seattle North, WA (1983) Acres: approximately 2

PDF of report submitted (REQUIRED) ☐ Yes

Historic Property Inventory Forms to be Approved Online? ☒ Yes ☐ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:

_____
_____
_____
_____
_____
_____
_____
_____

- Submission of PDFs is required.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.
- Please check that the PDF displays correctly when opened.

Cultural Resources Assessment for the
SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Redevelopment Project,
Seattle, King County, Washington

Table of Contents

Management Summary

This report describes the cultural resources assessment for the SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Redevelopment Project, Seattle, King County, Washington. The Watershed Company, on behalf of the Port of Seattle (the Port), requested a cultural resources assessment prior to ground disturbing activities associated with the proposed redevelopment of Fishermen's Terminal in the Interbay neighborhood of Seattle. Presently, the proposed project is in the planning and design phase; however, the Port anticipates the demolition of three buildings, the addition/renovation to an existing building, the construction of two warehouse/light industrial buildings, associated parking, and street improvements, and site preparation. This assessment was developed to identify any previously recorded archaeological or historic sites in the project location and to evaluate the potential for the project to affect cultural resources.

Background research conducted by Cultural Resource Consultants, LLC (CRC) did not result in the identification of previously recorded precontact archaeology within the project location. Five historic commercial structures were previously recorded at Fishermen's Terminal; one of these, the Seattle Ship Supply building (C-9), is within the proposed project and was determined not eligible for state and national historic registers in 2003. The Seattle Ship Supply building is scheduled renovations and additions under the proposed project .The remaining three structures are slated for demolition under the proposed project, two net sheds (N-7 and N-8) and a bank (C-12), meet the age threshold for historic structures and had not been previously inventoried.

CRC completed and updated historic property forms for the four buildings. These resources were documented and evaluated for historic register eligibility following local, state, and national criteria. Based on CRC's review, the Seattle Ship Supply building and the two net sheds are significant on the local level and are eligible for nomination as Seattle Landmarks. Recommendations for the mitigation of adverse impacts (i.e. demolition and alteration) to these properties are presented.

Subsurface field investigations were not completed due to the presence of impervious surfaces and thick historic fill underlying the locations of proposed redevelopment. While the project landscape has been modified by twentieth century development, near shore locations retain the potential to contain buried intact archaeological sites, which may have been capped by historic fill material or buried during seismic subsidence. Based on these lines of evidence, archaeological monitoring is recommended for any ground disturbance (e.g., inclusive of street improvements, utility installation, etc.) within Holocene deposits in the proposed West Wall 1 location and the Gateway Building locations as well as improvements east and south of the Seattle Ship Supply building.

1.0 Administrative Data

1.1 Overview

Report Title: Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Redevelopment Project, Seattle, King County, Washington

Author (s): Sonja Kassa

Report Date: June 22, 2017

Location: This project is located at 2000 W Emerson Place in Seattle, King County, Washington.

Legal Description: The legal description for the project is the NE¼ of Township 25 North, Range 03 East, Section 14, W.M. This project is located on King County Tax Parcel 7666200105.

USGS 7.5' Topographic Map(s): Seattle North, WA (1983) (Figure 1).

Total Area Involved: approximately 2 acres.

1.2 Research Design

This assessment was developed as a component of preconstruction environmental review with the goal of preventing cultural resources from being disturbed during construction of the proposed project by identifying the potential for any as-yet unrecorded archaeological or historic sites within the project area. CRC's work was intended, in part, to assist in addressing state regulations pertaining to the identification and protection of cultural resources (e.g., RCW 27.44, RCW 27.53). The Archaeological Sites and Resources Act (RCW 27.53) prohibits knowingly disturbing archaeological sites without a permit from the Washington State Department of Archaeology and Historic Preservation (DAHP), the Indian Graves and Records Act (RCW 27.44) prohibits knowingly disturbing Native American or historic graves. This project is being completed in compliance with the State Environmental Policy Act (SEPA). SEPA requires that impacts to cultural resources be considered during the public environmental review process. Under SEPA, the DAHP is the sole agency with technical expertise in regard to cultural resources and provides formal opinions to local governments and other state agencies on a site's significance and the impact of proposed projects upon such sites.

CRC's investigations consisted of review of available project information and correspondence provided by The Watershed Company and the Port, local environmental and cultural information, and historical maps. CRC also contacted cultural resources staff of the Duwamish Tribe, Muckleshoot Indian Tribe, Snoqualmie Indian Nation, and the Suquamish Tribe Nation on a technical staff- to-technical staff basis to inquire about project-related cultural information or concerns (Attachment A). This communication is not intended to be or intended to replace formal government-to-government consultation with area Tribes. The Suquamish Tribe responded that they did not have any specific concerns regarding the project at this time (see Attachment A). No other communication was received. Any additional information made available subsequent to the submission of this report will be included in a revision of this report. This assessment utilized a research design that considered previous studies, the magnitude and nature of the undertaking, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the project, as well as other applicable laws, standards, and guidelines (per 36CFR800.4 (b)(1)) (DAHP 2017a).

1.3 Project Description

The Port is in the planning and design phase for the upland redevelopment of the Fishermen's Terminal. Tasks on the SEPA checklist include:

- Construction of an 86,250 square foot structure, referred to as the Gateway Building or Site, that would include a 21,000 square foot marine sale and service are, a 10,250 square foot office space, and a 55,000 square foot warehouse space near the entrance to Fishermen's Terminal;
- Construction of the West Wall site which will include 48,200 square feet of marine-flex industrial space and 33,000 square feet of exterior open space along the West Wall;
- Demolition of the existing Bank of America building and two adjacent net shed buildings;
- Renovation and additions to the Seattle Ship Supply building to equal an 26,000 square foot workforce and marine incubator;
- Street improvements along Emerson Street (along southern boundary of the Fishermen's Terminal parcel anticipated to be a demolition and replacement of the existing area) and 21st Ave W (along the western boundary of the Fishermen's Terminal parcel anticipated to include new parking, landscaping, and sidewalks);
- Utilities proposed include water/sewer/stormwater systems for use with the construction of new and modified buildings. Utility systems are anticipated to connect to existing Port Infrastructure throughout the Fisherman's Terminal property. Other utilities include electrical, cable, communication, and natural gas.
- Landscaping; and
- Associated site preparation work for project elements.

Anticipated Cut and Fill Quantities

Area	Grading (cubic yards)		Hot-mix Asphalt (HMA) (square yards)		Demolition (square yards)	
	Cut	Fill	Removal	Replace	Type	Area
Gateway Site	10710	10710	14650	10890	0	2950
Street Improvements – Emerson Street	350	350	690	690	0	0
West Wall Site	24530	24530	17370	1500	0	0
Street Improvements – 21st Ave W	1610	1610	650	3210	0	0
Ship supply Building Totals	1970	1970	3930	3930	0	0

Anticipated Cut and Fill assumptions include:

1. HMA Areas – Assumed that all asphalt would be demolished and replaced.
2. Grading – Assumed a minimum 1.5 foot thick cut section for all areas except under existing buildings and the proposed West Wall Building PAD.
3. West Wall building site – assumed removal of 15 feet of unsuitable material.
4. Street Improvement at 21st Ave W – Assumed entire length of west property line and includes new parking/landscape/sidewalk estimate.

5. Street Improvement at Emerson St – Assumed along South edge of property, simply a demo and replacement of the existing area.

Anticipated Future Building Foundations

Gateway Site	Up to 310 – 24 inch dia. piles at depth up to 40 feet, spaced at 15 feet o.c.
West Wall Site	Size/depth/spacing similar to Gateway site
Seattle Ship Supply Site	Up to 160 – 16 inch dia. ground improvements at depths up to 50 feet, spaced at 8 feet o.c.

For purposes of this assessment, the project location for cultural resources is considered to contain the locations of all project elements as described above and as shown in Figures 1 – 2.

2.0 Background Research

2.1 Overview

Background research was conducted in March and April 2017.

Recorded Cultural Resources Present: Yes [x] No [ ]
Five historic structures have been previously recorded within Fisherman's Terminal. Four historic structures, one of which has been previously recorded, are present within the proposed areas of disturbance. (DAHP 2017b; King County iMap 2017). These buildings are the 1918 Seattle Ship Supply building (C-9), a 1943 net shed (N-7), a 1954 net shed (N-8), and a 1964 bank (C-12). The Seattle Ship Supply building (C-9) is scheduled for renovations and structural additions. The remaining three structures are scheduled for demolition.

Context Overview: Numerous cultural resources investigations have been prepared within a one-mile radius of the project (e.g., Kaehler and Gillespie 2008). The context presented here summarizes environmental, ethnographic, historical, and archaeological information presented in these reports by reference; archaeological and historic data from the Washington State Department of Archaeology and Historic Preservation (DAHP) and the Washington Information System for Architectural and Archaeological Records Data (WISAARD) records search; ethnographic resources; geological and soils surveys (e.g., USDA NRCS 2017; WA DNR 2017); and historical maps and documents from Bureau of Land Management United States Surveyor General (USSG) Land Status & Cadastral Survey Records database, HistoryLink, Historic Map Works, HistoricAerials (NETR 2017), University of Washington's Digital Collection, Washington State University's Early Washington Maps Collection, CRC's library, and the King County Historic Preservation Program. Architectural material and supplemental project information was provided by the Port.

2.2 Environmental Context

The landscape of northwest Washington is a product of crustal deformation initiated by the Cascadia subduction zone; successive glacial scouring and deposition most recently during the Pleistocene; and landslides, erosion and deposition, and human activity during the Holocene (Troost and Booth 2008). The project is within the Willamette-Puget Lowland physiographic province characterized by the wide "trough" between the Coast and Cascade Ranges formed

during the advance and retreat of Pleistocene epoch glaciers (Franklin and Dyrness 1973; McKee 1972). During the Late Pleistocene or last glacial period (110,000 to 12,000 years BP), the Cordilleran ice sheet covered much of the American northwest and scoured the landscape during advance and retreat episodes initiated by localized climate fluctuations. The most recent glaciation was the Vashon Stade of the Fraser glaciation during which the Puget Lobe of the Cordilleran ice sheet entered northwest Washington around 17,000 years BP (Thorson 1980). This final glacial advance episode scoured the landscape producing north-trending ridges, extensive drift uplands, moraine features, topographic lows, and deposited glacial till prior to its recession.

The Puget Lobe reached the vicinity of present-day Seattle by about 14,500 years BP achieving its maximum extent near Olympia by 14,000 years BP (Booth et al. 2003). The onset of climatic warming caused the ice sheets to retreat to the north and began the transition into the Holocene. The Puget Lobe retreated past Seattle by roughly 13,600 years BP (Booth et al. 2003). As the glacier receded during this more temperate period, meltwater became impounded behind the ice forming a series of proglacial lakes that eventually merged into Lake Russell, which extended roughly from the southern margin of present-day Whidbey Island to Olympia impounding low lying sections of the Puget Sound and adjacent river valleys (Bretz 1913; Waitt and Thorson 1983). Glacial Lake Russell merged with Lake Bretz before draining via the Strait of Juan de Fuca (Minard and Booth 1988; Thorson 1981). This lake also extended approximately 160 feet above modern sea level (Bretz 1913:123). Marine backwater replaced the draining glacial meltwaters in surficial depressions, which in turn became freshwater lakes once isolated from the marine waters. As glacial meltwaters drained, sheets of outwash were deposited and channels were carved into the local landscape. Salmon Bay is one of these glacial outwash channel features (Galster and Laprade 1991; Porter and Swanson 1998).

While sedimentation was widespread and voluminous during the Pleistocene, deposition during the Holocene has been more restricted, occurring in river valleys and at the base of steep slopes (Booth et al. 2003). Geomorphic processes such as isostatic rebound, global sea level rise, tidal movements, and a large earthquake 1,100 years ago originating from the Seattle fault zone (located south of the project) causing localized subsidence north of the fault (Bucknam et al. 1992) are also factors that have affected the geography of the Puget Sound region to varying degrees during the Holocene (Booth et al. 2003; Thorson 1989).

As the climate stabilized during the Holocene, vegetation returned to the landscape and the climate warmed considerably to contemporary ranges. The project is within the *Tsuga heterophylla* (Western Hemlock) vegetation zone, the most extensive in western Washington. This zone has a wet, mild, maritime climate characterized primarily by Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), and western red cedar (*Thuja plicata*) with an understory of sword fern (*Polystichum muritum*), bracken fern (*Pteridium aquilinum*), Oregon grape (*Mahonia aquifolium*), and vine maple (*Acer circinatum*).

Historically, the landscape of the project and surrounding area was much different than the contemporary landscape. The project was located on the south shore of Salmon Bay in a small inlet characterized as an estuary and tide flats in between the uplands of the modern-day

neighborhoods of Magnolia to the west and Queen Anne Hill to the east (USCGS 1899). At this time, the lowland between these contemporary neighborhoods was much smaller than preset. Approximately one mile of land, primarily tide flats, separated Salmon Bay from Smith's Cove, an inlet in Elliott Bay, to the south. Prior to landscape modification in the late 1800s and early 1900s, the Fishermen's Terminal was situated in a narrow, protected saltwater bay that stretched from the present-day Shilshole Bay to approximately .5 mile east of the Ballard Bridge. At this time the water level of Salmon Bay fluctuated greatly with the tides (Williams 2000). At low tide, the water level would drop approximately 12 feet below the high tide mark leaving most of the bay exposed. A small creek, referred to historically as Ross Creek, The Outlet, or Shilshole Creek, flowed from Lake Union into the eastern end of Salmon Bay (Williams 2000). Numerous small streams, likely ephemeral in nature, drained from the steep uplands of the surrounding terrain. One or two of the streams were present along the western margin of the Fishermen's Terminal on early maps (USCGS 1899; NETR 2017). The intertidal zone of the Salmon Bay shoreline was a productive habitat, providing shellfish, crab, and marine fish.

Increased development and business ventures in the 1900s instigated rapid change of the landscape. Prior to 1912, the site now occupied by Fishermen's Terminal was a tidally inundated estuary mudflat. Two years later a large bulkhead was constructed 400 feet north of Emerson Street and the tide flats to the south filled with dredge material from the Ship Canal that was being constructed concurrently (Johnson n.d.). The dredge material would raise the surface 12 feet above the high tide line; however, this changed to four feet after the Hiram M. Chittenden Locks and Ship Canal were completed in 1917, which raised the water level of Salmon Bay as it was severed from Puget Sound (Oldham 2012). As stated in Roedel et al. (2004:12),

> Data comparing pre- and post-lock construction shows that the water surface area of Salmon Bay increased 125 percent, the shoreline increased 130 percent, the wetland area decreased from 49 acres to zero acres, and the mean tidal level was raised from 6.6 feet to 21 feet (2.0 meters to 6.4 meters) above mean lower low water (Chrzastowski 1983:8), inundating the historic period shoreline.

Presently, the Fishermen's Terminal is located in the Interbay neighborhood of Seattle. The project is located along the southern shore of the Ship Canal, approximately .06 mile west of the Ballard Bridge and approximately .75 mile southeast of the Hiram M. Chittenden Locks, which divide the fresh waters of Lake Union and Lake Washington from the Puget Sound. The Fishermen's Terminal is relatively level with an average elevation of 23 feet. The parcel is composed primarily of a marina within the Ship Canal and a commercial/industrial area along the southern and eastern margins characterized by large buildings, outdoor storage, and parking lots.

The Fishermen's Terminal location is a palimpsest landscape largely characterized by glacial advance and retreat features that have been subsequently shaped by Holocene erosion and deposition and most recently by human land building activity. The results of these geomorphic processes and human activity created the landforms and parent materials present in the project location. The surface geology is mapped as (Qtf) Tide flat deposits, non-glacial deposits, and artificial fill (Troost et al. 2005). Tide flat deposits are sediments deposited during the Holocene

over Pleistocene till and outwash. Historically, these sediments are exposed in broad coastal benches at low tide. These deposits are described as silt, sand, organic sediment, and detritus with some shells. They are typically loose to dense and saturated with lenses of shell and woody debris. In the City of Seattle, as well as elsewhere in the Puget Sound, these deposits have been overlain with artificial fill to expand level water front property to accommodate historic and modern development. Artificial fill depth is variable and may range from 1 to 15 meters depending on the topography of the underlying landform. This fill typically consists of gravel, sand, silt, concrete, garbage, slag, and other materials, placed as a direct result of human activity, of substantial areal extent or thickness. No soil data is available from the USDA NRCS (2017).

Numerous geotechnical reports have been completed by various firms within the Fishermen's Terminal parcel over the past decades and provide insight into the subsurface conditions of the project location. Shannon & Wilson, Inc. (1999) completed geotechnical testing in response to eight new Port substations and two new Seattle City Light substations within Fishermen's Terminal. Investigations consisted of the excavation of borings and test pits dispersed throughout the upland of the terminal. Of these, Borings 10 and 11 were advanced approximately 50 meters north of the two net sheds and 70 meters north of the bank building. Sediments observed in Boring 10 consisted of 7 feet of fill material described as loose to medium dense gray-brown slightly silty to silty fine to medium sand intermixed with coarse sand, gravel, and organics. Below this, native sediments were present. Sediments consisted of interbedded layers of silts, sands, and clay interspersed with a peaty organic layer from 7 to 9.5 and 23.5 to 30 feet below surface. Boring 11 contained potentially two episodes of fill to a depth of 12 feet below surface, the upper layer (0 to 9.5 feet) had peat intermixed. Native sediments were similar to Boring 10 with an isolated peat layer at 27.5 feet below surface.

Borings 12 and 13 were advanced approximately 93 meters south of the Seattle Ship Supply building. Here, fill extended to a depth of 5 feet below surface. Below this, native sediments consisted of sand/clay with woody debris, shell, and peat to 12 and 19 feet below surface. Boring 12 contained a peat layer from 21 to 27 feet below surface.

Borings 5 and 6 were advanced in the immediate vicinity of the proposed West Wall 1 building and consisted of 10 and 5 feet of fill material, respectively. Native sediments consisted of increasingly dense sands and silts. Boring 6 contained a peat and silt deposit with wood fragments from 17 to 24 feet below surface.

2.3 Archaeological Context

Thousands of years of human occupation of the Puget Sound have been summarized in a number of archaeological, ethnographic, and historical investigations over the past several decades that provide a regional context for evaluating the project (e.g., Greengo 1983; Kopperl et al. 2010; Larson and Lewarch 1995; Morgan 1999; Nelson 1990). Archaeological evidence suggests the presence of nomadic hunter-gatherers not long after glaciers retreated and catastrophic meltwaters subsided after which landforms stabilized during the late Pleistocene to early Holocene. Consequently, evidence of early human occupation in once glaciated areas is found atop intact glacial sediments, which provide a stratigraphic lower limit for human occupation in these areas. Following deglaciation, subsequent changes to landforms, climate, and vegetation

influenced the available resources and, consequently, the spatial distribution of human activities. Similar to elsewhere, human land use was generally structured around the value of natural resources available in local environments including fresh water, terrestrial and marine food resources, forests, and suitable terrain.

The Puget Lowlands have yielded little evidence of human presence on the landscape dating to the late Pleistocene-early Holocene. The human culture during this period often referred to as Paleoindian, associated more with the Clovis culture, or Paleoarchaic, associated more with the Western Stemmed Tradition along the Pacific Coast of North America, has been compiled from relatively few archaeological sites (Ames et al. 2016). Recently, evidence of human occupation in Redmond, King County dates to approximately 12,000 to 9,000 cal BP as evidenced by archaeological site 45KI839 identified below deeply buried, stratified Holocene sediments overlaying Pleistocene glacial deposits at the confluence of Bear Creek and the Sammamish River at the north end of Lake Sammamish nearly 13 miles east of the project location (Kopperl 2016).

While early evidence of human occupation is relatively sparse, archaeological sites dating to the early to mid-Holocene are more commonly found. A synopsis of the cultural chronology identified in the Puget Sound region from the early Holocene to the ethnographic period is provided by Berger (2014:4-5):

> Archaeologists have identified an early period of occupation dated to between 9000 –5000 BP (before present) based on broad similarities in site and lithic assemblages. Many of the early sites are associated with the Olcott Complex in Western Washington, which are contemporaneous with similar Cascade Phase sites identified east of the Cascade Mountains. Olcott sites consist of lithic workshops and temporary hunting camps that contain leaf-shaped projectile points and tools and flakes made from locally available cobbles, and are found on glacial outwash surfaces in inland riverine settings (Morgan et al. 1999). The Olcott complex is believed to be representative of highly mobile hunter-gatherers who typically did not utilize marine resources (Carlson 1990), and several Olcott sites have been documented and studied throughout Western Washington and the Olympic Peninsula.
>
> After 5000 BP, archaeological evidence suggests a change in settlement patterns and subsistence economy in the region. From 5000 – 3000 BP an increasing number of tools were manufactured by grinding stone, and more antler and bone material was used for tool production. Living floors with evidence of hearths and structural supports suggesting more long-term site occupation are more common during this period in contrast to the Olcott Complex. On Puget Sound, evidence of task-specific, year-round, broad-based activities, including salmon and clam processing, woodworking, and basket and tool manufacture, date from approximately 4200 BP (Larson and Lewarch 1995). Characteristic of the ethnographic pattern in Puget Sound, seasonal residence and logistical mobility, occurred from about 3000 BP. Organic materials, including basketry, wood and

> food stuffs, are more likely to be preserved in sites of this late pre-contact period, both in submerged, anaerobic sites and in sealed storage pits. Sites dating from this period represent specialized seasonal spring and summer fishing and root-gathering campsites and winter village locations. Sites of this type have been identified in the Puget Sound lowlands, typically located adjacent to, or near, rivers or marine transportation routes. Fish weirs and other permanent constructions are often associated with large occupation sites. Common artifact assemblages consist of a range of hunting, fishing and food processing tools, bone and shell implements and midden deposits.

2.4 Ethnographic Context

The project is located within the traditional territory of the Duwamish a southern South Coast Salish people who spoke Southern Lushootseed; historically, members of Suquamish and Muckleshoot Tribes also utilized this vicinity (Suttles and Lane 1990; Waterman 2001). Major Duwamish winter villages were formerly located on the Cedar, Duwamish, Sammamish, and Black Rivers, Lake Sammamish, Lake Washington, Lake Union, Elliott Bay, and Salmon Bay (Harrington ca. 1909; Smith 1941:207; Waterman ca. 1920, 1922). The north shore of Salmon Bay was home to a Duwamish band known as the Shilsholamish or Shul-shale (Waterman ca. 1920, 1922). The Suquamish occupied Kitsap Peninsula (Spier 1936), as well as Bainbridge and Whidbey Islands prior to implementation of the Point Elliot Treaty of 1855 (Ruby and Brown 1992). Precontact Suquamish settlements were often located on major waterways, and heads of bays or inlets. The Muckleshoot Indian Tribe includes the descendants of an amalgam of tribes that lived in the Green River and White River valleys, including the Skopamish, Smulkamish, Stkamish, Yilalkoamish, and Twakwamish (Suttles and Lane 1990).

Ethnohistoric economies were structured based on seasonally available resources, which translated to seasonal occupation and logistic mobility. Permanent villages were generally established along rivers during the winter, and temporary camps were used while traveling to obtain seasonal food sources during the warmer summer months. Local Indian people shared many broadly defined traditions with their Puget Sound neighbors, including subsistence emphasis on salmon and other fish, land game, and a wide variety of abundant vegetable foods as well as household and village communities linked by family and exchange relations (Suttles and Lane 1990).

As described by Larson and Lewarch (1995:1-13-14),

> The Shilsholamish lived in longhouses along the shore of Salmon Bay and according to Costello (1974:86 [1895]), formerly numbered in the thousands, but were reduced to around 500 due to the attacks on them by native raiders from British Columbia and Alaska. The Shilsholamish numbered a dozen families in 1853 probably as a result of disease Duwamish elders described three longhouses at Shilshole, including one that was used as a potlatch house (Duwamish et al. 1933:Exhibit W-2). The village at Salmon Bay was on or near waters rich in marine resources including salmon (Collins 1892) and a variety of shellfish. Wandrey (1975) describes the abundance of clams, mussels, oysters, crabs, and

> shrimp present in Salmon Bay and a typical historic native gathering…The Villagers at Salmon Bay had bountiful marine resources available to them immediately in front of their homes. Their strategic location between Lake Washington and Puget Sound would have been a good position to profit from trade between saltwater and upriver or lake groups. With mutually acceptable trade goods (Wilke and James 1984), Salmon Bay was a conduit between the saltwater Duwamish and Suquamish and the inland groups, such as the Snoqualmie, forming an east to west cultural division similar to saltwater/inland connections in the north and south (Smith 1941). Peripheral areas were probably known to them and utilized in the summer months by certain families who chose to seasonally gather near their winter villages. However, areas such as West Point may not have been defended as territory by the Shilsholamish because of the surplus of resources found in their Salmon Bay home.

Twentieth century ethnographers documented locations of villages and names for resource areas, water bodies, and other cultural or geographic landscape features from local informants (e.g., Snyder 1968; Waterman ca. 1920, 2001). Knowledge of these features contributes to the broader archaeological context of the project location and the nature of the archaeology that may be encountered during this assessment. Salmon Bay was a thoroughfare for Puget Sound peoples headed east to Lake Washington via canoe and portage seeking resources and trade with neighboring tribes (Waterman 1922). In addition, inland peoples travelled by a trail to Salmon Bay in search of marine foodstuffs (Harrington ca. 1909). Harrington (ca. 1909) provides the name *tselágotsid* for an inlet that occupied southern Interbay, from which canoes could be portaged to Salmon Bay. Waterman (2001:54-56) identified six named places around Salmon Bay between Puget Sound and Lake Union:

- *Tcɛ'dkedäd*, translated as "lying curled on a pillow," references a small curved promontory in Ballard near the entrance to Salmon Bay. The name of this promontory references the shape of the sand spit, which is curled in. This location was popular for digging clams.
- *C1lco'lutsid*, translated as "mouth of *cilco'l*," references Salmon Bay. This bay was also referred to as Shul-shale, presumably for the tribe that lived here.
- *C1lco'l*, translated as threading a bead or something" references the way this narrow estuary invades the shoreline and is the location of a Duwamish village site. Indian peoples used this estuary as a transportation route east to Lake Washington. The *Cilcol-a'bc* tribe lived at the northern shore of Salmon Bay in present day Ballard. At the time Euro-Americans arrived, the headman of the settlement was Shilshole Curly, while the last person to live at this settlement was Indian Charley or *Xwe'Ltct1d*.
- *B1t^{1}da'kt*, translated as "a kind of supernatural power," references a very small creek that entered the north side of Salmon Bay in proximity to the Fremont Bridge. The power referenced in this name gave an individual the ability to enter the underworld to regain a guardian spirit. At this creek, shamans held dances.
- *Qw^{3}ûla'stab*, translated as "a small bush with white flowers and black berries," references a small creek, different than the aforementioned, that enters the same inlet.

- *Hwiwa'iq*^{u}, translated as "large, having lots of water," references a creek that drained into the south shore of Salmon Bay through a gully from the neighborhood of Fort Lawton.

Numerous other place names are identified along shoreline of Magnolia and southern Interbay; these are mapped in Larson and Lewarch (1995:Figure 1.4).

2.5 Historical Context

Euro-American exploration of the Puget Sound began in 1792 with Captain Vancouver, followed by the Wilkes Expedition in 1841. In 1850, the federal government enacted the Oregon Donation Land Act, which enticed settlers to the area by awarding them free land. In 1851, the first Euro-American settlers arrived on Alki Point and established a temporary settlement (Wilma 2001). They later moved across Elliott Bay and established the settlement of Seattle, honoring Indian Chief Sealth of the Duwamish people. Early settlers explored the surrounding landscape and many staked claims under the Oregon Donation Land Act. At this time, Interbay consisted primarily of salt marsh and tide flats. In 1853, Washington was established as a territory, which increased people's interest in settling the Puget Sound region. In this same year, Dr. Henry Smith (b. 1830 – d. 1915) chose the small inlet on the south shore of Salmon Bay and built a cabin. Smith had travelled from Ohio and chose the location for its potential proximity to shipping and railway ventures. Smith was followed by Edmund Carr and E. M. Smithers who staked adjacent claims on Salmon Bay (USSG 1855, 1863).

In the early years, Smith was one of two medical practitioners in Seattle and set up a successful practice (Rochester 2001). He established a large log structure on his property to serve as an infirmary and dedicated other portions of his land to farming and orchards. Before his death in 1915, he helped shape Seattle through many on his talent outlets: he was the doctor on the Tulalip Reservation, a real estate presence in Seattle, owner of logging ventures, and a poet.

In 1855, following the signing of the Point Elliot Treaty and others, area tribes were forced to abandon many of their Puget Sound villages and relocate to reservations. The treaty dissolved Indian title to their traditional and accustomed lands and by 1855-1856 the federal government used military force to contain Indian people dissatisfied with the poor quality of reservation lands. Individuals considered to belong to the Suquamish Tribe were relocated to the Port Madison Indian Reservation and the Muckleshoot Indian Tribes was relocated to the Muckleshoot Reservation. Some Duwamish people moved to these reservations; however, many remained on their ancestral lands. The Duwamish Tribe is currently seeking federal recognition (Duwamish Tribe 2011).

In 1880s, the Seattle Lake Shore & Eastern Railroad came to Salmon Bay by way of The Outlet (also known as Ross Creek or Shilshole Creek) valley via Lake Union and Lake Washington (Wilma 2001). In 1892, the Great Northern Railway expanded south along Puget Sound, traversed Salmon Bay and continued south into Seattle. The first depot of the railroad was at Smith's Cove, which was later moved. The Ballard neighborhood continued to expand on the northern shore of Salmon Bay and became a hub for local saw mills after The Great Fire 1889 in Seattle proper. The community of Boulevard was changed to Interbay in 1894 and the local

economy catered to transportation ventures driven by an employee base of Slavic and Finnish immigrants.

The idea to construct a canal to provide maritime connectivity between the Puget Sound and the Seattle lakes had been first put forth by Thomas Mercer in 1854 and was later discussed by the federal government in 1871 (Williams 2000). However, early routes were proposed from Elliot Bay to the south end of Lake Union. Local support focused on the present route of the canal as Seattleites rallied around concerns for real estate and reducing their reliance on the railroads, though the government was of the opinion that Shilshole Bay could be vulnerable to enemy attack. Realizing the importance of maritime connectivity, The Lake Washington Improvement Company, formed by Judge Thomas Burke and David Denny, used $50,000 in capital to contract with Wa Chong to cut two canals in 1885, one between Lake Union and Lake Washington and one between Lake Union and Salmon Bay. No long after this effort was completed it was clear the canals would need to be scaled up to allow for efficient use.

A component of the Washington State Constitution, adopted in 1890, was the Harbor Line Commission, which called for the establishment of harbor areas to be established for the development of port facilitates (Burke 1976 in Johnson n.d.). Appropriations from the United States Congress in 1894 and 1896 had authorized $175,000 for dredging of Shilshole Bay. In 1900, the right-of-way for the Ship Canal was secured and in 1906 Hiram M. Chitttenden of the U.S. Army Corps of Engineers designed the locks at The Narrows of Salmon Bay in tandem with the canal design. Construction began in 1911 and by 1917 the canal was open. The lock design caused the water level of what was once east Salmon Bay to rise approximately 21 feet above mean sea level and convert to a freshwater environment. During the construction process, dredge spoils were used in land building in low-lying areas surrounding the canal to capitalize on the valuable real estate.

In 1911, the Port of Seattle was created and a development proposal was set forth for the southern shore of Salmon Bay. In May of 1912 the Port set aside 35.4 acres of land on the southern shore of the bay (Johnson n.d.; Pinnacle GeoSciences 2009) and began construction of the Fishermen's Terminal in 1913 (Oldham 2012). In December 1913, King County voters approved the diversion of $175,000 to be used toward the development of the terminal. The terminal was one of the Port's first projects encompassed under a comprehensive effort to improve Seattle's harbors. The terminal had been envisioned as a harbor for Seattle's fishing fleet as no homeport had previously existed. The Puget Sound Purse Seine Fishermen's Association led by the fishing boat operators had been vying for a centralized public port with facilities to maintain their boats and equipment.

Construction of the terminal involved land building to make the tidal flats useable (Johnson n.d.). Bulkheads were emplaced and dredge material from the construction of the Ship Canal was imported as fill to build the land approximately 12 feet above the existing high tide line leaving the terminal four feet above the waterline after the Ship Canal locks were constructed (Oldham 2012). On January 10, 1914, the terminal housed Seattle's fishing fleet. The new terminal included 1,800 feet of moorage, accommodations for 100 boats, a large warehouse for nets and equipment, dry storage ways, and a marine railway. The opening of the terminal was marked by

a boat parade through Salmon Bay involving ships from all over Puget Sound and even Alaska. The event was attended by Governor Ernest Lister; Seattle Mayor, former legislator, and future Port Commissioner George Cotterill; and Port Commission Chairman Hiram M. Chittenden. Originally dedicated as The Port's Fishermen's Headquarters, it quickly became known as Fishermen's Terminal.

Over the following decades, the Port expanded and improved the terminal. The Port purchased two parcels of land (7.67 and 0.83 acres) near West Emerson Street in 1914 and purchased 15.73 acres comprising the southwestern portion of the terminal in 1945 (Pinnacle GeoSciences 2009). The southwestern portion of the present day terminal was previously owned by Meacham & Babcock Shipbuilding Company and was used as a 22-acre shipyard (Pinnacle GeoSciences 2009). The shipyard included six wooden ship construction areas, paint and oakum houses, mill buildings, blacksmith and metal working shops, kiln, railroad spur, cranes, etc. This parcel was later acquired by the Port, a sawmill, and a wood products company by 1930 and was subsequently consolidated by the Port. Continuing improvements consisted of the expansion of the land via fill material contained behind bulkheads. Subsequent to land building, new Port facilities were added that included piers, net sheds, office buildings, etc. Presently, the terminal occupies 55.4 acres. The majority of the land had been acquired by the mid-1950s and the configuration of the terminal has remained generally consistent since the 1960s. The terminal was the center of the regional fishing industry and generated thousands of jobs and millions of dollars of business revenue and taxes, even in its more recent decline.

2.6 Historical Records Search

Review of historical maps and aerial imagery provided an understanding of the historic and modern land use, and ownership of the project. The General Land Office (GLO) conducted early cadastral surveys to define or re-establish the boundaries and subdivisions of Federal Lands of the United States so that land patents could be issued transferring the title of the land from the Federal government to individuals. These maps and land serial patent records provide information on land ownership in the 1800s. The USSG (1855) map depicts the project location within Salmon Bay and in Tracts 1, 2, and 3 of the NE¼ of Section 14 (Figure 3). On this map, the homesteads of Edmund Carr (west of the project) and Henry Smith (south of the project), in addition to others surrounding Salmon Bay, are represented as single structures within fields. Smith's cabin was located in the vicinity of the contemporary intersection of W. Dravus Street and 15th Avenue W. The Fishermen's Terminal boundary does not overlap with these annotated homestead locations. A small creek divided Smith's land and passed through the southwestern portion of the project where it enters into Salmon Bay. The USSG (1863) map, no longer shows Carr's field and homestead (Figure 4). On this map, Smith still owned his parcel of land within the project location. To the south of Smith and north of Smith's Cove, E. M. Smithers owned 160 acres of land, as such, Smith and Smithers owned the tide flats that comprise the neighborhood of Interbay. To the north, on the northern shore of Salmon Bay, Ira W. Utter claimed 156.6 acres. According to the BLM (2017), Tracts 1 and 2 were patented to Edmund Carr on March 30, 1871 (Document Nr: 412; Accession Nr: WAOAA 075488; Authority: September 27, 1850: Oregon-Donation Act (grant) [99 Stat. 496]). Tract 4 (labeled as Tract 3 on the 1855 map) was patented to Henry A. Smith on December 9, 1864 (Document Nr: 197; Accession Nr: WAOAA 075445; Authority: April 24, 1820: Sale-Cash Entry [3 Stat. 566]).

Smith also received patents for Tract 4 and 5 in Section 14. By 1890, the landscape surrounding Salmon Bay appeared much more developed and annotations of planned development are within a filled Salmon Bay (Anderson 1890) (Figure 5). On this map, there was no ownership listed in the project location; however, local neighborhoods were being established and Interbay was known as Gilman's at this time. The Seattle Lake Shore & Eastern Railway had been established along the northern shore of Salmon Bay traversing the bay and heading south and east toward Smith's Cove and Lake Union, respectively. On this map, two railroad bridges were present just east of the project location and are shown as wood trestle bridges in historic photographs (Seattle Municipal Archives 2016).

By turn of the century, the United States Geological Survey (USGS) and the United States Coast Geodetic Survey (USCGS) had surveyed the vicinity and provided information on the local geology and shoreline location. The USGS (1897) land classification sheet depicts the project location as within "Cut areas not restocking" and a salt marsh (Figure 6). No cultural annotations were present in the project location. The USCGS (1899) map illustrates the southern and eastern portions of the Fishermen's Terminal as within Salmon Bay, showing the Seattle Ship Supply building and the two net sheds within Salmon Bay (Figure 7). Much of the shoreline within the project was annotated as tide flats and no cultural features were noted within the project. On this map, Seattle had begun to develop and the neighborhoods of Interbay, Ballard, and Fremont, southeast, north, and east of the project respectively, were platted. These neighborhoods were interconnected by the railroad and road. The railroad followed the north shore of Salmon Bay crossing the bay south via the Ballard Bridge before bounding the project in the southeast corner and continuing south towards Seattle's city center. At this time, Magnolia had very little development aside from an Army Reserve and a few homesteads on the south shore of Salmon Bay. The western portion of the project appeared to be natural shoreline that was characterized by residential or small commercial development and docks.

Historic maps from the 1900s provide insight to changes in and surrounding the project location. The Anderson (1907) map demonstrated that Smith continued to own his parcel labeled as D. C. or donation claim that encompasses the project. No ownership was listed for Tracts 1 and 2 of Section 14 on this map. Utter and Smithers continued to own the land to the north and south of the project. Fort Lawton had been established in the Magnolia neighborhood to the west of the project. The Kroll (1912) map shows similar conditions as the Anderson (1907) map. Differences on this map primarily consist of the subdivision of land in Sections 22 and 23, southwest of the project in the Magnolia neighborhood. In 1912, the Port began construction of the Fishermen's Terminal and Smith presumably sold or leased his land to the Port sometime after this map was printed. A 1917 Sanborn Map shows the Port of Seattle's Commission Salmon Bay Terminal occupying the southeast portion of the present day terminal (Figure 8) (Pinnacle GeoSciences 2009:Figure 8a). To the west, occupying the south central portion of the present day terminal, was the Meacham & Babcock shipbuilding company, which encompassed 22 acres. By 1926, Smith, Smithers, and Utter still owned their land claims (Kroll 1926). On this map, the Lake Washington Canal had been constructed and the Canal Locks were also depicted. This map shows the original shoreline of Salmon Bay overlain with the redefined shoreline of the Ship Canal. The 1930 Sanborn Map shows that Meacham & Babcock's parcel had been acquired by the Port of Seattle, Pacific Wood Products, Inc., and Lumber Products, Inc. Sawmill

(Pinnacle GeoSciences 2009:Figure 8a). A fireworks storage area was present in the general location of the contemporary net sheds included in this study. The Metsker (1936) map illustrates the Ship Canal labeled as the Salmon Bay Waterway to the west of the 15th W. Bridge (Ballard Bridge) and the Lake Washington Canal east of the bridge. Interbay and the surrounding neighborhoods were platted on this map and the Port was listed as the landowner. Surrounding businesses on the canal consisted of lumber mills, shingle mills, ship building plants, an engine company, and an aircraft corporation. A 1949 Port of Seattle drawing depicts an old mill refuse dump in the location of the present day bank included in this study and a garage in the location of the present day net sheds also included in this study (Pinnacle GeoSciences 2009:Figure 8b). By 1956, Shell Oil Company (1956) completed a map that depicts the Fishermen's Terminal similar to that of present, though no structures are identified within the terminal (Figure 9).

Historic photographs are available from 1914 and 1915 (Figures 10 and 11). These depict the terminal parcel as minimally developed and primarily tide flats. One industrial structure is present in the 1914 photograph. Other development included trestles for access to the wharf. Historic aerial imagery is available for the terminal starting in 1936 (NETR 2017). At this time, the southeast portion of the project had been filled and was characterized by commercial development (Figure 12). A historic photograph from 1955 depicted the terminal parcel developed similar to that of present (Figure 13). By 1968, the project appeared similar to that of the present day with the southern and western shorelines of the project as filled over and exhibiting commercial development. At this time, the natural shoreline was no longer visible. Changes over time since 1968 have been minimal and have included the addition of docks in the northwest corner of the Fishermen's Terminal. Pinnacle GeoSciences (2009:Figure 6) provide an overview of the changes within the southern portion of the Fishermen's Terminal between 1936 and 2002 (Figure 14).

Historic topographic maps are available for the Fishermen's Terminal beginning in 1903 (NETR 2017). Maps from 1903, 1908, and 1909 depict the Fishermen's Terminal within Salmon Bay to the east and north, a large salt marsh to the south, and dry land to the west. No cultural annotations are present within the project location on these maps; however, the railroad is present to the east and two structures are present just northwest of the Fishermen's Terminal. The 1949 map shows minimal development within the Fishermen's Terminal; at this time much of the development was along the eastern boundary. The Fishermen's Terminal is not depicted again until the 1966 map. Between 1966 and 1969, buildings in the southwestern potion of the project were demolished, land building occurred in the southwestern and western portion of the parcel, and new buildings were erected. These included the depiction of the 1943 and 1954 net shed buildings. The parcel remained similar to these 1969 changes with the addition of a few new buildings in the southeastern and northwestern portion of the project.

2.7 Cultural Resources Database Review

DAHP WISAARD: A review of DAHP's WISAARD database identified previous cultural resource studies, recorded precontact and historic sites, and recorded built environment, which helps gauge the potential and likely nature of cultural resources present within the project vicinity (DAHP 2017b). Fourteen cultural resources discipline studies have been completed within approximately one mile of the project location. These studies have been completed in

response to recreational trail development (Kaehler and Gillespie 2008; Perrin et al. 2010; Parvey 2004; Roedel et al. 2003; Trudel 2005), commuter rail system (Juell 2006), mixed-use and commercial development (Kaehler 2007; Piper 2008; Thompson 2008), wastewater improvements (Blukis Onat 2007; Dellert et al. 2013; Piper and Undem 2010), historic structures survey (The Johnson Partnership 2008), and telecommunications improvements (Finley 2014).

Of these assessments, the following identified cultural resources and made recommendations regarding these resources accordingly: Blukis Onat (2004), The Johnson Group (2008), Dellert et al. (2013), and Finley (2014). The following researchers made recommendations for additional cultural resources investigations due to a higher probability for locations to contain as-yet unidentified archaeological resources: Roedel et al. (2004), Piper (2008), and Thompson (2008). In addition, the following researchers both identified cultural resources and made recommendations for archaeological monitoring: Juell (2006), Kaehler (2007), Kaehler and Gillespie (2008), Piper and Undem (2010), and Perrin et al. (2010). The resources identified by these and other cultural resources discipline studies within one mile of the proposed project are described below.

Historic register listed properties, listed on the Washington Heritage Register and/or the National Register of Historic Places, within one mile of the project consist of the Ballard Bridge (.06 mile east), Chittenden Locks and Lake Washington Ship Canal (.25 mile east and .43 mile northwest), the Ballard Avenue Historic District (.55 mile north), the Fireboat Duwamish (.7 mile northwest), Adams School (1.00 mile northwest), Fire Station No. 18 in Ballard (.62 mile north), the Seattle Carnegie Library – Ballard Branch (.66 mile), and the Baker Street House (.9 mile north). None of these resources are anticipated to be physically impacted by the proposed project. Impacts to the viewshed of the resources nearest to the project, specifically the Ballard Bridge constructed in 1919, are not anticipated due to the extensive development of the Ballard and Interbay neighborhoods over the past century, which has already significantly altered the surrounding landscape of this resource.

There are over 4,000 historic structures recorded within one mile of the project. Within the Fishermen's Terminal parcel there are five recorded historic structures. The DAHP WISAARD record for this location has numerous duplicate inventories of these structures. Of these structures, two have been determined not eligible for listing on historic registers and three have not yet had a determination made regarding their eligibility status. The Seattle Ship Supply building and the South Bulkhead Wall located immediately north were those determined not eligible for historic register status. Those that have not received a determination include a ca. 1920 small commercial structure, a 1943 net shed (N-3?) recommended potentially eligible for historic registers, and a 1975 retail building.

The Seattle Ship Supply building is under review as part of the proposed project and is slated for demolition. According to the inventory on WISAARD, this structure was determined not eligible for register status in 2003 (DAHP 2017b). It is described as,

Significance Narrative

Captain Olaf O. Hvatum, a Ballard Fisherman, started the Seattle Ship Supply Company in 1937 at Fishermen's Dock, also known as Fishermen's Terminal. The company provided supplies to Seattle fishermen for many years. The Seattle Ship Supply Company operated from this location until recently. The building has undergone numerous alterations, most notable the addition of corrugated metal siding and the covering of all windows. The building is not eligible for listing in the NRHP under criterion A, B or C due to the extensive alterations and lack of historical significance.

Physical Description

This vernacular industrial has been completely resided and the windows have been covered. The north elevation ground floor windows have been altered. Windows on the ground floor originally were large multi-pane windows. Later the windows were altered to large storefront windows and recently they have been covered with corrugated metal. This two-story building has a monitor roof (Entrix, Inc. 2003).

Three cemetery resources are located within one mile of the project and are all located in the same cemetery complex on the north side of Queen Anne Hill. These include the Butterworth Arthur A. Wright Funeral Home built in 1929 and located at 520 W Raye Street; the Hills of Eternity Cemetery located at 2625 5th Avenue W.; and the Mt. Pleasants Cemetery, which encompasses the Hills of Eternity Cemetery and is located at 700 West Raye Street.

Four archaeological sites have been identified within an approximately one-mile radius of the project location and all sites are over .9 mile from the project. These sites are associated with the precontact and historic eras. Site 45KI1 was recorded in 1950 as a campsite containing stone tools in the center of Magnolia overlooking a historic marsh (University of Washington 1950). In 1958, there was an attempt to revisit the site, but no artifacts or deposits were observed. It was noted that the artifacts had been collected and were in the possession of local residents.

Site 45KI1000, also known as the Salmon Bay Midden, is a precontact shell midden located on the northern shore of the historic Salmon Bay (Major 2010). This site is described as "Marine shell and fire cracked rock …visible in silty soil overlying glacial gravel deposits, as well as in intertidal zone and beach below" (Major 2010:2). The location of this site was compared to historical maps, which provided conflicting information on the natural shoreline location. This was understood to indicate that the deposits may or may not be in situ and may have come from land building activity associated with the construction of the locks.

Site 45KI1298 is located on the northern shoreline of the historic Salmon Bay and is comprised of both precontact and historic components (Stevenson 2016). This site was identified during archaeological monitoring and defined during testing. A buried historic surface containing archaeology was identified below historic/modern fill atop the original ground surface. Below this was a stratum containing precontact material. Historic material consisted of burned and unburned structural material (e.g., wood and brick), charcoal, debris (e.g., ceramics glass, bone,

etc.), glass jars, nails and wire, and a utility pipe. Precontact material consisted of lithic waste flakes, fire-modified rock, and faunal remains.

Site 45KI1319, also known as the Fremont Siphon, is a historic site listed on WISAARD east of the project in the Fremont neighborhood; however, no associated form is available at this time for this site. Numerous cultural resources discipline studies identified above have referenced this resource and recommended that it be recorded if/when it is exposed (e.g., Piper and Undem 2010).

Seattle City Landmarks Map: The Seattle City Landmarks Map (2017) shows many resources within one mile of the proposed project. The nearest to the project is the Ballard Bridge.

3.0 Archaeological Expectations

3.1 Archaeological Predictive Models

The DAHP statewide predictive model uses environmental data about the locations of known archaeological sites to identify where previously unknown sites are more likely to be found (DAHP 2017b). The model correlates locations of known archaeological data to environmental data "to determine the probability that, under a particular set of environmental conditions, another location would be expected to contain an archaeological site" (Kauhi and Markert 2009:2-3). Environmental data categories included in the model are elevation, slope, aspect, distance to water, geology, soils, and landforms. According to the model, the project location is ranked as "Survey Highly Advised: Very High Risk."

Contemporary city zoning maps identify an archaeological buffer area that encompasses 200-foot buffer surrounding the historic Seattle shoreline. This buffer zone is aligned with the U.S. Government Meander line, which provides the approximate location of the saltwater shoreline prior to recent fill episodes or landscape alterations. This buffer zone was established as it represents the most likely location to identify most potentially "archeologically significant resources" (SMC 25.05.675 H, Director's Rule 2-98). The proposed West Wall 1 and Gateway locations overlap this buffer zone as do the proposed street improvements to Nickerson Street ad likely a segment of 21st Ave W. The Ship Supply building is located waterward of the 200-foot buffer zone; however, proposed improvements to the south and east of the building overlap this buffer zone.

3.2 Archaeological Expectations

This assessment considers the implications of the predictive model coupled with an understanding of geomorphological context, local settlement patterns, and post-depositional processes to characterize the potential for archaeological deposits to be encountered. Mapped surface geology and soils in the project are derived from native tide flats and fill in the form of dredge material from the Ship Canal. Geotechnical information available for the project location demonstrates that subsurface conditions are variable but generally consist of fill material over estuarine deposits atop glacial sediments. Due to the historic coastal location of the project, it is likely that coastal processes impacted archaeological deposits, if present. Historical records demonstrate that the project had been capped with fill in part to create land for the construction of the Fishermen's Terminal, indicating that potentially intact archaeological materials or

deposits may be found near the interface of the fill and native soils. Given the nature of the subject property it is likely that potential cultural materials and/or deposits could have been buried by tectonic induced land subsidence as seen at West Point (see Larson and Lewarch 1995), while surface or shallow archaeology may have been preserved by capping with fill. Conversely, potential archaeology that may be present throughout the vertical limits (undefined at present) of the project could have been significantly impacted by historic land modifications including dredging.

Historically, the natural estuary environment of the project location would have provided a rich array of plant and animal resources available for the Shul-shale peoples living at the village of *C1lco'l* on the northern shore of Salmon Bay. However, the location of the majority of the Fishermen's Terminal parcel within the historic (pre-1900s) intertidal zone made much of the area unsuitable for longer-term habitation and use. Precontact archaeology identified along the shoreline environment of Salmon Bay and the adjacent coastline demonstrates that precontact peoples occupied dry environments adjacent to tidal flats, such as sand marshes, as well as level hillslopes just above the beach (see Larson and Lewarch 1995). Both of these environments appear to have existed historically within the Fishermen's Terminal. However, at the time of this survey, no recorded precontact archaeological sites or ethnographically named places were identified within the project location. According to recorded data, types of precontact and ethnohistoric cultural resources that could be present may include evidence of resource procurement activities such as gathering of terrestrial and marine plant and animal resources, resource processing activities, shell middens, fish weirs, stone and bone tools or implements, hearth features/fire-modified rock, temporary camps, and/or shoreline travel, which could represent a range of domestic, subsistence, and ceremonial activities.

Since Euro-Americans arrived in the mid-1800s, Salmon Bay was seen as a choice location for marine and terrestrial transportation. Prior to the development of the Fishermen's Terminal, it was within land homesteaded by Henry Smith. In the late 1800s and through the 1900s, the Fishermen's Terminal and surrounding land was subjected to episodic modifications as the Fishermen's Terminal and adjacent Ship Canal were constructed in addition to other industrial ventures. As such, historic-period archaeological materials or deposits may be associated with logging, homesteading or commercial ventures, development of transportation routes, and/or maritime trade and travel associated with the historic wharf that represent a range of domestic and commercial activities. Historic infrastructure is present in the project location with five previously recorded historic structures in the Fishermen's Terminal parcel. One of these, the Seattle Ship Supply building, is within one of the three areas identified for development (see Figure 2). In addition, three historic structures have also been identified in these areas, totaling four structures that will be impacted by the proposed project.

4.0 Field Investigations

Total Area Examined: The entire project (approximately 2 acres).

Areas not examined: None.

Date(s) of Survey: April 7, 2017

Weather and Surface Visibility: Weather conditions were approximately 50 degrees, overcast, and raining. No native mineral soils were visible within the project area due to the presence of paved parking lots, sidewalks, planters, light industrial development, and underlying wharf.

Fieldwork conducted by: Sonja Kassa and James McNett. Notes are on file with CRC.

Field Methodology: Field methodology consisted of surface survey and photo-documentation of the project conditions and historic structures that are anticipated to be impacted by the proposed project (Figures 15 – 19). Subsurface survey was not conducted due to the presence of buildings, paved parking lots, and landscaping. Review of historic documents also identified that the native surface was buried below fill beyond the limits of hand excavation tools.

5.0 Results and Recommendations

5.1 Results

Cultural Resources Identified: Four historic structures were recorded on DAHP historic property inventory forms (Attachment C) and are described here:

Property #38460: the 1918 Seattle Ship Supply building (C-9)
The Marine Supply building is one of the oldest structures (1918) on the Fishermen's Terminal site (see Figure 16). The form of the Marine Supply building is a basilica, which has a central two-story space, 55 feet wide by 90 feet long with a continuous gable roof. The central space is flanked by two side shed structures 24 feet by 90 feet long. The main central structure and two side bays are heavy timber construction. The building was remodeled by the Seattle firm Carlson-Evey-Grevstad in 1953. The remodel has reduced the integrity of the original structure. There are no extant drawings and only suppositions can be made about the foundation, the original window placement, and other aspects of the building.

Unlike a basilica, which would place the entry on the east or west elevations, the north elevation is the public entry. The entry, centered on the elevation, has two distinctive vertical board doors with a stylized rounded marine window and missing hardware that is outlined on the wood in the shape of a whale. A canopy that projects approximately 6 feet from the face of the building protects the entry. The north wall has been reconfigured with large storefront windows that have a 24 inch sill with 7 feet high glazing that extend across the entire façade and continue 18 feet around the east and west corners. All the non-glazed surfaces are covered in stucco which replaced the former corrugated metal panels and discrete wood windows. The second story element above the entry is set back 24 feet from the façade and has eight 4 feet 6 inch square, 25 lite, wood fixed windows. The upper wall is clad in corrugated metal siding.

The east and west elevations have three elements, a central two story bay flanked symmetrically by two one-story sheds 24 feet wide with 3:12 slopes up to the central bay. The central bay has the original corrugated metal siding set above the approximately 15 feet high line formed by the

front elevation. Everything below the line is stucco; everything above is covered by the original 2-foot wide corrugated metal panels. The second floor has nine 6 over 6 double hung wood windows each approximately 3 feet wide by 6 feet high. Some of the second story windows are covered with translucent corrugated panels. A gable roof with an 8:12 slope runs the entire 90 feet of the central space.

The south elevation has remained the least changed, with the walls covered in the original corrugated metal siding. Some windows have been covered over; however, it is unclear when the work was completed. The major remodel by Carlson-Evey-Grevstad in 1953 did not include a south elevation but there are indications in the wall that windows have been covered over or removed.

The central space of the building is accessible via stairway to the second floor, which opens to the roof structure. The roof is supported by four trusses spaced 12 feet from the east and west walls and with three equally spaced trusses (approximately 24 feet on center) between them making a total of 4 trusses for the roof. Top and bottom chords and the webs of the trusses are made of 8-inch members connected to the chords by steel truss plates and 7 equally spaced steel screw rods. The trusses rest on 8-inch columns that are connected by diagonal 3x bracing to the bottom and top chords. The top chords of the trusses support 4x purlins spaced 4 feet on center. The exterior steel roof panels are attached directly to the purlins and appear to be relatively recent and not part of the original. The east and west end walls are made of typical 2x framing but are covered with vertical 1x boards. The other two walls (north and south) are typical framing with no boards, the corrugated metal siding attaches directly to the framing.

Two continuous truss structures span between the columns on both sides (north and south) of the shed wings and act as bracing for the high central space and connect the wings (aisles) to the central (nave) volume. The two (north and south) shed extensions are each approximately 24 feet deep and have ½ trusses every 12 feet made up of 4x chords and 2x webs. The metal roof panels are attached to regularly spaced 2x purlins.

Property #709702: a 1943 net shed (N-7) & Property #709703: a 1954 net shed (N-8)
While these net sheds were built almost a decade apart, N-8 was built following the same blueprints as N-7 (see Figures 17 and 18). The buildings have been regularly maintained and are in very good condition. All the interior units have a wood ladder attached to the wall, power, and sprinklers.

The structures are 192 feet long by 60 feet wide by 27 feet 8 inches high. The long sides (east and west) of the buildings are divided into 12 bays 16 feet wide by 30 feet deep by approximately 25 feet 6 inches high. This creates 24 discrete storage spaces that are separated by plywood walls that provide security and additional shear strength. The 24 spaces are ventilated by twelve 20-inch diameter steel ventilators that are regularly spaced at 16 feet on center along the ridge of the built up roof. Each ventilator serves two storage spaces.

The foundations consist of driven piles (approximately 15 inches in diameter) that are cut off at approximately 45 feet and embedded in reinforced concrete caps 2 feet high by 2 feet 6 inches

square. The pile caps are connected by reinforced concrete beams that sit on the pile tops and are 10 inches wide by 4 feet 9 inches high around the perimeter, and 10 inches wide by 3 feet high on the interior. The floors are a 5-inch thick reinforced concrete slab that is placed over compacted soil.

The walls are formed by 6 by 8 inch posts 8 feet on center on the long sides (east and west) and 6 by 8 inch posts 10 feet on center on the short sides. The columns extend up 15 feet to a continuous 8 by 16 inch beam that runs the 60 feet width of the structure. Each 16 feet wide shed is connected to the 16-inch deep beams by 6 by 12 inch pole beams at 10 feet on center. Stud partitions with 4 by 8 inch studs at 6 feet on center are connected by a plate of (2) 2 by 8 inch studs. The plates are connected with 6 by 10 inch purlins centered on the studs at 6 feet on center. The roof is made of 2 by 6 inch T & G decking covered with three-ply built up roofing. The interior walls have diagonal 3 by 12 inch bracing on each demising and exterior wall that connect to 4 by 8 inch girts, columns and beams. The exterior walls (east and west) have overlapping diagonal braces 3 by 6 inches that connect through two units.

The exterior of the building is clad with painted steel corrugated siding. Each unit (12 each side) has a 7 feet 4 inch wide by 8 feet high sliding door. The doors are built up of three layers, a back frame of 1 by 8 inch boards, a middle layer of 1 by 4 inch flooring and an exterior layer made of 1 by 8 inch boards and two steel ventilation grilles with mesh backing.

Property #709704: 1964 Seattle First Bank building (C-12)
The Seattle First Bank building, designed in 1964, was originally 31 feet wide by 82 feet long and enclosed an area of approximately 2454 square feet (see Figure 19). In 1976, a remodel by Seattle First Bank increased the enclosed area to 3364 square feet by expanding both ends, converting a portion of the front covered walkway into a vestibule and adding a drive thru teller canopy and island on the north side. The overall openness of the original design was compromised by the present Bank of America remodel, which was done in 2004 and essentially fortified the banking space with the addition of an ATM and bullet proof enclosures for the teller positions. In spite of these remodels, the existing building is only slightly different in intent than the original 1964 design by Wilkins and Ellison, local Seattle architects.

The building is laid out on a roughly modular 4-foot grid that accommodated the open floor plan and the storefront glazing system, which was incorporated into the present Bank of America version. The foundation was set on 12 inch augured concrete piles that were cut off at approximately 37 feet and topped with concrete pile caps which were connected by 12 inch wide by 18 inch deep reinforced concrete grade beams. The reinforced 6 inch concrete slab floor was set with a visqueen vapor barrier on top of compacted gravel.

The storefront walls are steel sections 1½ by 3 inches and 4 by 4 inches on a 4-foot grid. The typical glazing module on the south (front entry façade) is a bottom spandrel 4 feet wide by 20 inches high and an upper 4 feet wide by 7 feet 4 inch high ¼ inch plate glass portion on top that goes to the underside of the canopy. The original glass may have been replaced.

The most obvious design feature is the Corbusian catenary roof that floats over the banking hall. This is made up of custom truss joists spaced 2 feet on center. The curve of the trusses is taken on by the ½ inch plywood decking applied to both sides. The topside is covered with a built up roof membrane and the bottom side with a sprayed on textured finish. The lightweight structure floats 2-4 feet above the flat built up roof portions of the building creating a clerestory in the public banking area.

The other exterior walls are made of 6 inch SCR (Structural Clay Research) brick, a patented brick with nominal dimensions of 2⅔ by 6 by 12 inches, which is exposed on both sides to make a wall 6 inches thick overall. The interior of the building is more typical frame construction for demising walls and uses 2 by 8 inch ceiling joists at 16 inches on center to support the roof of ½ inch plywood with built up roofing. The typical interior height is 8 feet 2 inches clear. The finish materials have changed little over time. The site was reconfigured during the 1976, which altered the driveways.

5.2 Evaluation of Historical Significance

Resources are typically defined as significant or potentially significant if they are identified as of special importance to an ethnic group or Indian tribe or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the National Register of Historic Places (NRHP). Based on NRHP assessment criteria developed by the National Park Service, historical significance is conveyed by properties:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
B. That are associated with the lives of persons significant in our past; or
C. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. That have yielded, or may be likely to yield, information important in prehistory or history [NPS 2002:2].

According to the NRHP guidelines, the “essential physical features” of a property must be intact for it to convey its significance, and the resource must retain its integrity, or “the ability of a property to convey its significance.” The seven aspects of integrity are:

- Location (the place where the historic property was constructed or the place where the historic event occurred);
- Design (the combination of elements that create the form, plan, space, structure, and style of a property);
- Setting (the physical environment of a historic property);
- Materials (the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property);
- Workmanship (the physical evidence of the crafts of a particular culture or people during any given period of history or prehistory);
- Feeling (a property's expression of the aesthetic or historic sense of a particular period of time); and

- Association (the direct link between an important historic event or person and a historic property) [NPS 2002:44].

Criteria used for assessment of potential eligibility for the WHR are similar to NRHP criteria. Criteria to qualify include:

- The resource should have documented historical significance at the local or state level.
- The resource should have a high to medium level of integrity.
- Age of at least 50 years. If newer, the resource should have documented exceptional significance.

The City of Seattle uses the following guidelines for eligibility for identifying Seattle Landmarks. In order to be designated, the building, object, or site must be at least 25 years old and must meet at least one of the six criteria for designation outlined in the Seattle Landmarks Preservation Ordinance (SMC 25.12.350):

A. It is the location of, or is associated in a significant way with, a historic event with a significant effect upon the community, City, state, or nation; or

B. It is associated in a significant way with the life of a person important in the history of the City, state, or nation; or

C. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, City, state or nation; or

D. It embodies the distinctive visible characteristics of an architectural style, or period, or a method of construction; or

E. It is an outstanding work of a designer or builder; or

F. Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or the City.

In addition to meeting at least one of the above standards, the object, site, or improvement must also possess integrity or the ability to convey its significance. At the public meeting on designation, the Landmarks Preservation Board will receive evidence and hear arguments as to whether the site, building or object meets the standards for designation. If the Board does not designate the property, the proceedings terminate and the property cannot be considered for designation for five years, except at the request of the owner.

Based on these criteria, the 1964 bank did not possess historic or architectural traits that would support its eligibility for listing on local, state, or national historic registers. The Seattle Ship Supply building, determined not eligible for the national register in 2003, and two net sheds, previously unrecorded, were found to satisfy Criterion C outlined in the Seattle Landmarks Preservation Ordinance that would make these structures eligible as Seattle Landmarks.

All three of these structures were found to be significant as they are associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the City of Seattle's community, specifically the development of the Fishermen's Terminal. The terminal was the Port's first project encompassed under a comprehensive effort to improve Seattle's harbors. The terminal also provided the first public harbor that could house the region's fishing

fleet. The establishment of the terminal had a profound effect on the local community shaping the demographic and economy in addition to creating a major fishing industry hub in Seattle, which in turn created thousands of jobs and generates millions of dollars in income and tax revenue. While the terminal was completed in 1914, it was much smaller than present with only a single warehouse visible in historic photographs. Over the following century, the terminal expanded as dredge material was used to create the surrounding landform. Presently, the Seattle Ship Supply building is the oldest structure listed within the terminal based on review of county assessor records online (King County iMap 2017). The next oldest structures date to the mid-1900s, which includes the two net sheds.

The Seattle Ship Supply building has undergone numerous modifications over the past 99 years, which have contributed the loss of the structure's integrity. However, the age of the structure dates to four years after the construction of the terminal. In 1937, Captain Olaf O. Hvatum, a Ballard fisherman, started the Seattle Ship Supply Company to provide supplies to the fishermen. The Seattle Ship Supply Company continued to operate from this location until sometime before 2003. The Seattle Ship Supply building retains integrity of location, setting, feeling, and association. The two net sheds are intact examples of early net sheds and retain all seven aspects of integrity attesting to the significance of these structures, which embody the history of the Fishermen's Terminal.

5.3 Conclusions and Recommendations

CRC recorded four historic structures, three of which are significant locally (the two net sheds and the Seattle Ship Supply building) and may be eligible as Seattle Landmarks. As such, the proposed demolition and renovation/addition of these structures would result in an impact to historic built environment resources. If avoidance of these structures is not feasible, it is recommended that the Port develop and implement mitigation measures in conjunction with the Seattle Historic Preservation Program, King County Preservation Program, DAHP, and other applicable parties. Possible mitigation measures could include the completion of Seattle Landmarks nomination forms to determine if the structures could be listed on the local register and/or completion of Level II Mitigation Documentation as defined by DAHP, which would include more detailed documentation of the structures' architecture and history, and supplemental interior and exterior photographs. For the Seattle Ship Supply building (anticipated to be renovated and expanded), it is recommended that mitigation documentation should include an accurate as built drawing as this is not presently available and the replacement or use of in-kind materials for this structure where possible. Additionally, the use of interpretive information that would convey the historical significance of these structures could be used as public education tools and/or integrated into future planning and design efforts within the terminal.

CRC's research identified that the project location has a high potential to contain archaeological resources due to the project's environmental situation in a sheltered estuary and in proximity to recorded ethnographic place names and archaeological sites. Geotechnical information identified Holocene deposits contained between imported fill and glacially (Pleistocene) derived sediments that provide the lower limit of human occupation in the region. While much of the Fishermen's Terminal is located within the intertidal zone, shoreline locations would have been available for longer-term habitation that could have resulted in a more substantial material record that may

have been capped with historic fill or native sediments during seismic subsidence. Consequently, archaeological monitoring is recommended for any ground disturbance (e.g., inclusive of street improvements, utility installation, etc.) within Holocene deposits in the proposed West Wall 1 location and the Gateway Building locations as well as improvements east and south of the Seattle Ship Supply building.

In the event that any ground-disturbing or other construction activities result in the inadvertent discovery of archaeological resources, work should be halted in the immediate area, and contact made with county officials, the technical staff at DAHP, and tribal representatives. A protocol for inadvertent discoveries is provided in Attachment C. Work should be stopped until further investigation and appropriate consultation have concluded. In the unlikely event of the inadvertent discovery of human remains, work should be immediately halted in the area, the discovery covered and secured against further disturbance, and contact effected with law enforcement personnel, consistent with the provisions set forth in RCW 27.44.055 and RCW 68.60.055.

Attachments:

Figures & Tables	[x]
Other	[x] Copies of project related correspondence between CRC and Tribal cultural resources staff. [x] Historic Property Inventory Forms. [x] Proposed Inadvertent Discovery Protocol.

6.0 Limitations of this Assessment

No cultural resources study can wholly eliminate uncertainty regarding the potential for prehistoric sites, historic properties or traditional cultural properties to be associated with a project. The information presented in this report is based on professional opinions derived from our analysis and interpretation of available documents, records, literature, and information identified in this report, and on our field investigation and observations as described herein. Conclusions and recommendations presented apply to project conditions existing at the time of our study and those reasonably foreseeable. The data, conclusions, and interpretations in this report should not be construed as a warranty of subsurface conditions described in this report. They cannot necessarily apply to site changes of which CRC is not aware and has not had the opportunity to evaluate.

7.0 References

Ames, Kenneth, Charlotte Beck, and Robert Kopperl

2016 Chapter 3 – Cultural Setting. In *Results of Data Recovery at the Bear Creek Site (45KI839) King County, Washington* Volume 1, edited by Robert Kopperl, pp. 19-34. SWCA Environmental. Submitted to City of Redmond and David Evans and Associates.

Anderson Map Company (Anderson)

1890 Seattle 1890 City and Environs Map. In *Washington State Atlas.* Electronic document, http://www.historicmapworks.com/Map/US/54349/Seattle+1890+City+and+Environs+Map+17x19/, accessed March 30, 2017.

1907 Page 7 - Township 25 North, Range 3 East. In Atlas of King County 1907. Electronic document, http://www.historicmapworks.com/Map/US/1250063/Page+7+++Township+25+North++Range+3+East/King+County+1907/Washington/, accessed March 31, 2017.

Booth, Derek B., Ralph A. Haugerud, and Kathy G. Troost
2003 Geology, Watersheds, and Puget Lowland Rivers. In *Restoration of Puget Sound Rivers*, edited by D. Montgomery, S. Bolton, and D. B. Booth, pp. 14-45. University of Washington Press, Seattle.

Blukis Onat, Astrida R.
2007 Cultural Resources Background Investigations for the Revised Ballard Siphon Replacement Project, King County, Washington. Boas, Inc. Submitted to King County Department of Natural Resources and Wastewater Treatment Division.

Bretz, Harlan
1913 Glaciation of the Puget Sound Region. Bulletin No. 8. Washington Geological Survey, Olympia, Washington.

Carlson, Roy L.
1990 Cultural Antecedents. In *Handbook of North American Indians: Northwest Coast*, Volume 7, pp. 60-69, edited by Wayne Suttles. Smithsonian Institution Press, Washington, D.C.

Chrzastowski, Michael
1983 Historical Changes to Lake Washington and Route of the Lake Washington Ship Canal, King County, Washington. Water Resources Investigation Open-File Report 81-1182.

Collins, J. W.
1892 *Fisheries of the Pacific Coast*. Report of the Commissioner of Fish and Fisheries for 1888 Government Printing Office. Washington. D. C.

Dellert, Jenny, Amanda Bennett, and Matt Sneddon
2013 Cultural Resources Inventory for the Combined Sewer Overflow (CSO) Outfall 150 Replacement Project, City of Seattle, King County, Washington. HRA. Submitted to Seattle Public Utilities.

Duwamish Tribe
2011 Culture and History. Electronic resource, http://www.duwamishtribe.org/, accessed April 12, 2017.

Duwamish et al. Tribes of Indians vs. The United States of America
1933 Testimony before the Court of Claims of the United States Proceedings of the Indian Court of Claims, No F-275.

Entrix, Inc.
2003 PROPERTY: #38460 Seattle Ship Supply Company. On file at DAHP, Olympia.

Finley, Aimee
2014 Results of a cultural resources inventory of the SEA Interbay Train - AWS cell site (Trileaf #613635), Seattle, King County, Washington Applied Archaeological Research, Inc., Report No. 1392. Applied Archaeological Research, Inc. Submitted to Trileaf Environmental and Property Consultants.

Franklin, Jerry F., and C. T. Dyrness
1973 *Natural Vegetation of Oregon and Washington*. USDA Forest Service, Pacific Northwest Forest and Range Experiment Station, General Technical Report PNW-8.

Galster, Richard W. and William T. Laprade
1991 Geology of Seattle, Washington, United States of-America. Bulletin of the Association of Engineering Geologists 28:235-302.

Greengo, Robert E. (editor)
1983 *Prehistoric Places on the Southern Northwest Coast*. Thomas Burke Memorial Washington State Museum, University of Washington, Seattle.
1958 University of Washington Department of Anthropology Continuation Form, 45KI1. On file at DAHP, Olympia.

Harrington, John P.
ca. 1909 John P. Harrington Papers. National Anthropological Archives, Smithsonian Institution. Reel 15, 1907-1957, on microfilm held by Suzzallo Library, University Washington, Seattle.

Johnson, Larry E.
n.d. Historic Property Inventory Form, Historic Fishermen's Terminal – South Bulkhead Wall. On file at DAHP, Olympia.

Juell, Kenneth E.
2006 Archaeological Site Assessment of Sound Transit's Sounder: Everett-to-Seattle Commuter Rail System, King and Snohomish Counties, Washington. NWAA. Submitted to Herrera Environmental Consultants and Sound Transit.

Kaehler, Gretchen
2007 Archaeological Resources and Historic Buildings and Structures Assessment of the Proposed Ballard Blocks 2 Project, City of Seattle, King County, Washington. HRA. Submitted to Bridge Group II, LLC.

Kaehler, Gretchen, and Anne Gillespie
2008 Cultural Resources Assessment of the Proposed Burke-Gilman Trail Extension Project King County, Washington. HRA. Submitted to SVR Design.

Kauhi, T. C., and J. Markert
2009 Washington Statewide Archaeology Predictive Model. GeoEngineers. Submitted to DAHP, Olympia.

King County iMap
2017 iMap. Electronic resource, https://gismaps.kingcounty.gov/iMap/, accessed April 10, 2017.

Kopperl, R. (editor)
2016 Results of Data Recovery at the Bear Creek Site 45KI839, Redmond, King County, Washington. SWCA, Seattle. Submitted to City of Redmond and David Evans and Associates, Inc.

Kopperl, R., C. J. Miss, and C. M. Hodges
2010 Results of Testing at the Bear Creek Site 45KI839, Redmond, King County, Washington. Northwest Archaeological Associates, Inc. Submitted to City of Redmond and David Evans and Associates, Inc.

Kroll Map Company (Kroll)
1912 Township 25 N Range 3 E. In *Atlas of King County 1912*. Electronic document, http://www.historicmapworks.com/Map/US/503574/Township+25+N+Range+3+E/King+County+1912/Washington/, accessed March 31, 2017.
1926 Plate 007 - T. 25 N., R. 3 E., Puget Sound, Elliott Bay, Magnolia Bluff. Electronic document, http://www.historicmapworks.com/Map/US/1610876/Plate+007+++T++25+N+++R++3+E+++Puget+Sound++Elliott+Bay++Magnolia+Bluff/King+County+1926/Washington/, accessed March 31, 2017.

Larson, Lynn L., and Dennis E. Lewarch (editors)
1995 *The Archaeology of West Point, Seattle, Washington: 4,000 Years of Hunter-Fisher-Gatherer Land Use in Southern Puget Sound*. Larson Anthropological Archaeological Services, Gig Harbor, Washington.

Major, Maurice
2010 State of Washington Archaeological Site Inventory Form, 45KI1000. On file at DAHP, Olympia.

McKee, Bates
1972 *Cascadia: The Geologic Evolution of the Pacific Northwest.* McGraw Hill Book Company, New York.

Metsker Maps (Metsker)
1936 Township 25 N., Range 3 E., Seattle - Northwest, Fort Lawton, Interbay, Ballard. In *Atlas of King County 1936*. Electronic document,

http://www.historicmapworks.com/Map/US/1260049/Township+25+N+++Range+3+E+++Seattle+++Northwest++Fort+Lawton++Interbay++Ballard/King+County+1936/Washington/, accessed March 31, 2017.

Minard J. P., and D. B. Booth
1988 Geologic map of the Redmond quadrangle, King County, Washington 1:24,000. U. S. Geological Survey.

Morgan, Vera (editor)
1999 *The SR-101 Sequim Bypass Archaeological Project: Mid- to Late-Holocene Occupations on the Northern Olympic Peninsula, Clallam County, Washington*. Prepared for Washington State Department of Transportation. Eastern Washington University Reports in Archaeology and History 100-108. Archaeological and Historical Services, Easter Washington University, Cheney.

Morgan, Vera, Glenn Hartmann, Susan Axton, and Craig Holstine
1999 Cultural Context. In *The SR-101 Sequim Bypass Archaeological Project: Mid- to Late-Holocene Occupations on the Northern Olympic Peninsula, Clallam County, Washington*, edited by V. E. Morgan, pp. 3.1-3.36. Prepared for Washington Department of Transportation. Eastern Washington University Reports in Archaeology and History 100-108, Archaeology and Historical Services, Cheney.

National Park Service (NPS)
2002 How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15. U.S. Department of the Interior, National Park Service, Washington, D.C. Electronic resource, http://www.nps.gov/history/nr/publications/ bulletins/nrb15/, March 31, 2017.

Nationwide Environmental Title Research, LLC (NETR)
2017 Historic Aerials. Electronic Resource, http://www.historicaerials.com/?javascript, accessed March 31, 2017.

Nelson, Charles M.
1990 Prehistory of the Puget Sound Region. In *Handbook of North American Indians, Volume 7: Northwest Coast*, edited by Wayne Suttles, pp. 481-484. Smithsonian Institution Press, Washington, D.C.

Oldham, Kit
2012 Seattle's Fishermen's Terminal is dedicated on January 10, 1914. Electronic resource, http://www.historylink.org/File/10020, accessed April 10, 2017.

Parvey, Michele
2004 Cultural resources Investigations for the Ship Canal Trail Extension Project, Seattle, Washington. NWAA. Submitted to Seattle Department of Transportation.

Perrin, Natalie K., Heather Lee Miller, and Lynn Compas
2010 Cultural Resources Assessment of the Proposed Burke-Gilman Trail Extension Project, Segment 4, Seattle, King County, Washington. HRA. Submitted to SVR Design Company.

Pinnacle GeoSciences
2009 Historical Report Soil and Ground Water Conditions Fishermen's Terminal Port of Seattle, Washington. Pinnacle GeoSciences. Submitted to the Port of Seattle.

Piper, Jessie
2008 RE: Cultural Resources Assessment for 5425 Shilshole Ave. NW (Ballard Hotel), Seattle, King County, Washington. NWAA. Submitted to Ballard Hotel, LLC.

Piper, Jessie, and Cyrena Undem
2010 Cultural Resources Investigations for the Fremont Siphon Project, Seattle, King County. Washington. NWAA. Submitted to MWH Americas, Inc.

Porter, Stephen C. and Terry W. Swanson
1998 Radiocarbon Age Constraints on Rates of Advance and Retreat of the Puget Lobe of the Cordilleran Ice Sheet during the Last Glaciation. Quaternary Research 50:205-213.

Roedel, Kurt W., Leonard A. Forsman, Dennis E. Lewarch, and Lynn L. Larson
2004 Final Burke-Gilman Trail Extension Archaeological Resources and Traditional Cultural Places Assessment. City of Seattle. King County. Washington. LAAS. Submitted to City of Seattle.

Ruby, Robert H., and John A. Brown
1992 *A Guide to Indian Tribes of the Pacific Northwest*. University of Oklahoma Press, Norman.

Shell Oil Company
1956 Shell Street Map of Seattle. Shell Oil Company. Electronic document, http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~212302~5500344:Shell-Street-Map-of-Seattle-?showTipAdvancedSearch=false&showShareIIIFLink=true&showTip=false&helpUrl=http%3A%2F%2Fdoc.lunaimaging.com%2Fdisplay%2FV72D%2FLUNA%2BViewer%23LUNAViewer-LUNAViewer&title=Search+Results%3A+List_No+equal+to+%275840.167%27&fullTextSearchChecked=&advancedSearchUrl=http%3A%2F%2Fdoc.lunaimaging.com%2Fdisplay%2FV72D%2FSearching%23Searching-Searching&thumbnailViewUrlKey=link.view.search.url, accessed March 31, 2017.

Smith, Marian W.
1940 *The Puyallup-Nisqually*. Columbia University Press, New York.
1941 The Coast Salish of Puget Sound. *American Anthropologist* 43:197-211.

Spier, Leslie
1936 Tribal Distribution in Washington. *General Series in Anthropology,* Number 3. George Banta Publishing Company, Menasha, Wisconsin.

Stevenson, Alexander
2016 State of Washington Archaeological Site Inventory Form, 45KI1298. On file at DAHP, Olympia.

Suttles, Wayne, and Barbara Lane
1990 Southern Coast Salish. In Handbook of North American Indians, Volume 7: Northwest Coast, edited by Wayne Suttles, pp. 485-502. Smithsonian Institution Press, Washington, D.C.

The Johnson Partnership
2008 Historic and Cultural Resources Report 508/510, 520/522, 528/530, & 607/609 W Etruria Street, Seattle, WA. The Johnson Partnership. Submitted to West Etruria Street Duplexes.

Thompson, Gail
2008 Cultural Resources Assessment of the Nordic Heritage Museum Project Site, City of Seattle. King County, Washington. HRA. Submitted to The Nordic Heritage Museum.

Thorson, R. M.
1980 Ice-Sheet Glaciation of the Puget lowland, Washington, during the Vashon Stade (late Pleistocene). *Quaternary Research* (13) 3:303-321.
1981 Isostatic Effects of the Last Glaciation in the Puget Lowland, Washington. U.S. Geological Survey, Open-File Report 81-370, Washington, D.C.
1989 Glacio-isostatic Response of the Puget Sound Area, Washington. Department of Geology and Geophysics, University of Connecticut.

Troost, Kathy Goetz, and Derek E. Booth
2008 Geology of Seattle and the Seattle area, Washington. Electronic resource, http://reg.gsapubs.org/content/20/1.abstract, accessed April 15, 2017.

Troost, Kathy Goetz, Derek B. Booth, Aaron P. Wisher, and Scott A. Shimel
2005 The Geologic Map of Seattle—A Progress Report. Electronic document, https://pubs.usgs.gov/of/2005/1252/, accessed April 15, 2017.

Trudel, Stephanie
2005 RE: Burke-Gilman Trail Extension Project Archaeological Resources Monitoring. LAAS. Submitted to Seattle Department of Transportation.

United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS)
2017 Web Soil Survey, Washington. Electronic resource, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, accessed March 31, 2017.

United States Department of the Interior Bureau of Land Management (BLM)
2017 General Land Office Records Search. Electronic resource, http://www.glorecords.blm.gov/details/patent/default.aspx?accession=WAORAA%2000 4720&docClass=SER&sid=uk1behxw.4mk, accessed March 31, 2017.

United States Surveyor General (USSG)
1855 General Land Office Map, Township 25 N., Range 03 E, Willamette Meridian. Electronic resource, https://www.blm.gov/or/landrecords/survey/yPlatView1_2.php?path=PWA&name=t250 n030e_001.jpg, accessed April 5, 2017.
1863 General Land Office Map, Township 25 N., Range 03 E, Willamette Meridian. Electronic resource, https://www.blm.gov/or/landrecords/survey/yPlatView1_2.php?path=PWA&name=t250 n030e_002.jpg, accessed April 5, 2017.

University of Washington
1950 Archaeological Field Forms Site Survey Form, 45KI1. On file at DAHP, Olympia.

Waitt, Richard B., Jr., and Robert M. Thorson
1983 The Cordilleran Ice Sheet in Washington, Idaho, and Montana. In *Late-Quaternary Environments of the United States*, edited by S. C. Porter, pp. 53–70. University of Minnesota, Minneapolis, Minnesota.

Wandrey. Margaret
1975 *Four Bridges to Seattle Old Ballard*. Ballard Printing and Publishing, Seattle.

Washington State Department of Archaeology and Historic Preservation (DAHP)
2017a Washington State Standards for Cultural Resources Reporting 2017. On file at DAHP, Olympia.
2017b Washington Information System for Architectural and Archaeological Records Data (WISAARD) database. Electronic resource, https://secureaccess.wa.gov/dahp/wisaard/, accessed March 31, 2017.

Washington State Department of Natural Resources (WA DNR)
2017 Washington Interactive Geologic Map. Division of Geology and Earth Resources – Washington's Geological Survey. Electronic resource, https://fortress.wa.gov/dnr/geology/, accessed March 31, 2017.

Waterman, T. T.
ca.1920 Puget Sound Geography. Unpublished manuscript, Allen Library, University of Washington, Seattle.
1922 The Geographic Names Used by the Indians of the Pacific Coast. *Geographical Review* 12:175-194.
2001 *sda?da? gweł dibeł lešucid ?acaciłtalbixw Puget Sound Geography*. Vi Hilbert, Jay Miller, and Zalmai Zahir, contributing editors. Lushootseed Press, Federal Way, Washington.

Wilke, Steve and Karen James
1984 An Archaeological Evaluation of the Fort Lawton Historic District, Seattle GeoRecon International, Seattle Submitted to the City of Seattle, Department of Parks and Recreation.

Williams, David B.
2017 Lake Washington Ship Canal (Seattle). Electronic resource, http://historylink.org/File/1444, accessed April 10, 2017.

Wilma, David
2001 Seattle Neighborhoods: Interbay — Thumbnail History. Electronic resource, http://historylink.org/File/3418, accessed April 10, 2017.

8.0 Figures and Tables

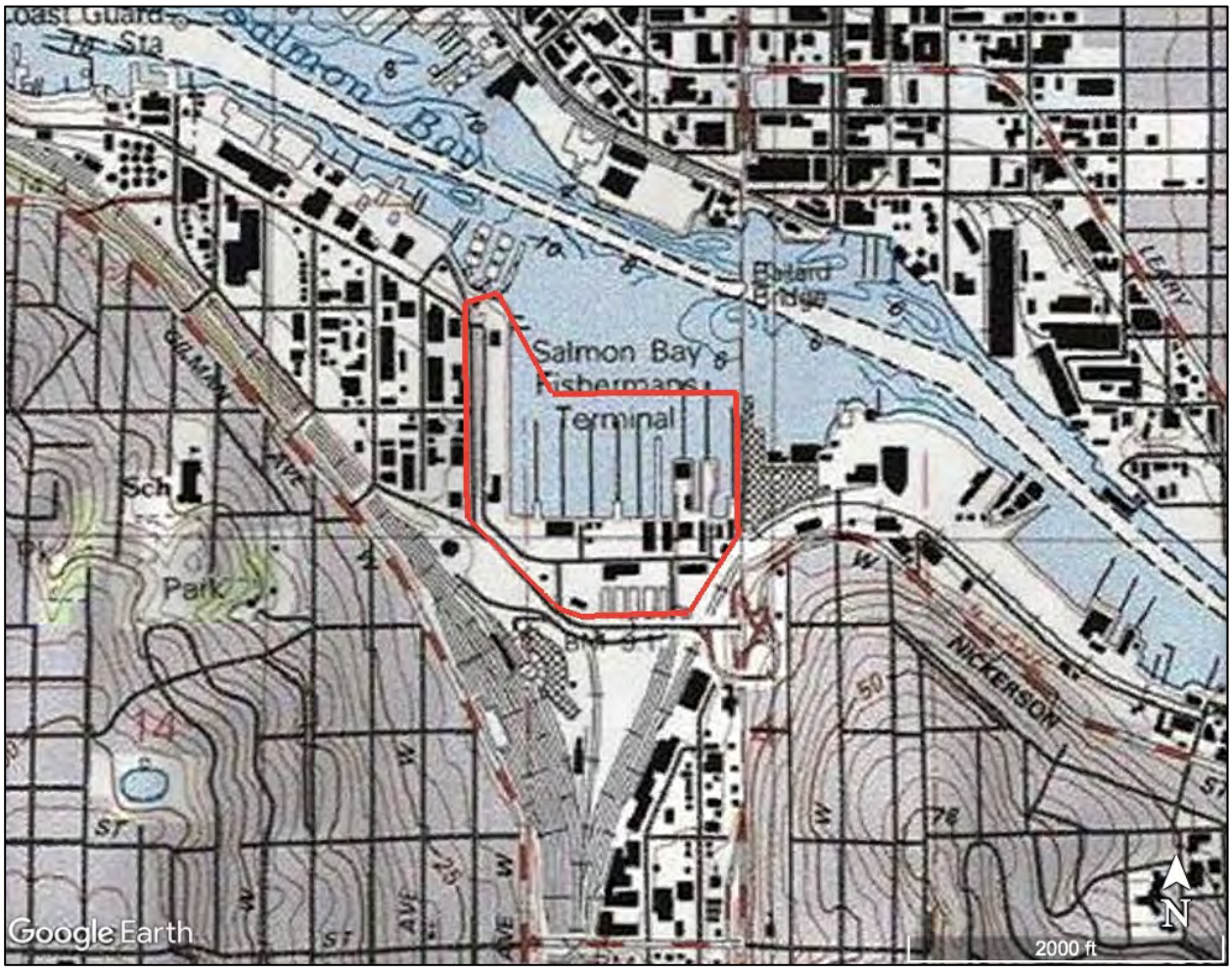


Figure 1. USGS Seattle North, WA (1983) 7.5-minute quadrangle annotated with the location of the Fishermen's Terminal in red and the proposed work locations in orange.

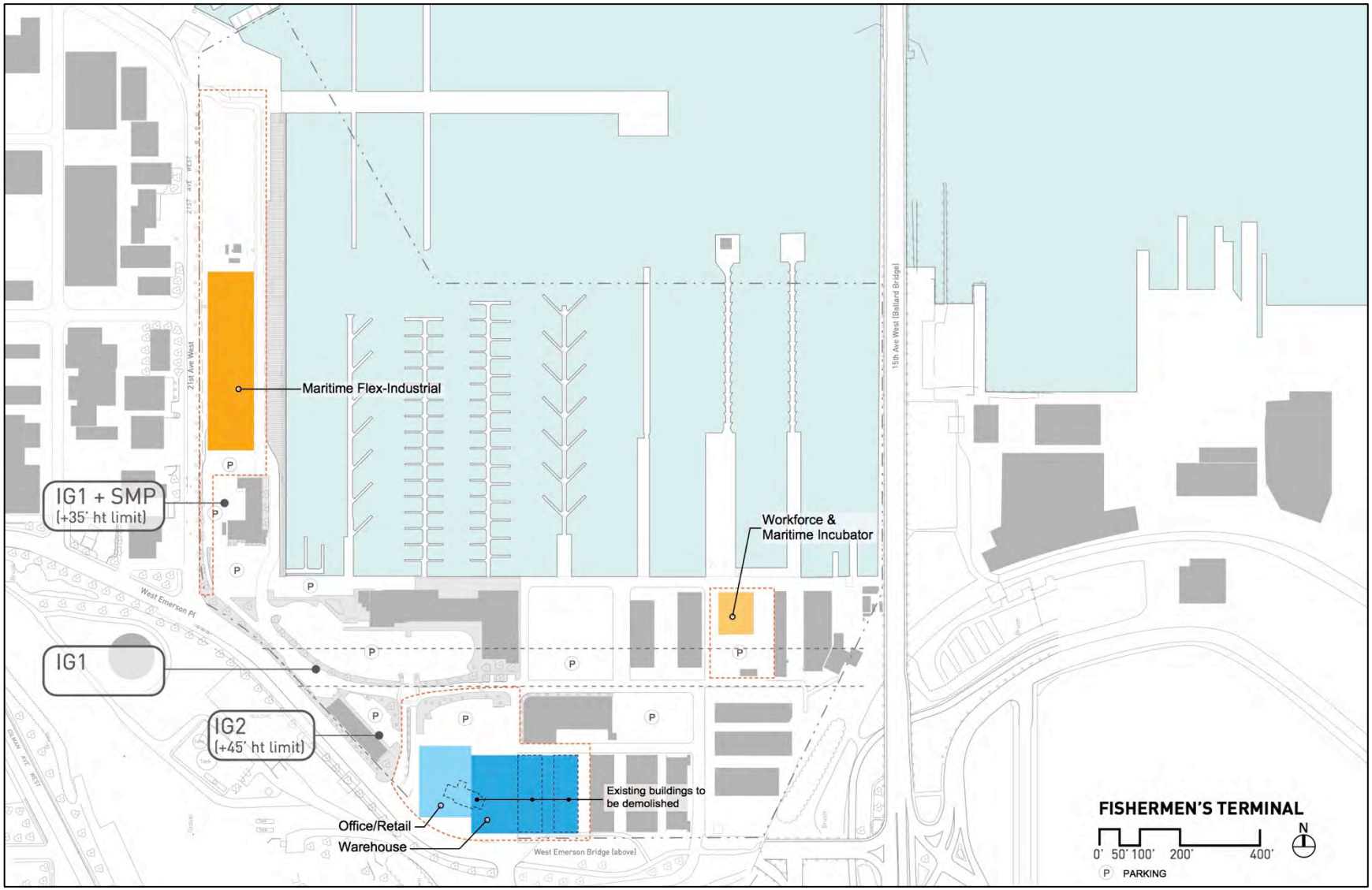


Figure 2. Overview of the Fishermen's Terminal Phase 1 Development; provided by the Port of Seattle. Proposed disturbance is outlined by the dashed red polygons.

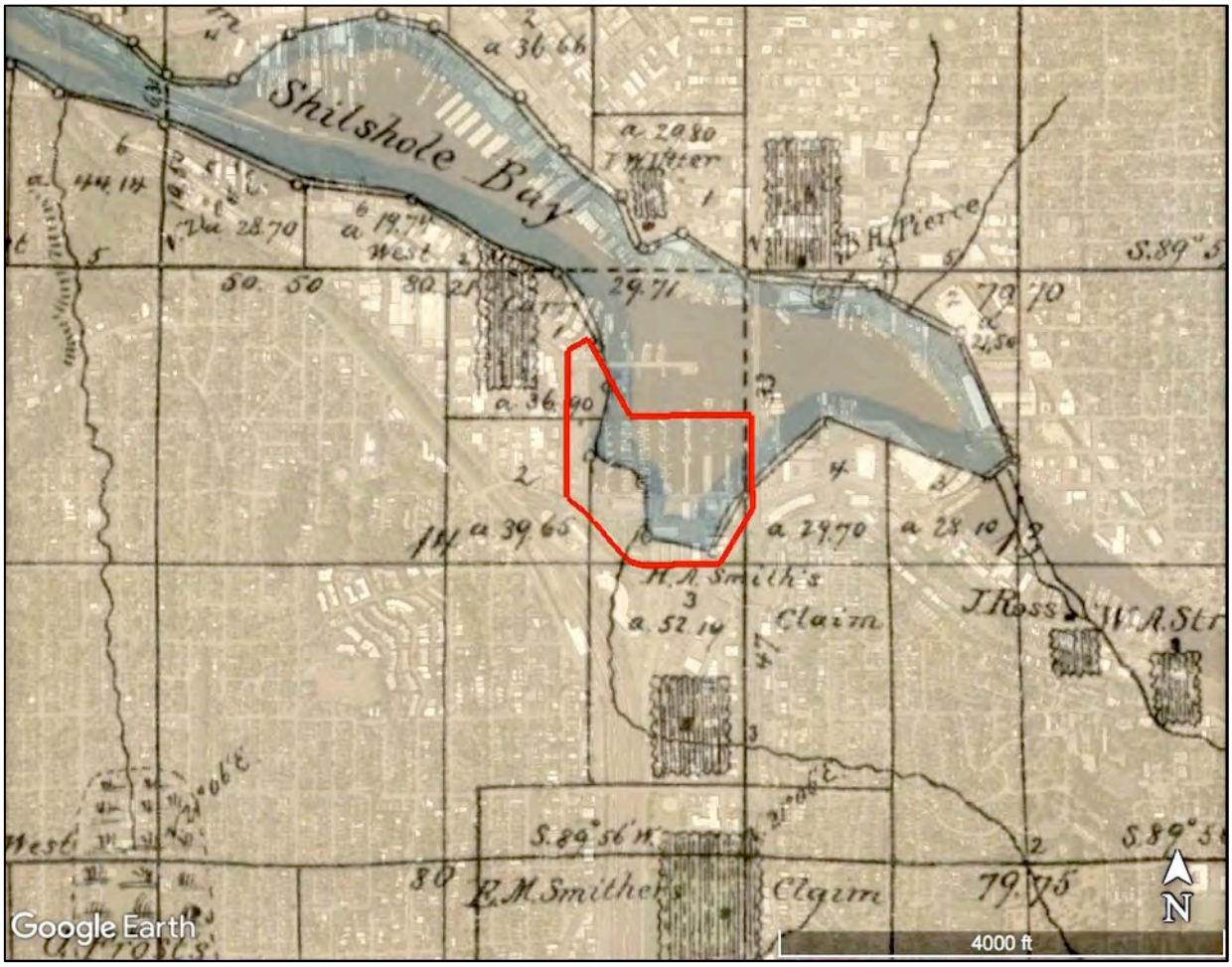


Figure 3. USSG (1855) map overlaid on 2017 satellite imagery and annotated with the Fishermen's Terminal in red (base map: Google Earth).

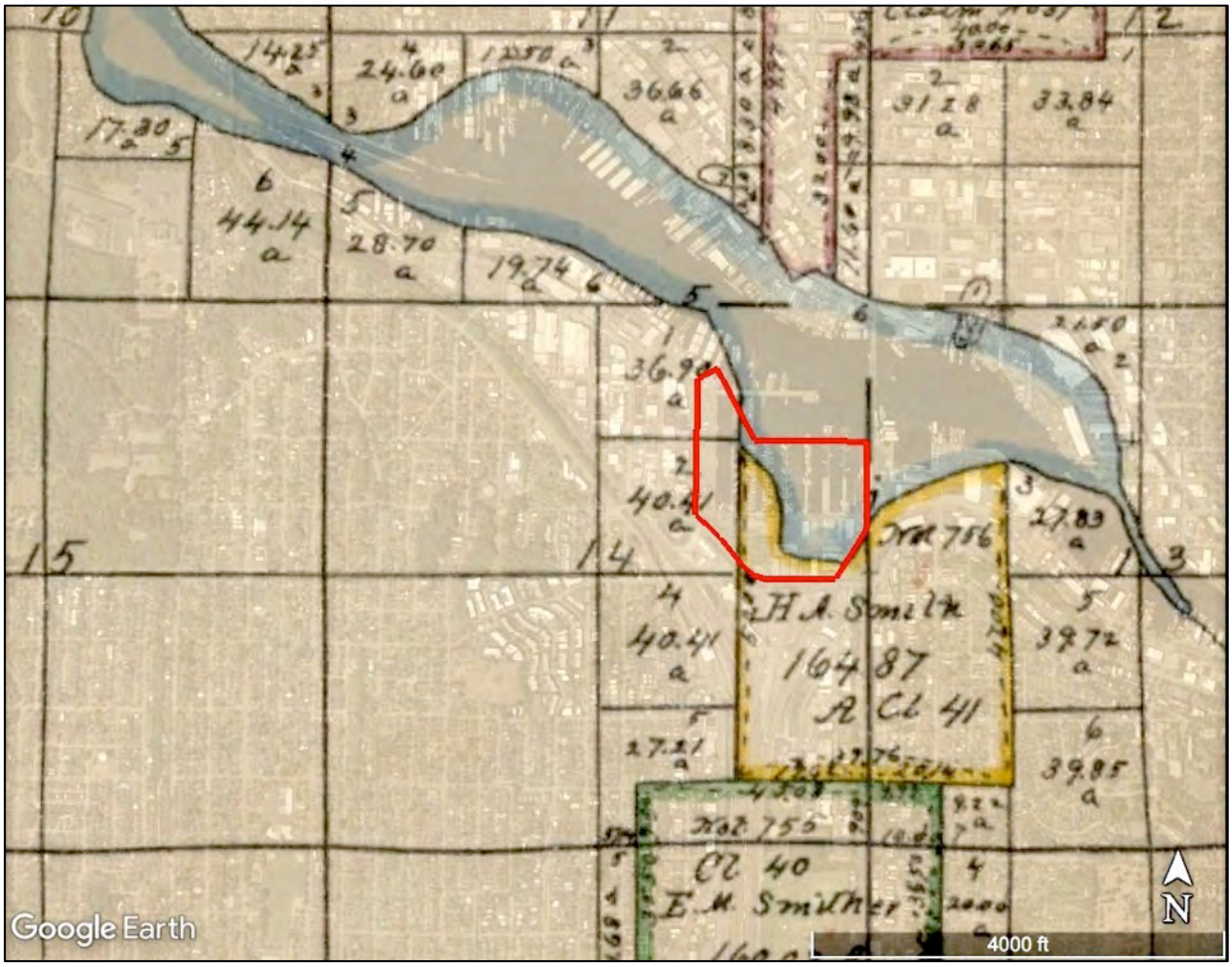


Figure 4. USSG (1863) map overlaid on 2017 satellite imagery and annotated with the Fishermen's Terminal in red (base map: Google Earth).

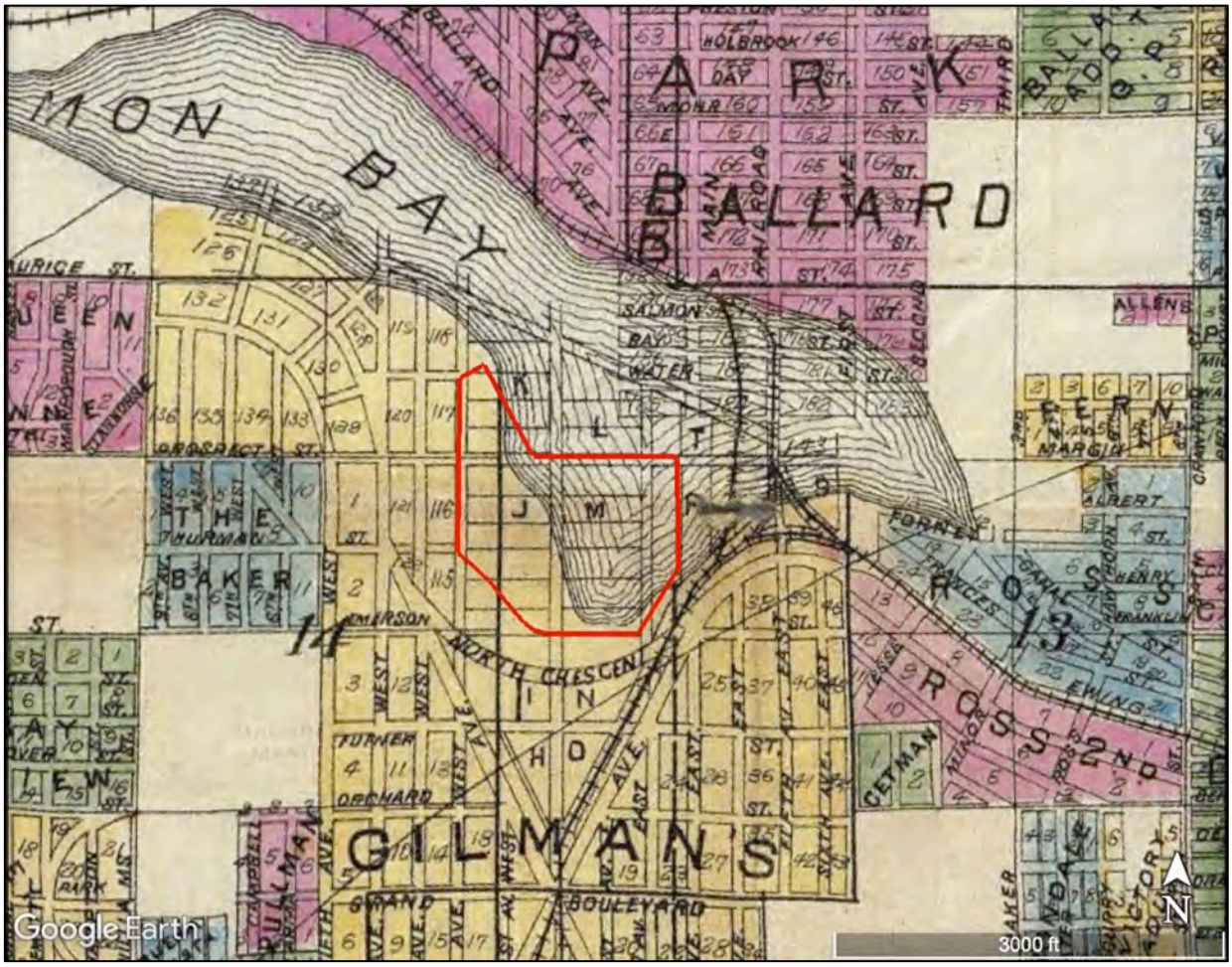


Figure 5. Anderson (1890) map with the Fishermen's Terminal annotated in red and depicting proposed development and modified shoreline of Salmon Bay.

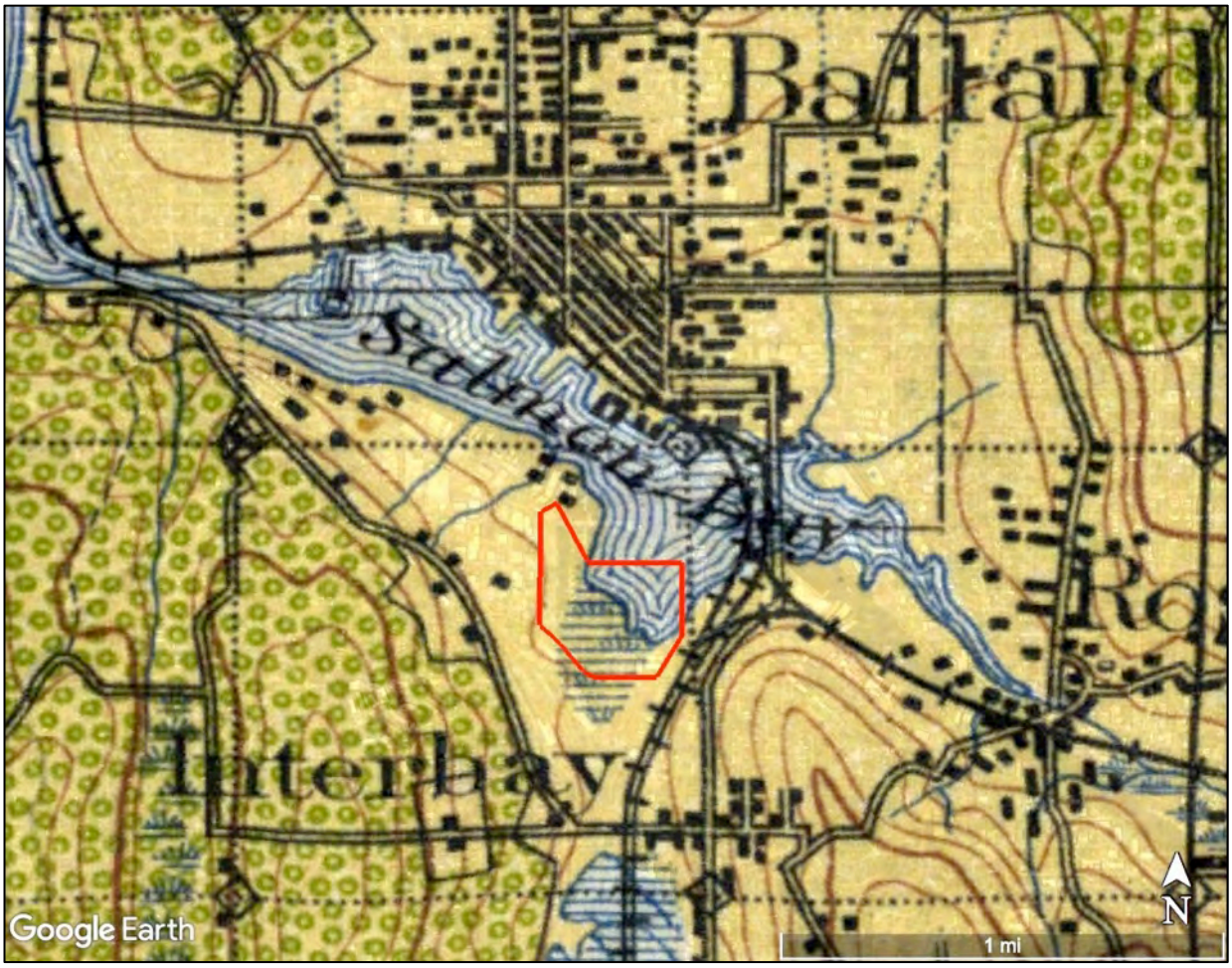


Figure 6. USGS (1897) land classification sheet annotated with the Fishermen's Terminal in red. This location is located within land labeled as "Cut areas not restocking" and a salt marsh.

Figure 7. USCGS (1899) map annotated with the Fishermen's Terminal in red.

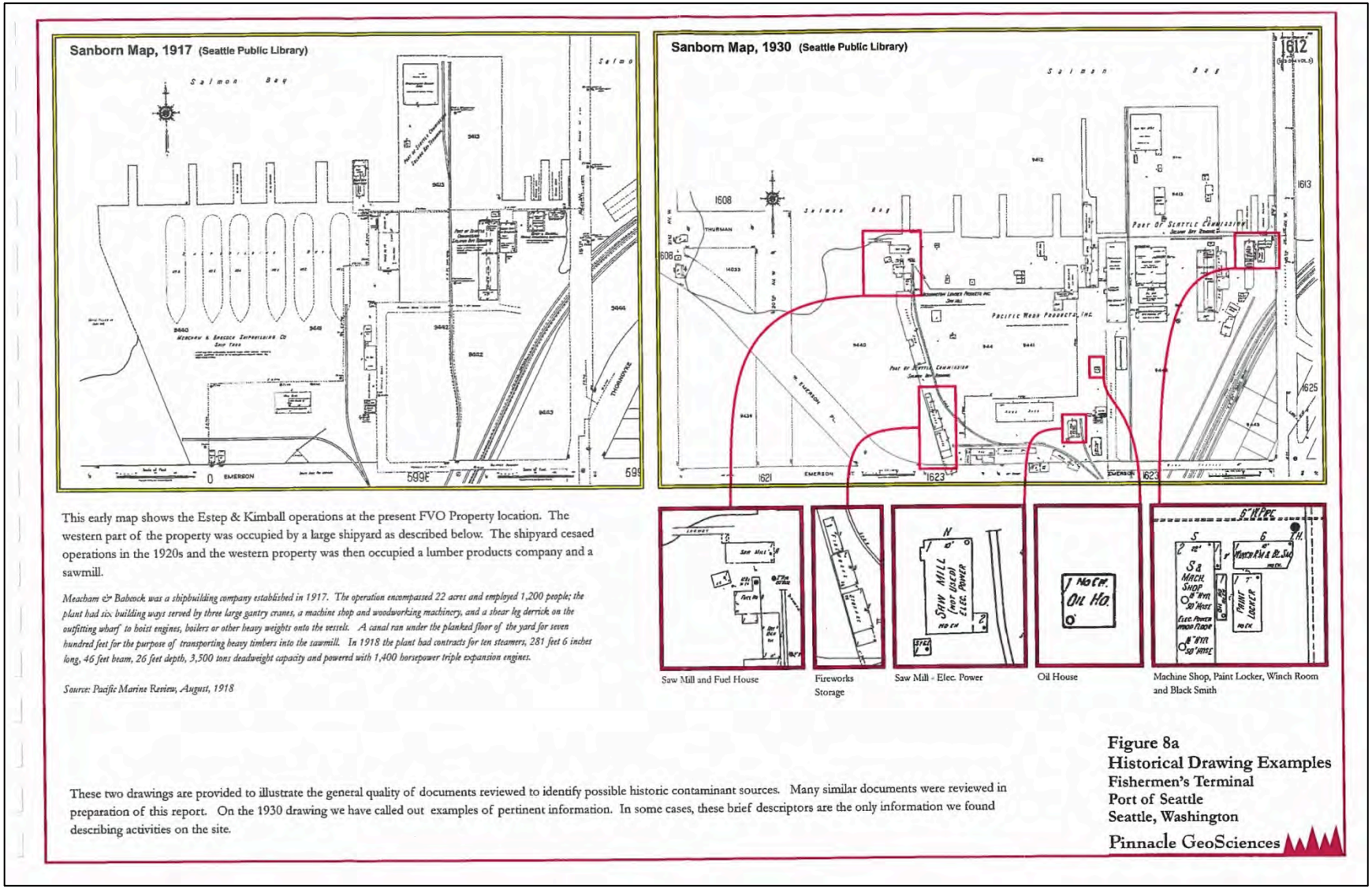


Figure 8. Overview of the Sanborn 1917 and 1930 Maps depicting the southern portion of the Fishermen's Terminal (Pinnacle GeoSciences 2009:Figure 8a).

Figure 9. Shell Oil Company (1956) map overlaid on 2017 satellite imagery and annotated with the Fishermen's Terminal in red (base map: Google Earth).

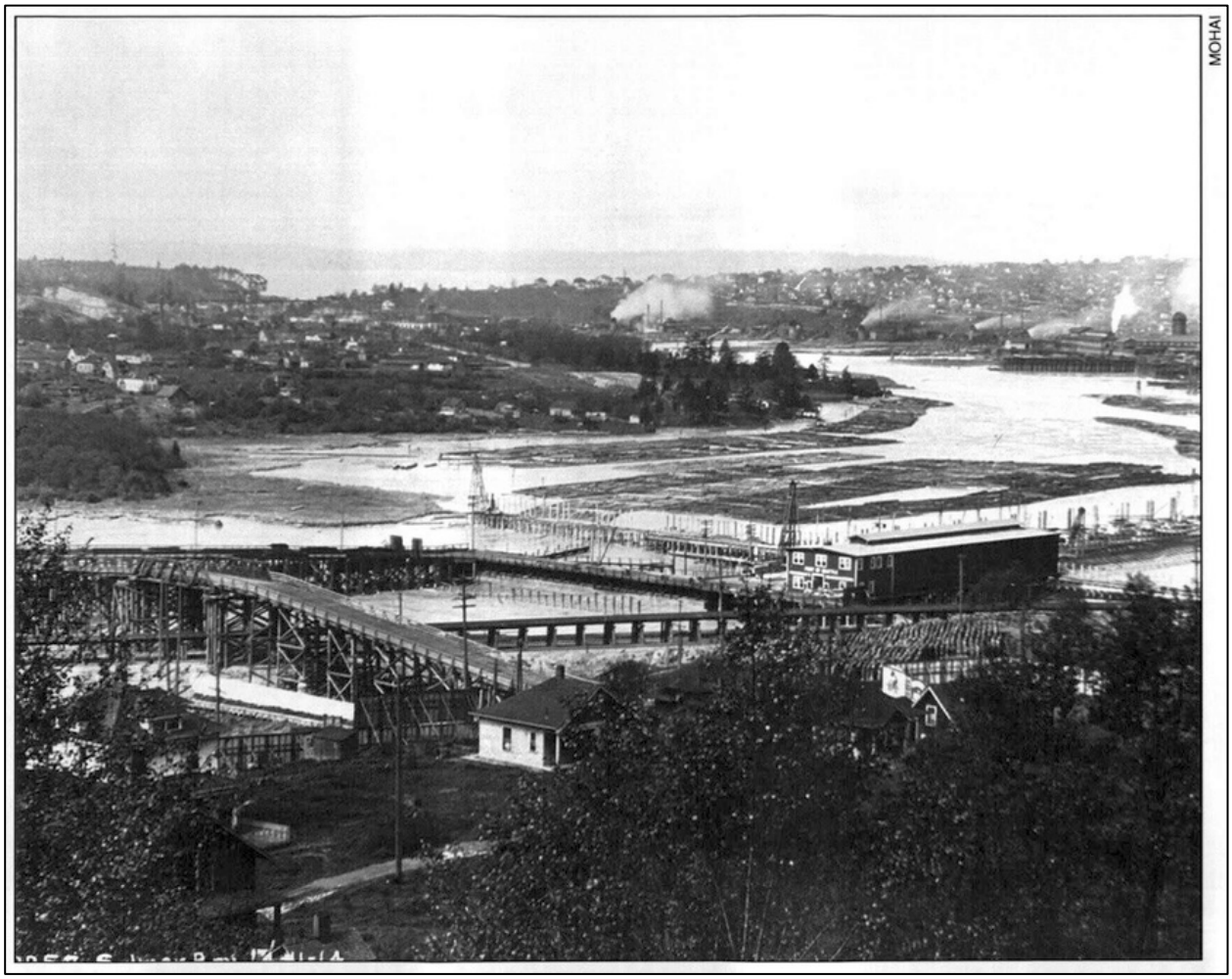


Figure 10. Historic photograph of the Fishermen's Terminal taken April 11, 1914; view is to the northwest (photograph courtesy of the Museum of History and Industry).

Figure 11. Historic photograph of the Fishermen's Terminal taken June 23, 1915; view is to the north (photograph courtesy of the City of Seattle Municipal Archive).

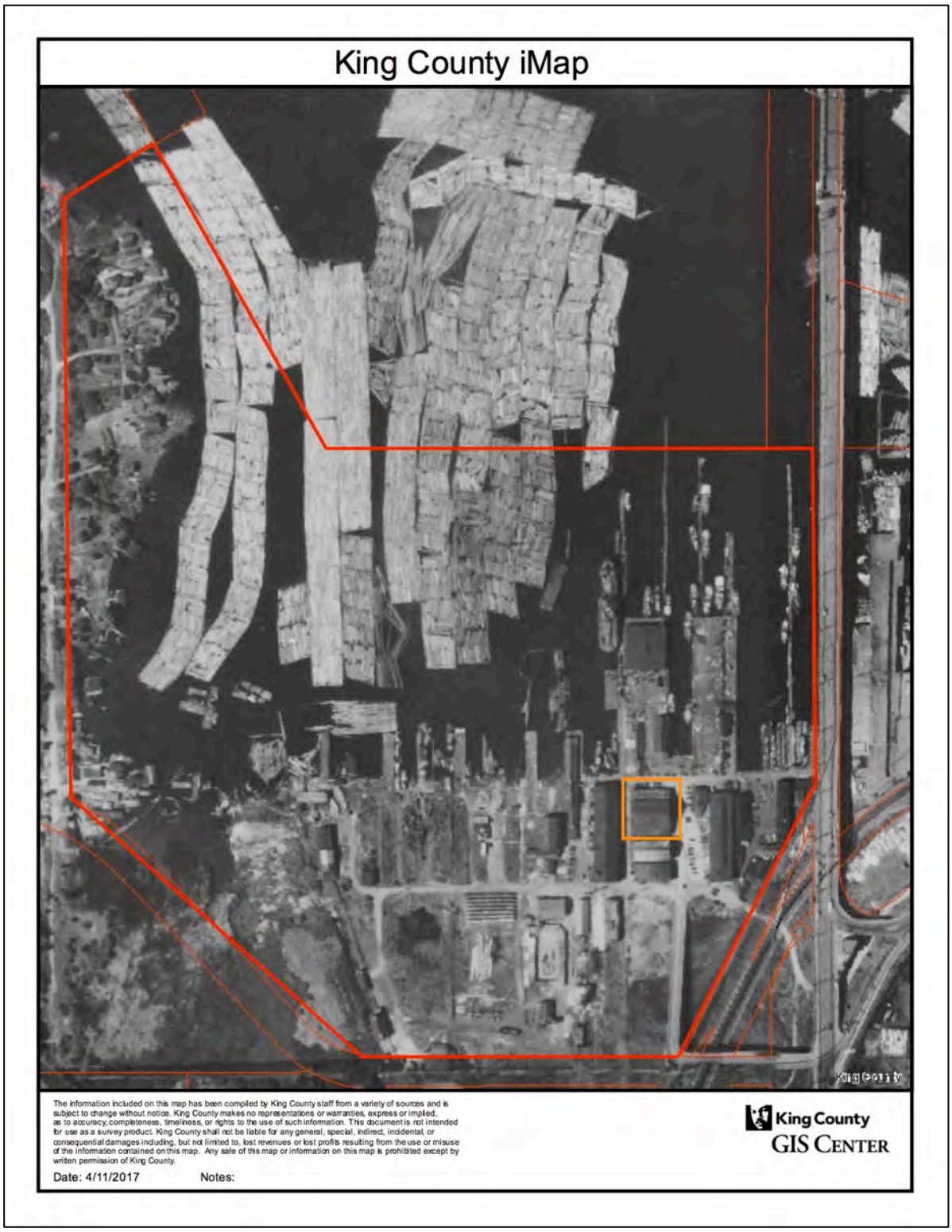


Figure 12. Historic aerial imagery from 1936 annotated with the Fishermen's Terminal in red and the extant Seattle Ship Supply building in orange (base map: King County iMap).

Figure 13. Historic photograph of the Fishermen's Terminal taken ca. 1955; view is to the south (photograph courtesy of PSMHS).

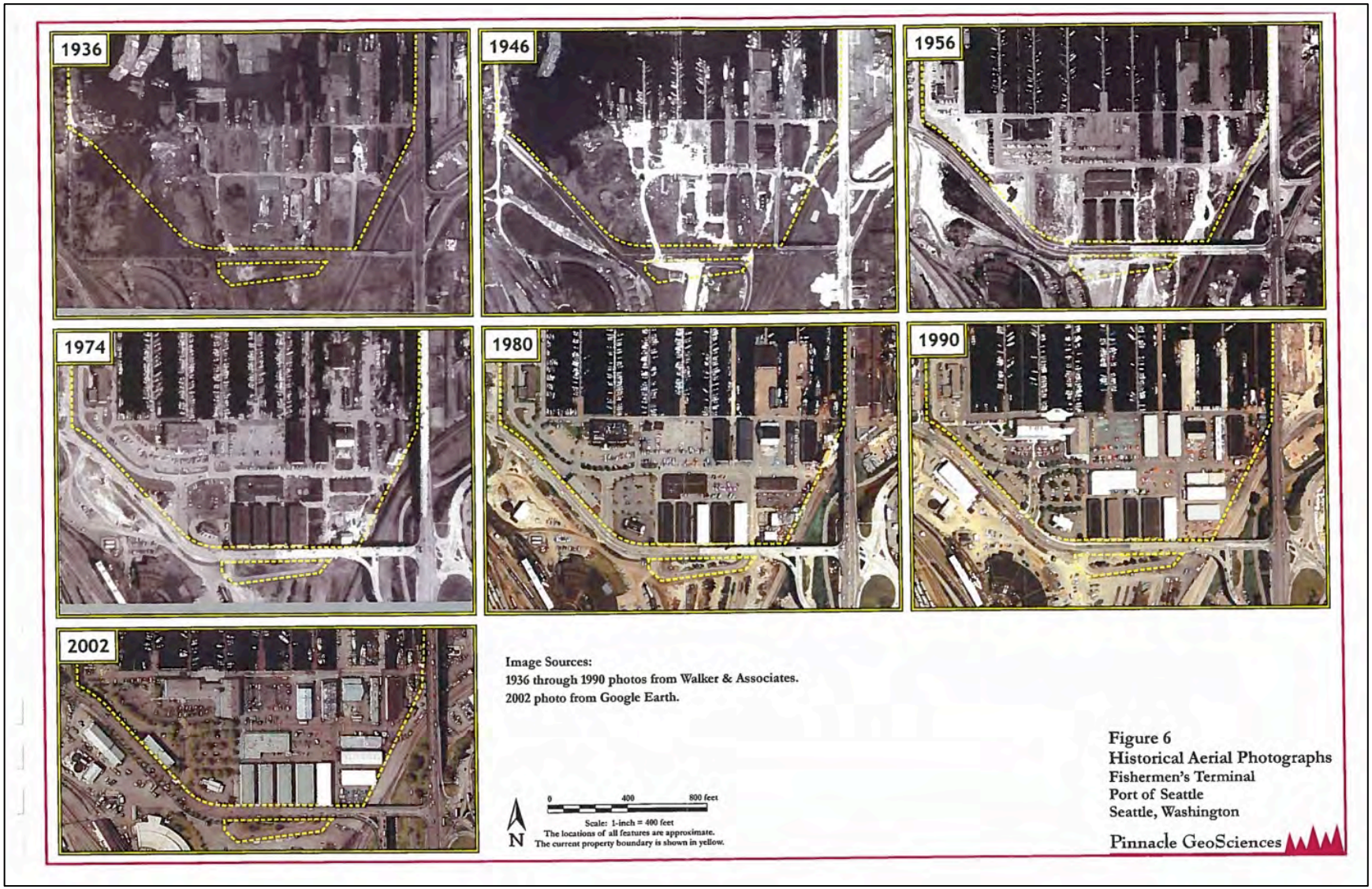


Figure 14. Overview of changes within the southern portion of the Fishermen's Terminal as seen in aerial imagery (Pinnacle GeoSciences 2009:Figure 6).

Table 1. Historic structures previously recorded within the Fishermen's Terminal parcel.

Address (Seattle, WA)	DAHP Property Number	Historic or Common Name	Built Date	Historic Use	Surveyor Opinion	SHPO Determination	Potential Project Effects
2000 W Emerson Pl	Property ID: 209031	--	1920	Commerce/Trade	Recommended not eligible	Inventory – no determination made	None
2000 W Emerson Pl	Property ID: 159028/ Property ID: 209030	--	1943	Commerce/Trade	Recommended potentially eligible	Inventory – no determination made	None
1735 W Thurman St,	Property ID: 44576	Fishermen's Terminal-South Bulkhead Wall	1914	Maritime	--	Determined not eligible	None
2000 W Emerson Pl	Property ID: 126618	Seattle Ship Supply	1918	Commerce/Trade	Recommended not eligible	Inventory – no determination made	Potential Impacts
1800 W Emerson Pl	Property ID: 43296	Castle and Cooke Building	1975	Retail	--	Inventory – no determination made	None

Figure 15. Overview of the West Wall building 1 location; view is to the northwest.

Figure 16. Overview of the Seattle Ship Supply building, main entrance; view is to the southwest.

Figure 17. Overview of net shed (N-8); view is to the southwest.

Figure 18. Overview of net shed (N-7); view is to the southeast.

Figure 19. Overview of the bank (C-12) building, main entrance; view is to the northeast.

Attachment A. Correspondence between CRC and area Tribes.

Cultural Resource Consultants

March 31, 2017

Duwamish Tribe
Cecile Hansen, Chairwoman
4705 W Marginal Way SW
Seattle, WA 98106-1514

Re: Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fisherman's Terminal Project, Seattle, King County, WA

Dear Cecile:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Section 14, Township 35 North, Range 03 East Willamette Meridian at 2000 W Emerson Pl in Seattle. The Port of Seattle is in the planning design phase for the upland redevelopment of Fishermen's Terminal. Tasks on the SEPA checklist include: construction of an approx 80,000 sf warehouse, office, retail/showroom building near the entrance to Fishermen's Terminal, construction of an approx 50,000 sf light industrial flex building along the West Wall, demolition of the existing Bank of America building and two adjacent net shed buildings, demolition of the Seattle Ship Supply building and associated site preparation work for project elements.

We are in the process of reviewing available information. Background research will include a site files search at the Washington State Department of Archaeology and Historic Preservation, review of previously recorded cultural resource reports, and review of pertinent published literature and ethnographies. Results of our investigations will be presented in a technical memo.

We are aware that not all information is contained within published sources. Should the Tribe have additional information to support our assessment, we would very much like to include it in our study. Please contact me at sonja@crcwa.com or 360-395-8879 should you wish to provide any comments. I appreciate your assistance in this matter and look forward to hearing from you.

Sincerely,

Sonja Kassa
Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC., BALLARD LABS, 1416 NW 46TH ST, STE 105 PMB346, SEATTLE, WA 98107
PHONE 206.855.9020 - sonja@crcwa.com

Cultural Resource Consultants

March 31, 2017

Muckleshoot Indian Tribe
Laura Murphy, Archaeologist/Cultural Resources
39015 172nd Ave SE
Auburn, WA 98092

Re: Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fisherman's Terminal Project, Seattle, King County, WA

Dear Laura:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Section 14, Township 35 North, Range 03 East Willamette Meridian at 2000 W Emerson Pl in Seattle. The Port of Seattle is in the planning design phase for the upland redevelopment of Fishermen's Terminal. Tasks on the SEPA checklist include: construction of an approx 80,000 sf warehouse, office, retail/showroom building near the entrance to Fishermen's Terminal, construction of an approx 50,000 sf light industrial flex building along the West Wall, demolition of the existing Bank of America building and two adjacent net shed buildings, demolition of the Seattle Ship Supply building and associated site preparation work for project elements.

We are in the process of reviewing available information. Background research will include a site files search at the Washington State Department of Archaeology and Historic Preservation, review of previously recorded cultural resource reports, and review of pertinent published literature and ethnographies. Results of our investigations will be presented in a technical memo.

We are aware that not all information is contained within published sources. Should the Tribe have additional information to support our assessment, we would very much like to include it in our study. Please contact me at sonja@crcwa.com or 360-395-8879 should you wish to provide any comments. I appreciate your assistance in this matter and look forward to hearing from you.

Sincerely,

Sonja Kassa
Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC., BALLARD LABS, 1416 NW 46TH ST, STE 105 PMB346, SEATTLE, WA 98107
PHONE 206.855.9020 - sonja@crcwa.com

Cultural Resource Consultants

March 31, 2017

Suquamish Tribe
Stephanie Trudel
PO Box 498
Suquamish, WA 98392-0498

Re: Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fisherman's Terminal Project, Seattle, King County, WA

Dear Stephanie:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Section 14, Township 35 North, Range 03 East Willamette Meridian at 2000 W Emerson Pl in Seattle. The Port of Seattle is in the planning design phase for the upland redevelopment of Fishermen's Terminal. Tasks on the SEPA checklist include: construction of an approx 80,000 sf warehouse, office, retail/showroom building near the entrance to Fishermen's Terminal, construction of an approx 50,000 sf light industrial flex building along the West Wall, demolition of the existing Bank of America building and two adjacent net shed buildings, demolition of the Seattle Ship Supply building and associated site preparation work for project elements.

We are in the process of reviewing available information. Background research will include a site files search at the Washington State Department of Archaeology and Historic Preservation, review of previously recorded cultural resource reports, and review of pertinent published literature and ethnographies. Results of our investigations will be presented in a technical memo.

We are aware that not all information is contained within published sources. Should the Tribe have additional information to support our assessment, we would very much like to include it in our study. Please contact me at sonja@crcwa.com or 360-395-8879 should you wish to provide any comments. I appreciate your assistance in this matter and look forward to hearing from you.

Sincerely,

Sonja Kassa
Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC., BALLARD LABS, 1416 NW 46TH ST, STE 105 PMB346, SEATTLE, WA 98107
PHONE 206.855.9020 - sonja@crcwa.com

Tribal Historic Preservation Officer
Fisheries Department
360/394-8529
Fax 360/598-4666
THE SUQUAMISH TRIBE
P.O. Box 498 Suquamish, Washington 98392

April 4, 2017

Ms. Sonja Kassa
Cultural Resource Consultants
Ballard Labs, 1416 NW 46th St, STE 105 PMB 346
Seattle, WA 98107

RE: Fisherman's Terminal Project, Seattle, King County, Washington
Request for Traditional Cultural Property Information
Suquamish Tribe Reference: 17-4-4-5

Dear Sonja:

Thank you for consulting with the Suquamish Tribe regarding CRC's cultural resources assessment for the Fisherman's Terminal Project in Seattle. The Tribe does not have any specific concerns or statements about the proposed project at this time. Please contact me at 360-394-8533 or via e-mail at strudel@suquamish.nsn.us as additional project information becomes available.

Sincerely,

Stephanie E Trudel

Stephanie E. Trudel
Archaeologist

Cc: Gretchen Kaehler, Local Government Archaeologist, Washington State Department of Archaeology and Historic Preservation

Cultural Resource Consultants

March 31, 2017

Tulalip Tribes
Richard Young
6410 23rd Ave NE
Tulalip, WA 98271

Re: Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fisherman's Terminal Project, Seattle, King County, WA

Dear Richard:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Section 14, Township 35 North, Range 03 East Willamette Meridian at 2000 W Emerson Pl in Seattle. The Port of Seattle is in the planning design phase for the upland redevelopment of Fishermen's Terminal. Tasks on the SEPA checklist include: construction of an approx 80,000 sf warehouse, office, retail/showroom building near the entrance to Fishermen's Terminal, construction of an approx 50,000 sf light industrial flex building along the West Wall, demolition of the existing Bank of America building and two adjacent net shed buildings, demolition of the Seattle Ship Supply building and associated site preparation work for project elements.

We are in the process of reviewing available information. Background research will include a site files search at the Washington State Department of Archaeology and Historic Preservation, review of previously recorded cultural resource reports, and review of pertinent published literature and ethnographies. Results of our investigations will be presented in a technical memo.

We are aware that not all information is contained within published sources. Should the Tribe have additional information to support our assessment, we would very much like to include it in our study. Please contact me at sonja@crcwa.com or 360-395-8879 should you wish to provide any comments. I appreciate your assistance in this matter and look forward to hearing from you.

Sincerely,

Sonja Kassa
Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC., BALLARD LABS, 1416 NW 46TH ST, STE 105 PMB346, SEATTLE, WA 98107
PHONE 206.855.9020 - sonja@crcwa.com

Attachment B. Historic Property Inventory Forms.

See associated PDFs.

Historic Property Report

Resource Name: Net Shed (N-7)

Property ID: 709702

Location

Address: 2000 W Emerson Pl, Seattle, Washington, 98119, USA

Geographic Areas: King Certified Local Government, Seattle Certified Local Government, King County, T25R03E14, SHILSHOLE BAY Quadrangle

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa
Built Date	1943	☐

Historic Use:

Category	Subcategory
Commerce/Trade	Commerce/Trade - Warehouse

Historic Context:

Category

Architect/Engineer:

Category	Name or Company

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

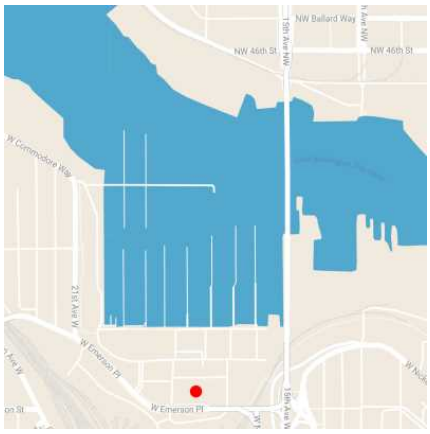
Project History

Historic Property Report

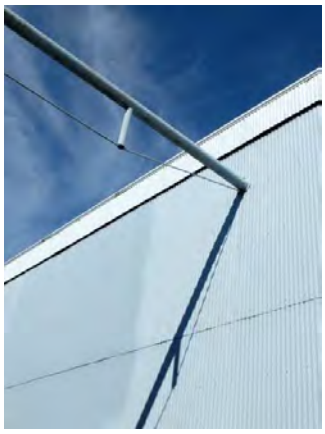
Resource Name: Net Shed (N-7) Property ID: 709702

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
2017-04-02572, , Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Project, Seattle, King County, Washington	4/10/2017		

Photos



Locator Map

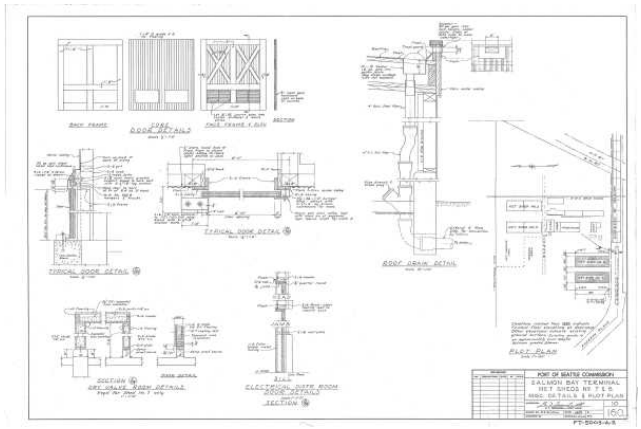


Connector between Net Shed 7 & 8

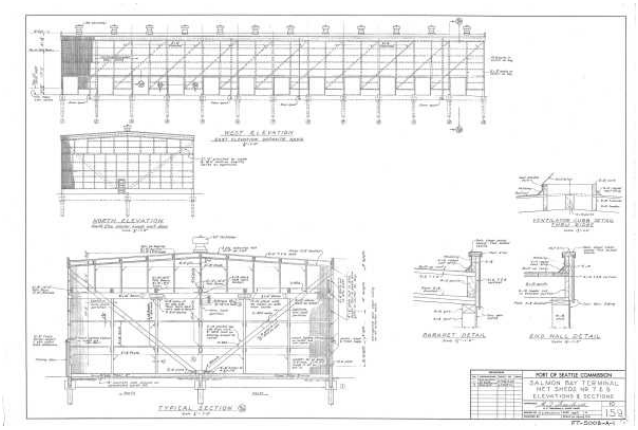
South West Elevation

Typical Net Shed 7 and 8 Door

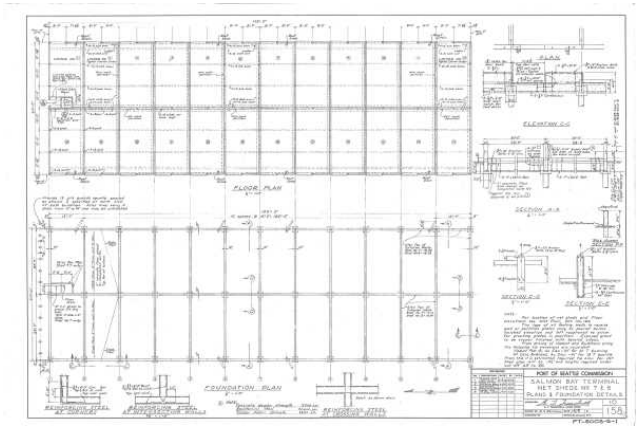
South Elevation



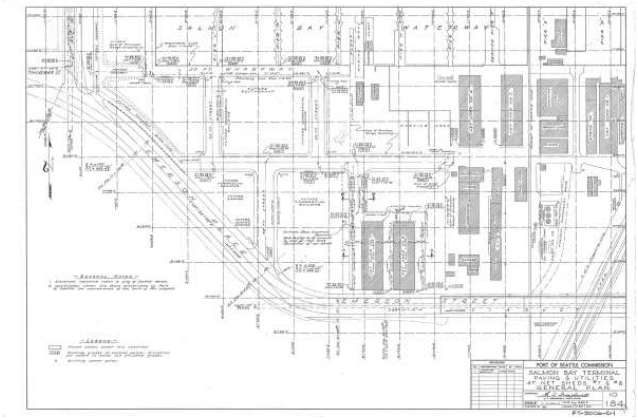
Structure Details and Plot Plan



Structure Sections and Elevations



Foundation and First Floor Plan



Fishermens Site Plan

Interior Ladder

Interior Diagonal Brace

Interior Structure and Ladder

Interior Structure

Exterior Northeast Corner

Historic Property Report

Resource Name: Net Shed (N-7) Property ID: 709702

Inventory Details - 4/10/2017

Common name: Net Shed (N-7)

Date recorded: 4/10/2017

Field Recorder: James McNett

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Foundation	Concrete - Poured
Form Type	Utilitarian
Roof Type	Flat with Parapet
Roof Material	Asphalt/Composition - Built Up
Cladding	Metal - Corrugated
Structural System	Wood - Post and Beam
Plan	Rectangle

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: No

Property is located in a potential historic district (National and/or local): No

Property potentially contributes to a historic district (National and/or local): No

Significance narrative: HISTORIC CONTEXT

In 1911, the Port of Seattle was created and a development proposal was set forth for the southern shore of Salmon Bay. In May of 1912 the Port set aside 55.4 acres of land on the southern shore of the bay (Johnson n.d.) and the Port began construction of the Fishermen's Terminal in the following year (Oldham 2012). In December 1913, King County voters approved the diversion of $175,000 to be used toward the development of the terminal. The terminal was one of the Port's first projects encompassed under a comprehensive effort to improve Seattle's harbors. The terminal had been envisioned as a harbor for Seattle's fishing fleet as no homeport had previously existed. The Puget Sound Purse Seine Fishermen's Association lead by the fishing boat operators had been vying for a centralized public port with facilities needed to maintain their boats and equipment, an idea that was advocated for by Miller Freeman.

Construction of the terminal involved land building to make the tide flats useable (Johnson n.d.). Bulkheads were emplaced and dredge material from the construction of the Ship Canal was imported to build the land approximately 12 feet above the existing high tide line leaving the terminal four feet above the waterline after the Ship Canal locks were constructed (Oldham 2012). On January 10, 1914, the terminal housed Seattle's fishing fleet. The new terminal included 1,800 feet of moorage, accommodations for 100

boats, a large warehouse for nets and equipment, dry storage ways, and a marine railway. The opening of the terminal was marked by a boat parade through Salmon Bay comprised of ships from all over Puget Sound and even Alaska. The event was attended by Governor Ernest Lister, Seattle Mayor, former legislator, and future Port Commissioner George Cotterill, and Port Commission Chairman Hiram M. Chittenden. Original dedicated as The Port of Seattle Fishermen's Headquarters, it quickly became known as Fishermen's Terminal. Over the following decades, the Port expanded and improved the terminal through fill episodes to increase the usable land and available facilities. The terminal was the center of the regional fishing industry and generated thousands of jobs and millions of business revenue and taxes even in its more recent decline.

NATIONAL REGISTER ELIGIBILITY

Resources over 50 years old are typically defined as significant or potentially significant if they are identified as of special importance to an ethnic group or Indian tribe or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the NRHP (NPS, 2002). According to the NRHP guidelines, the "essential physical features" of a property must be intact for it to convey its significance, and the resource must retain its integrity, or "the ability of a property to convey its significance." The seven aspects of integrity are location, setting, design, materials, workmanship, feeling and association to convey its historical significance. Net Shed 7 has maintained its integrity to an unusual degree. It must then satisfy one or more of the following four criteria to be eligible for the NRHP:

Criterion A. Be associated with events that have made a significant contribution to the broad patterns of our history.
Criterion B. Be associated with the lives of persons significant to our past.
Criterion C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose parts may lack individual distinction.
Criterion D.Have yielded, or may yield, information important to prehistory or history.

Criteria used for assessment of potential eligibility for the Washington Heritage Register are similar to NRHP criteria. Criteria to qualify include:

• The resource should have documented historical significance at the local or state level.
• The resource should have a high to medium level of integrity.
• Age of at least 50 years. If newer, the resource should have documented exceptional significance (OAHP n.d.).

The City of Seattle uses the following guidelines for eligibility for identifying Seattle Landmarks. In order to be designated, the building, object, or site must be at least 25 years old and must meet at least one of the six criteria for designation outlined in the Seattle Landmarks Preservation Ordinance (SMC 25.12.350):

A. It is the location of, or is associated in a significant way with, a historic event with a significant effect upon the community, City, state, or nation; or
B. It is associated in a significant way with the life of a person important in the history of the City, state, or nation; or
C. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, City, state or nation; or

D. It embodies the distinctive visible characteristics of an architectural style, or period, or a method of construction; or
E. It is an outstanding work of a designer or builder; or
F. Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or the City.

The Net Shed 7 is significant on a local scale as it contributed to the general development of the City of Seattle and to the Fishermen's Terminal. It did not contribute to regional history on the state or federal levels. This structure was found to be significant under Criterion C of the Seattle Landmarks Preservation Ordinance. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the City of Seattle's community, specifically the development of the Fishermen's Terminal. The terminal was the Port's first project encompassed under a comprehensive effort to improve Seattle's harbors. The terminal also provided the first public harbor that could house the region's fishing fleet. The establishment of the terminal had a profound effect on the local community shaping the demographic and economy in addition to creating a major fishing industry hub in Seattle, which in turn created thousands of jobs and generates millions of dollars in income and tax revenue. While the terminal was completed in 1914, it was much smaller than present with only a single warehouse visible in historic photographs. Over the following century, the terminal expanded as dredge material was used to create the surrounding landform. The net shed represents one of the older structures within the terminal. It is an intact example of early net sheds and retains all seven aspects of integrity attesting to the significance of this structure, which embody the history of the Fishermen's Terminal. It is therefore eligible as Seattle Landmark under Criterion C.

Physical description:

Net Shed 7 was built in 1943. The building has been regularly maintained and is in very good condition. All the units have a wood ladder attached to the wall, power and sprinklers.

The structure is 192 feet long by 60 feet wide by 27 feet 8 inches high. The long sides (east and west) of the building is divided into 12 bays 16 feet wide by 30 feet deep by approximately 25 feet 6 inches high. This creates 24 discrete storage spaces that are separated from each other by plywood walls that provide security and additional shear strength. The 24 spaces are ventilated by 12 twenty inch diameter steel ventilators that are regularly spaced at 16 feet on center along the ridge of the built up roof. Each ventilator serves two storage spaces.

The foundation consists of driven piles (approximately 15 inches in diameter) that are cut off at approximately 45 feet and embedded in reinforced concrete caps two feet high by two feet six inches square. The pile caps are connected by reinforced concrete beams that sit on the pile tops and are 10 inches wide by 4 feet 9 inches high around the perimeter, and 10 inches wide by 3 feet high on the interior. The floor is a 5 inch thick reinforced concrete slab that is placed over compacted soil.

The walls are formed by 6 by 8 inch posts 8 feet on center on the long sides (east and west) and 6 by 8 inch posts 10 feet on center on the short sides. The columns extend up 15 feet to a continuous 8 by 16 inch beam that runs the 60 feet width of the structure. Each 16 feet wide shed is connected to the 16 inch deep beams by 6 by 12 inch pole beams at 10 feet on center. Stud partitions with 4 by 8 inch studs at 6 feet on center are connected by a plate of (2) 2 by 8 inch studs. The plates are connected with 6 by 10 inch purlins centered on the studs at 6 feet on center. The roof is made of 2 by 6 inch T & G decking covered with three-ply built up roofing.

The interior walls have diagonal 3 by 12 inch bracing on each demising and exterior wall that connect to 4 by 8 inch girts, columns and beams. The exterior walls (east and west) have overlapping diagonal braces 3 by 6 inches that connect through two units. The exterior of the building is clad with painted steel corrugated siding. Each unit (12 each side) has a 7 feet 4 inch wide by 8 feet high sliding door. The doors are built up of three layers, a back frame of 1 by 8 inch boards, a middle layer of 1 by 4 inch flooring and an exterior layer made of 1 by 8 inch boards and two steel ventilation grilles with mesh backing.

Bibliography:

Johnson, Larry E.
n.d. Historic Property Inventory Form, Historic Fishermen's Terminal – South Bulkhead Wall. On file at DAHP, Olympia.

National Park Service (NPS)
2002 How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15. U.S. Department of the Interior, National Park Service, Washington, D.C Electronic resource, https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm, accessed April 6, 2017.

Oldham, Kit
2012 Seattle's Fishermen's Terminal is dedicated on January 10, 1914. Electronic resource, http://www.historylink.org/File/10020, accessed April 10, 2017.

Historic Property Report

Resource Name: Bank (C-12)

Property ID: 709704

Location

Address: 2000 W Emerson Pl, Seattle, Washington, 98119, USA

Geographic Areas: King Certified Local Government, Seattle Certified Local Government, King County, T25R03E14, SHILSHOLE BAY Quadrangle

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa
Built Date	1964	☐
Remodel	1976	☐

Historic Use:

Category	Subcategory
Vacant/Not in Use	

Historic Context:

Category
Commerce

Architect/Engineer:

Category	Name or Company
Architect	Wilkins and Ellison

Historic Property Report

Resource Name: Bank (C-12)

Property ID: 709704

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

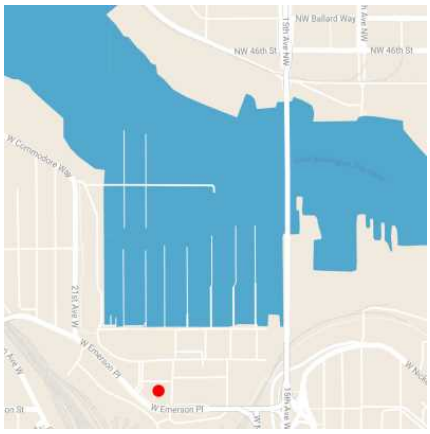
Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
2017-04-02572, , Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Project, Seattle, King County, Washington	4/10/2017		

Historic Property Report

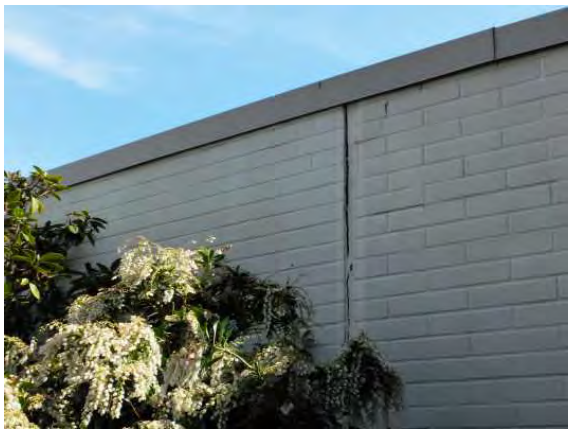
Resource Name: Bank (C-12)

Property ID: 709704

Photos

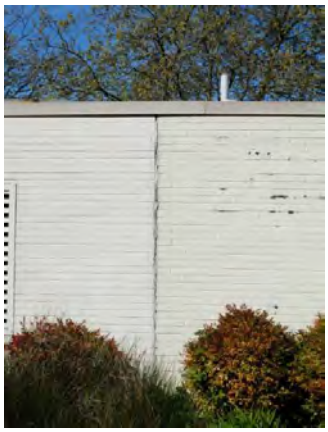


Locator Map



Expansion Joint East Addition

Canopy Addition at Drive Thru Teller



Expansion Joint at West Addition

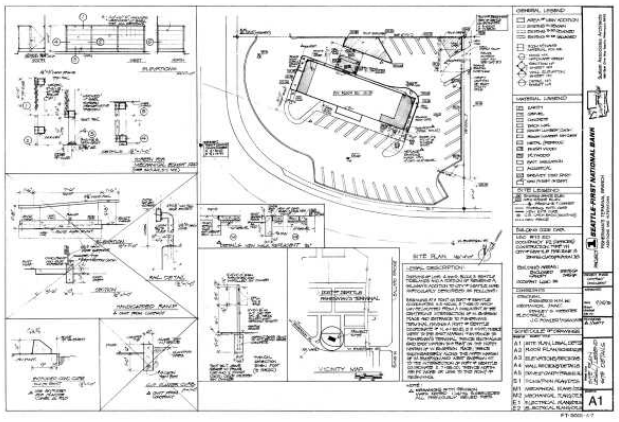
South West Elevation

South East Elevation

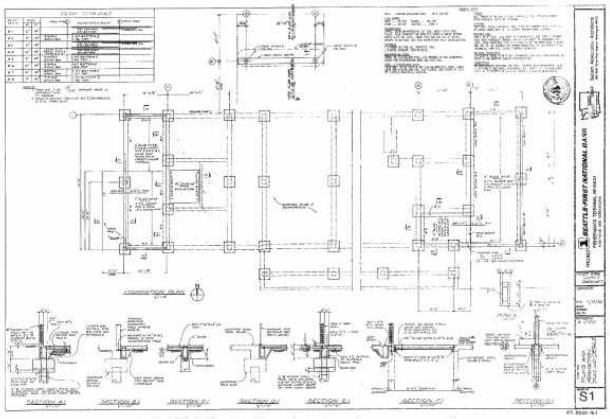
Historic Property Report

Resource Name: Bank (C-12)

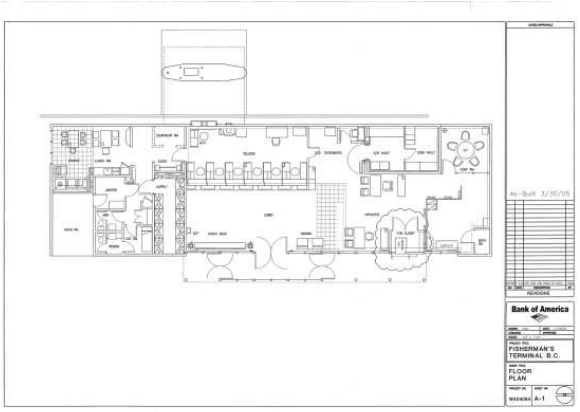
Property ID: 709704



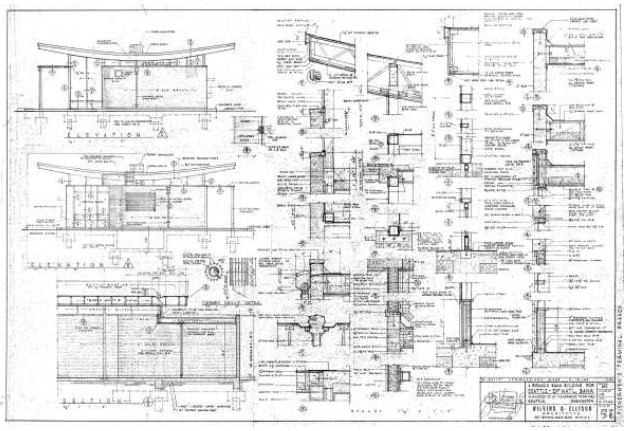
Site Plan with Additions -1976



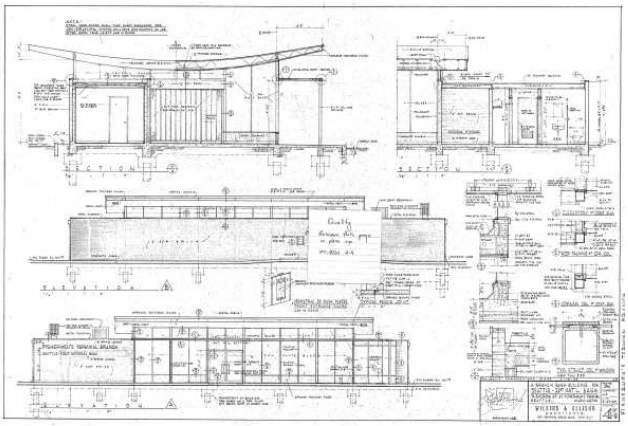
Foundation Plan - 1967



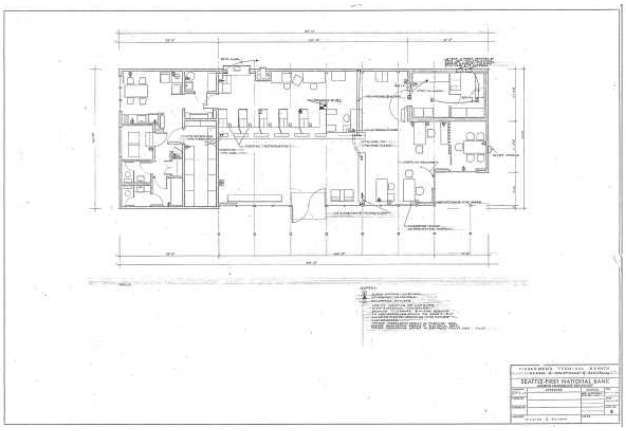
Floor Plan - 2004



Elevations and Details - 1964



Elevation and Section - 1964

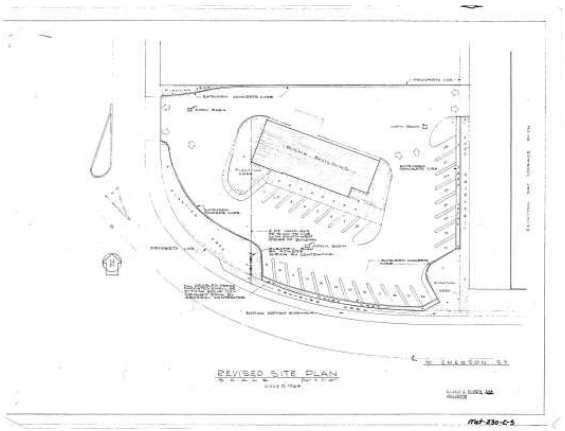


Floor Plan - 1964

Historic Property Report

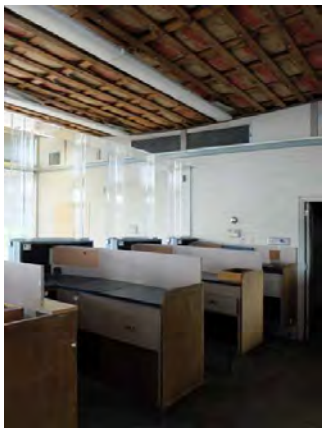
Resource Name: Bank (C-12)

Property ID: 709704



Site Plan - 1966

Drive Thru Vacuum



Banking Hall Roof Structure

Banking Hall

East Elevation

Historic Property Report

Resource Name: Bank (C-12) Property ID: 709704

Inventory Details - 4/10/2017

Common name: Bank (C-12)

Date recorded: 4/10/2017

Field Recorder: James McNett

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Form Type	Commercial
Foundation	Concrete - Poured
Roof Type	Parabolic
Cladding	Brick
Cladding	Glass
Plan	Rectangle
Structural System	Metal - Steel
Roof Type	Flat with Parapet
Roof Material	Asphalt/Composition - Built Up

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: No

Property is located in a potential historic district (National and/or local): No

Property potentially contributes to a historic district (National and/or local): No

Significance narrative: HISTORIC CONTEXT
In 1911, the Port of Seattle was created and a development proposal was set forth for the southern shore of Salmon Bay. In May of 1912 the Port set aside 55.4 acres of land on the southern shore of the bay (Johnson n.d.) and the Port began construction of the Fishermen's Terminal in the following year (Oldham 2012). In December 1913, King County voters approved the diversion of $175,000 to be used toward the development of the terminal. The terminal was one of the Port's first projects encompassed under a comprehensive effort to improve Seattle's harbors. The terminal had been envisioned as a harbor for Seattle's fishing fleet as no homeport had previously existed. The Puget Sound Purse Seine Fishermen's Association lead by the fishing boat operators had been vying for a centralized public port with facilities needed to maintain their boats and equipment, an idea that was advocated for by Miller Freeman.

Construction of the terminal involved land building to make the tide flats useable (Johnson n.d.). Bulkheads were emplaced and dredge material from the construction of the Ship Canal was imported to build the land approximately 12 feet above the existing high tide line leaving the terminal four feet above the waterline after the Ship Canal locks

were constructed (Oldham 2012). On January 10, 1914, the terminal housed Seattle's fishing fleet. The new terminal included 1,800 feet of moorage, accommodations for 100 boats, a large warehouse for nets and equipment, dry storage ways, and a marine railway. The opening of the terminal was marked by a boat parade through Salmon Bay comprised of ships from all over Puget Sound and even Alaska. The event was attended by Governor Ernest Lister, Seattle Mayor, former legislator, and future Port Commissioner George Cotterill, and Port Commission Chairman Hiram M. Chittenden. Original dedicated as The Port of Seattle Fishermen's Headquarters, it quickly became known as Fishermen's Terminal. Over the following decades, the Port expanded and improved the terminal through fill episodes to increase the usable land and available facilities. The terminal was the center of the regional fishing industry and generated thousands of jobs and millions of business revenue and taxes even in its more recent decline.

REGISTER ELIGIBILITY

Resources over 50 years old are typically defined as significant or potentially significant if they are identified as of special importance to an ethnic group or Indian tribe or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the NRHP (NPS, 2002). According to the NRHP guidelines, the "essential physical features" of a property must be intact for it to convey its significance, and the resource must retain its integrity, or "the ability of a property to convey its significance." The seven aspects of integrity are location, setting, design, materials, workmanship, feeling and association to convey its historical significance. The Bank of America has lost some of its integrity due to two remodels that changed the exterior configuration. It must then satisfy one or more of the following four criteria to be eligible for the NRHP:

Criterion A. Be associated with events that have made a significant contribution to the broad patterns of our history.
Criterion B. Be associated with the lives of persons significant to our past.
Criterion C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose parts may lack individual distinction.
Criterion D. Have yielded, or may yield, information important to prehistory or history.

Criteria used for assessment of potential eligibility for the Washington Heritage Register are similar to NRHP criteria. Criteria to qualify include:

- The resource should have documented historical significance at the local or state level.
- The resource should have a high to medium level of integrity.
- Age of at least 50 years. If newer, the resource should have documented exceptional significance (OAHP n.d.).

The City of Seattle uses the following guidelines for eligibility for identifying Seattle Landmarks. In order to be designated, the building, object, or site must be at least 25 years old and must meet at least one of the six criteria for designation outlined in the Seattle Landmarks Preservation Ordinance (SMC 25.12.350):

A. It is the location of, or is associated in a significant way with, a historic event with a significant effect upon the community, City, state, or nation; or
B. It is associated in a significant way with the life of a person important in the history of

the City, state, or nation; or
C. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, City, state or nation; or
D. It embodies the distinctive visible characteristics of an architectural style, or period, or a method of construction; or
E. It is an outstanding work of a designer or builder; or
F. Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or the City.

Based on the above criteria, the Bank of America Building (C-12) does not have historic significance because it only contributed to the general development of the City of Seattle and to the Fishermen's Terminal and did not have an historic impact on the state or federal levels. It does not satisfy Criteria A – F of the Seattle Landmarks Preservation Ordinance as it is not associated with a historic event, important person, or the heritage of the local community. Neither is it of a distractive architectural style, a prominent work of a designer or builder, or a point of prominence on the local landscape.

Physical description:

DESCRIPTION

The original Seattle First Bank building, designed in 1964, was 31 feet wide by 82 feet long and enclosed an area of approximately 2,454 square feet. In 1976 a remodel by Seattle First Bank increased the enclosed area to 3,364 square feet by expanding both ends, converting a portion of the front covered walkway into a vestibule and adding a drive thru teller canopy and island on the north side. The overall openness of the original design was compromised by the present Bank of America remodel, which was done in 2004 and essentially fortified the banking space with the addition of an ATM, and bullet proof enclosures for the teller positions. In spite of these remodels, the existing building is only slightly different in intent than the original 1964 design by Wilkins and Ellison, local Seattle architects.

The building is laid out on a roughly modular 4 foot grid that accommodated the open floor plan and the storefront glazing system which was incorporated into the present Bank of America version. The foundation was set on 12 inch augured concrete piles that were cut off at approximately 37 feet and topped with concrete pile caps which were connected by 12 inch wide by 18 inch deep reinforced concrete grade beams. The reinforced 6 inch concrete slab floor was set with a visqueen vapor barrier on top of compacted gravel.

The storefront walls are steel sections 1 ½ by 3 inches and 4 by 4 inches on a four foot grid. The typical glazing module on the south (front entry façade) is a bottom spandrel 4 feet wide by 20 inches high and an upper 4 feet wide by 7 feet 4 inch high ¼ inch plate glass portion on top that goes to the underside of the canopy. The original glass may have been replaced.

The most obvious design feature is the Corbusian catenary roof that floats over the banking hall. This is made up of custom truss joists spaced 2 feet on center. The curve of the trusses is taken on by the ½ inch plywood decking applied to both sides. The topside is covered with a built up roof membrane and the bottom side with a sprayed on textured finish. The lightweight structure floats 2-4 feet above the flat built up roof portions of the building creating a clerestory in the public banking area.

The other exterior walls are made of 6 inch SCR (Structural Clay Research) brick, a patented brick with nominal dimensions of 2-2/3 by 6 by 12 inches which is exposed on both sides to make a wall 6 inches thick overall. The interior of the building is more typical frame construction for demising walls and uses 2 by 8 inch ceiling joists at 16 inches on center to support the roof of ½ inch plywood with built up roofing. The typical interior height is 8 feet 2 inches clear. The finish materials have changed little over time. The site was reconfigured during the 1976 which altered the driveways.

Bibliography:

Johnson, Larry E.
n.d. Historic Property Inventory Form, Historic Fishermen's Terminal – South Bulkhead Wall. On file at DAHP, Olympia.

National Park Service (NPS)
2002 How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15. U.S. Department of the Interior, National Park Service, Washington, D.C Electronic resource, https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm, accessed April 6, 2017.

Oldham, Kit
2012 Seattle's Fishermen's Terminal is dedicated on January 10, 1914. Electronic resource, http://www.historylink.org/File/10020, accessed April 10, 2017.

Historic Property Report

Resource Name: Net Shed (N-8)

Property ID: 709703

Location

Address: 2000 W Emerson Pl, Seattle, Washington, 98119, USA

Geographic Areas: King Certified Local Government, Seattle Certified Local Government, King County, T25R03E14, SHILSHOLE BAY Quadrangle

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa
Built Date	1954	☐
Remodel	1960	☐

Historic Use:

Category	Subcategory

Historic Context:

Category

Architect/Engineer:

Category	Name or Company

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Historic Property Report

Resource Name: Net Shed (N-8) Property ID: 709703

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
2017-04-02572, , Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Project, Seattle, King County, Washington	4/10/2017		

Historic Property Report

Resource Name: Net Shed (N-8)

Property ID: 709703

Photos

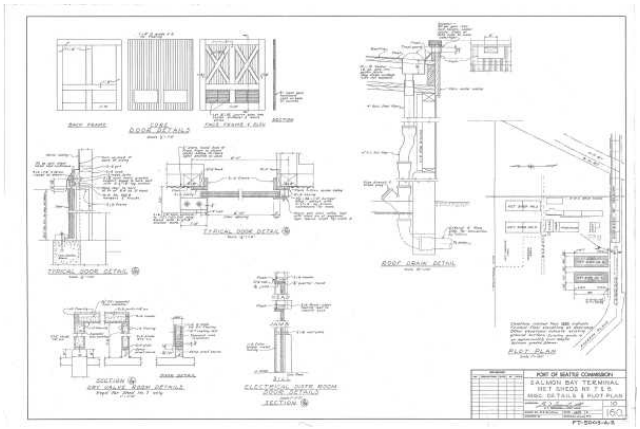
Locator Map

Net Shed 8 on Left and Net Shed 7 on Right

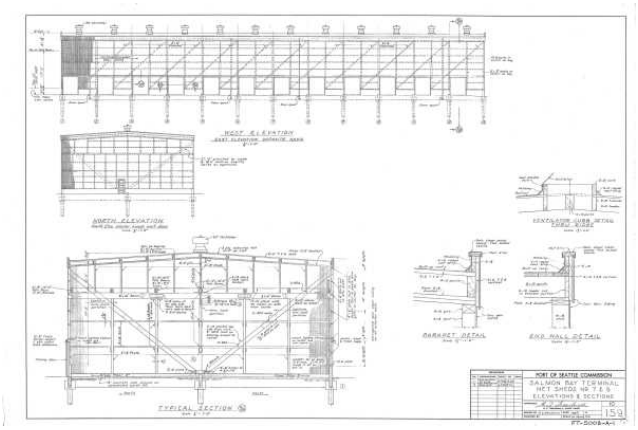
Typical FDoor

Partial West Elevation Looking North

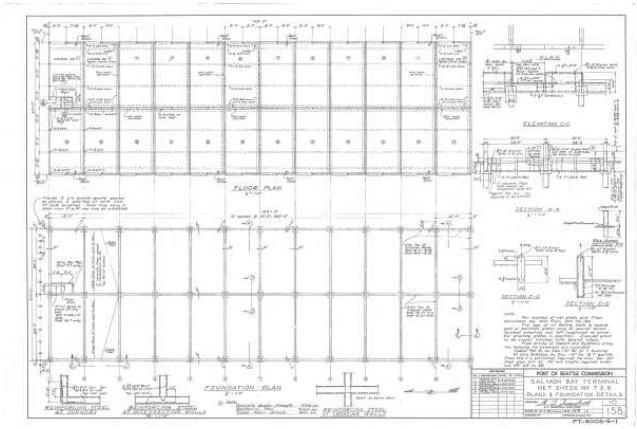
Partial West Elevation



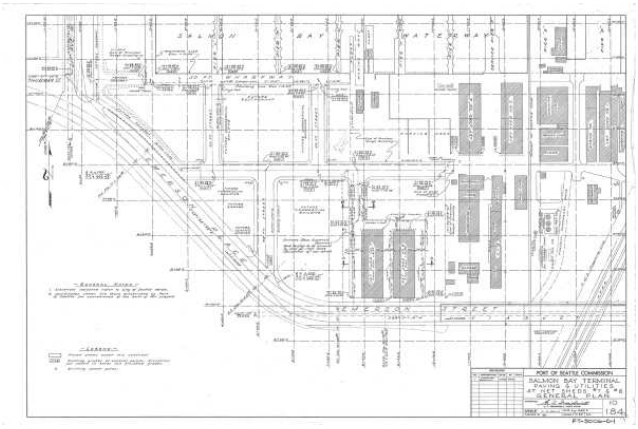
Details and Plot Plan



Sections and Elevations



Floor and Foundation Plans



Fishermens Terminal Site Plan

Interior Ladder

Fig.6 Diagonal Bracing

Structure with Ladder

Structure with Mesh

Northeast Exterior Corner of Net Shed 8

Historic Property Report

Resource Name: Net Shed (N-8) Property ID: 709703

Inventory Details - 4/10/2017

Common name: Net Shed (N-8)

Date recorded: 4/10/2017

Field Recorder: James McNett

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Foundation	Concrete - Poured
Form Type	Utilitarian
Roof Type	Flat with Parapet
Roof Material	Asphalt/Composition - Built Up
Cladding	Metal - Corrugated
Structural System	Wood - Post and Beam
Plan	Rectangle

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: No

Property is located in a potential historic district (National and/or local): No

Property potentially contributes to a historic district (National and/or local): No

Significance narrative: HISTORIC CONTEXT

In 1911, the Port of Seattle was created and a development proposal was set forth for the southern shore of Salmon Bay. In May of 1912 the Port set aside 55.4 acres of land on the southern shore of the bay (Johnson n.d.) and the Port began construction of the Fishermen's Terminal in the following year (Oldham 2012). In December 1913, King County voters approved the diversion of $175,000 to be used toward the development of the terminal. The terminal was one of the Port's first projects encompassed under a comprehensive effort to improve Seattle's harbors. The terminal had been envisioned as a harbor for Seattle's fishing fleet as no homeport had previously existed. The Puget Sound Purse Seine Fishermen's Association lead by the fishing boat operators had been vying for a centralized public port with facilities needed to maintain their boats and equipment, an idea that was advocated for by Miller Freeman.

Construction of the terminal involved land building to make the tide flats useable (Johnson n.d.). Bulkheads were emplaced and dredge material from the construction of the Ship Canal was imported to build the land approximately 12 feet above the existing high tide line leaving the terminal four feet above the waterline after the Ship Canal locks were constructed (Oldham 2012). On January 10, 1914, the terminal housed Seattle's fishing fleet. The new terminal included 1,800 feet of moorage, accommodations for 100

boats, a large warehouse for nets and equipment, dry storage ways, and a marine railway. The opening of the terminal was marked by a boat parade through Salmon Bay comprised of ships from all over Puget Sound and even Alaska. The event was attended by Governor Ernest Lister, Seattle Mayor, former legislator, and future Port Commissioner George Cotterill, and Port Commission Chairman Hiram M. Chittenden. Original dedicated as The Port of Seattle Fishermen's Headquarters, it quickly became known as Fishermen's Terminal. Over the following decades, the Port expanded and improved the terminal through fill episodes to increase the usable land and available facilities. The terminal was the center of the regional fishing industry and generated thousands of jobs and millions of business revenue and taxes even in its more recent decline.

NATIONAL REGISTER ELIGIBILITY

Resources over 50 years old are typically defined as significant or potentially significant if they are identified as of special importance to an ethnic group or Indian tribe or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the NRHP (NPS, 2002). According to the NRHP guidelines, the "essential physical features" of a property must be intact for it to convey its significance, and the resource must retain its integrity, or "the ability of a property to convey its significance." The seven aspects of integrity are location, setting, design, materials, workmanship, feeling and association to convey its historical significance. Net Shed 8 has maintained its integrity to an unusual degree. It must then satisfy one or more of the following four criteria to be eligible for the NRHP:

Criterion A. Be associated with events that have made a significant contribution to the broad patterns of our history.
Criterion B. Be associated with the lives of persons significant to our past.
Criterion C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose parts may lack individual distinction.
Criterion D. Have yielded, or may yield, information important to prehistory or history.

Criteria used for assessment of potential eligibility for the Washington Heritage Register are similar to NRHP criteria. Criteria to qualify include:

- The resource should have documented historical significance at the local or state level.
- The resource should have a high to medium level of integrity.
- Age of at least 50 years. If newer, the resource should have documented exceptional significance (OAHP n.d.).

The City of Seattle uses the following guidelines for eligibility for identifying Seattle Landmarks. In order to be designated, the building, object, or site must be at least 25 years old and must meet at least one of the six criteria for designation outlined in the Seattle Landmarks Preservation Ordinance (SMC 25.12.350):

A. It is the location of, or is associated in a significant way with, a historic event with a significant effect upon the community, City, state, or nation; or
B. It is associated in a significant way with the life of a person important in the history of the City, state, or nation; or
C. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, City, state or nation; or

D. It embodies the distinctive visible characteristics of an architectural style, or period, or a method of construction; or
E. It is an outstanding work of a designer or builder; or
F. Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or the City.

The Net Shed 8 is significant on a local scale as it contributed to the general development of the City of Seattle and to the Fishermen's Terminal. It did not contribute to regional history on the state or federal levels. This structure was found to be significant under Criterion C of the Seattle Landmarks Preservation Ordinance. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the City of Seattle's community, specifically the development of the Fishermen's Terminal. The terminal was the Port's first project encompassed under a comprehensive effort to improve Seattle's harbors. The terminal also provided the first public harbor that could house the region's fishing fleet. The establishment of the terminal had a profound effect on the local community shaping the demographic and economy in addition to creating a major fishing industry hub in Seattle, which in turn created thousands of jobs and generates millions of dollars in income and tax revenue. While the terminal was completed in 1914, it was much smaller than present with only a single warehouse visible in historic photographs. Over the following century, the terminal expanded as dredge material was used to create the surrounding landform. The net shed represents one of the older structures within the terminal. It is an intact example of early net sheds and retains all seven aspects of integrity attesting to the significance of this structure, which embody the history of the Fishermen's Terminal. It is therefore eligible as Seattle Landmark under Criterion C.

Physical description:

Net Shed 8 was built in 1954. The building has been regularly maintained and is in very good condition. All the units have a wood ladder attached to the wall, power and sprinklers.

The structure is 192 feet long by 60 feet wide by 27 feet 8 inches high. The long sides (east and west) of the building is divided into 12 bays 16 feet wide by 30 feet deep by approximately 25 feet 6 inches high. This creates 24 discrete storage spaces that are separated from each other by plywood walls that provide security and additional shear strength. The 24 spaces are ventilated by 12 twenty inch diameter steel ventilators that are regularly spaced at 16 feet on center along the ridge of the built up roof. Each ventilator serves two storage spaces.

The foundation consists of driven piles (approximately 15 inches in diameter) that are cut off at approximately 45 feet and embedded in reinforced concrete caps two feet high by two feet six inches square. The pile caps are connected by reinforced concrete beams that sit on the pile tops and are 10 inches wide by 4 feet 9 inches high around the perimeter, and 10 inches wide by 3 feet high on the interior. The floor is a 5 inch thick reinforced concrete slab that is placed over compacted soil.
The walls are formed by 6 by 8 inch posts 8 feet on center on the long sides (east and west) and 6 by 8 inch posts 10 feet on center on the short sides. The columns extend up 15 feet to a continuous 8 by 16 inch beam that runs the 60 feet width of the structure. Each 16 feet wide shed is connected to the 16 inch deep beams by 6 by 12 inch pole beams at 10 feet on center. Stud partitions with 4 by 8 inch studs at 6 feet on center are connected by a plate of (2) 2 by 8 inch studs. The plates are connected with 6 by 10 inch purlins centered on the studs at 6 feet on center. The roof is made of 2 by 6 inch T & G decking covered with three-ply built up roofing.

The interior walls have diagonal 3 by 12 inch bracing on each demising and exterior wall that connect to 4 by 8 inch girts, columns and beams. The exterior walls (east and west) have overlapping diagonal braces 3 by 6 inches that connect through two units. The exterior of the building is clad with painted steel corrugated siding. Each unit (12 each side) has a 7 feet 4 inch wide by 8 feet high sliding door. The doors are built up of three layers, a back frame of 1 by 8 inch boards, a middle layer of 1 by 4 inch flooring and an exterior layer made of 1 by 8 inch boards and two steel ventilation grilles with mesh backing.

Bibliography:

Johnson, Larry E.
n.d. Historic Property Inventory Form, Historic Fishermen's Terminal – South Bulkhead Wall. On file at DAHP, Olympia.

National Park Service (NPS)
2002 How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15. U.S. Department of the Interior, National Park Service, Washington, D.C Electronic resource, https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm, accessed April 6, 2017.

Oldham, Kit
2012 Seattle's Fishermen's Terminal is dedicated on January 10, 1914. Electronic resource, http://www.historylink.org/File/10020, accessed April 10, 2017.

Historic Property Report

Resource Name: Seattle Ship Supply Company Property ID: 38460

Location

Address: 2000 W Emerson Pl, Seattle, Washington, USA

Tax No/Parcel No: 766620-0120

Plat/Block/Lot: Block 3, Lot 10

Geographic Areas: King County, EDMONDS EAST Quadrangle, King Certified Local Government, Seattle Certified Local Government, King County, T25R03E14, SHILSHOLE BAY Quadrangle

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa
Built Date	1918	☐

Historic Property Report

Resource Name: Seattle Ship Supply Company Property ID: 38460

Historic Use:

Category	Subcategory
Commerce/Trade	Commerce/Trade - Business
Commerce/Trade	Commerce/Trade - Business

Historic Context:

Category
Commerce
Maritime - Trade and Commerce

Architect/Engineer:

Category	Name or Company
Architect	Carlson Evey Grevstad 1953 Remodel

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
2004-12-00059, , Seattle Monorail Project - Greenline EIS	5/29/2003	Determined Not Eligible	, 11/20/2003
2011-09-00168, , Maritime Resources Survey 2011	2/1/2011	Not Determined	
2017-04-02572, , Cultural Resources Assessment for the SEPA Expanded Environmental Checklist for the Port's Fishermen's Terminal Project, Seattle, King County, Washington	4/10/2017		

Historic Property Report

Resource Name: Seattle Ship Supply Company Property ID: 38460

Photos

Exterior southwest facade

Exterior South and East Elevations

Partial West Elevation Lower Level

Partial West Elevation

Partial South Elevation

West Elevation

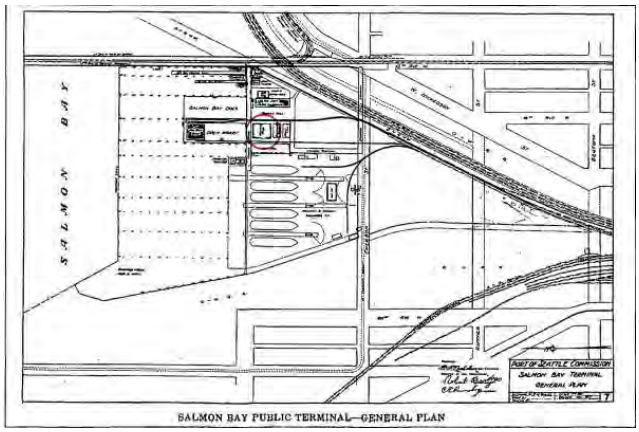
North West Elevation

West Second Story, East Similar

SW Elevation

Truss Structures Between the Columns on Both Sides of the Shed

One of Four Truss Supports for the Roof

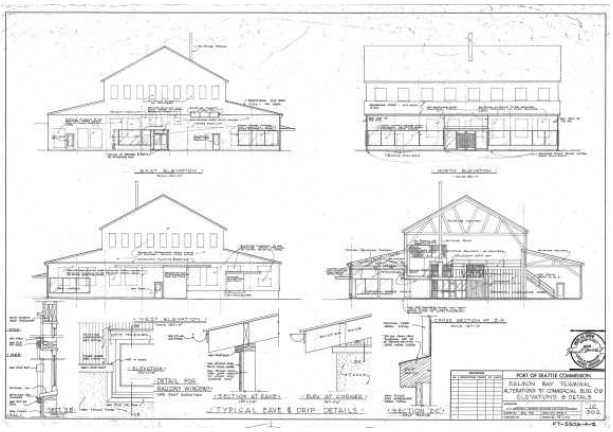


1917 Map

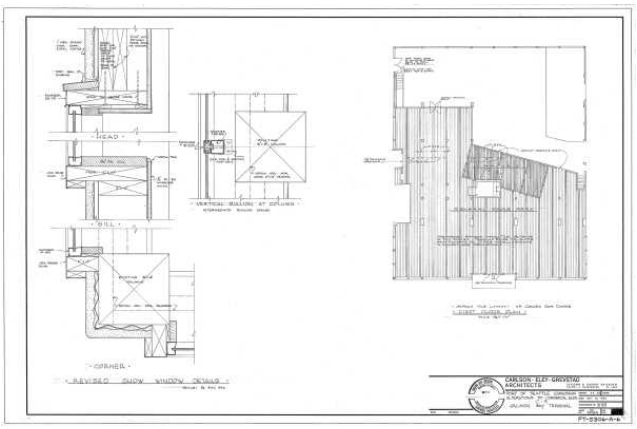
Historic Property Report

Resource Name: Seattle Ship Supply Company Property ID: 38460

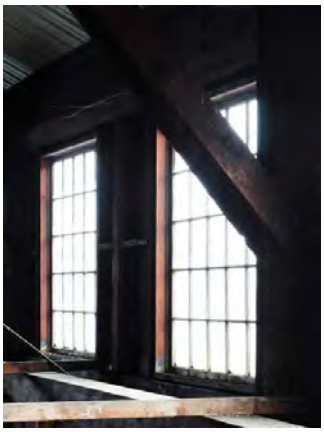
1955 Historic Photograph from Puget Sound Maritime History



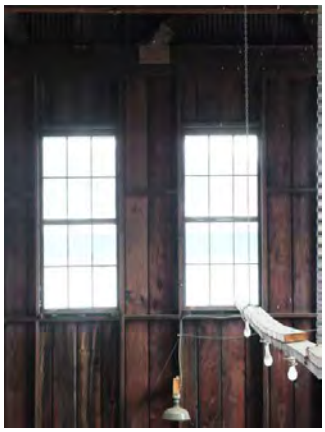
Sections and Elevations - 1953



Floor Plan - 1953



Fixed Windows - Interior View



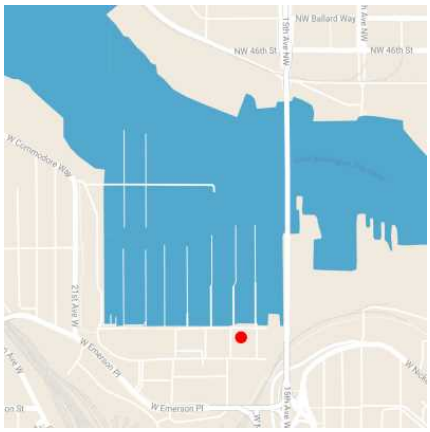
Double Hung Windows - Interior View

Upper Level Looking West

Relocated Door Pulls

Front Door Porthole - Exterior

East Elevation



Locator Map

Exterior Window

Exterior Northwest Facade

Historic Property Report

Resource Name: Seattle Ship Supply Company Property ID: 38460

Exterior Northeast Facade

Exterior North Facade

Historic Property Report

Resource Name: Seattle Ship Supply Company Property ID: 38460

Inventory Details - 5/29/2003

Common name: Fisherman's Terminal

Date recorded: 5/29/2003

Field Recorder: ENTRIX, Inc.

Field Site number: I-1B

SHPO Determination

Detail Information

Characteristics:

Category	Item
Foundation	Concrete - Poured
Cladding	Metal - Corrugated
Roof Type	Gable - Front
Structural System	Wood - Post and Beam
Plan	Rectangle
Roof Material	Asphalt/Composition - Shingle

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: No

Property is located in a potential historic district (National and/or local): No

Significance narrative: Captain Olaf O. Hvatum, a Ballard Fisherman, started the Seattle Ship Supply Company in 1937 at Fisherman's Dock, also known as Fisherman's Terminal. The company provided supplies to Seattle fishermen for many years. The Seattle Ship Supply Company operated from this location until recently. The building has undergone numerous alterations, most notable the addition of corrugated metal siding and the covering of all windows. The building is not eligible for listing in the NRHP under criterion A, B or C due to the extensive alterations and lack of historical significance.

Physical description: This vernacular industrial has been completely resided and the windows have been covered. The north elevation ground floor windows have been altered. Windows on the ground floor originally were large multi-pane windows. Later the windows were altered to large storefront windows and recently they have been covered with corrugated metal. This two story building has a monitor roof.

Bibliography: Historical King County Assessor's Records, 1930s-1950s. Washington State Archives. Seattle City Directories, 1890-1996. Sanborn Fire Insurance Maps, 1950.

Historic Property Report

Resource Name: Seattle Ship Supply Company Property ID: 38460

Inventory Details - 2/1/2011

Common name: Seattle Ship Supply

Date recorded: 2/1/2011

Field Recorder: Spencer Howard, Katie Chase, Artifacts Consulting

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Cladding	Metal - Corrugated
Structural System	Wood - Post and Beam
Roof Type	Monitor
Roof Material	Metal - Corrugated
Form Type	Commercial
Cladding	Stucco
Plan	Rectangle

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: No

Property is located in a potential historic district (National and/or local): No

Property potentially contributes to a historic district (National and/or local): No

Significance narrative: Commercial development within the Salish Sea and along the Pacific Coast depended upon exports with trade-based economies growing as the region's population and infrastructure improved. The period from the 1850s to 1880s saw the primitive beginnings of sustained Euro-American settlement along the shores of the Sea and nascent commercial activity. It closed with the arrival of transcontinental railroad connection to the Salish Sea and the territory becoming a state in 1889.
The rapid growth and technological improvements in the decades starting with the 1890s and continuing through World War I brought significant changes to maritime resources for local and Intercoastal shipping, processing, resource extraction and recreation. The ascendance of automobile travel, the trucking industry and railroads from 1919 through World War II had profound impacts on maritime operations. The 1950s through 1970s ushered in the rise of superports handling containerized cargo, expansion of industrial and processing facilities along the Salish Sea, and the unprecedented growth of recreation activities and a growing environmental awareness.
These activities exerted a profound influence on the shoreline character. Logging pulled trees back from the water's edge and agricultural, commercial, extraction and industrial operations filled their void, developing along the shoreline to take advantage of transportation along the waterways.
Our shores retain a wide sampling of properties related to trade and commerce functions, including operating boat yards, former mill sites, and former fort buildings. Many remain in their original or closely related function while others have transitioned to public roles through municipal and non-profit entities. Interpretation of these elements provides a key mechanism for understanding the development and changes of our shorelines over time.

Physical description: The building at 2000 West Emerson Place is in Seattle, Washington. The structure was built in 1918 (according to the county assessor) in a vernacular style and commercial form. The building has a rectangle plan and stands on an unknown foundation. The two story post/beam building has a monitor roof clad in corrugated metal. The walls are clad in corrugated metal and veneer – stucco. The original plan and windows appear to be intact. There appear to be moderate alterations to the original cladding and extensive alterations to the original storefront.

Bibliography:

Andersen, Helen McReavy. How When and Where on Hood Canal. Everett: Puget Press, Inc., 1960.
Blanchard, Norman C. with Stephen Wilen. Knee-Deep in Shavings: Memories of Early Yachting & Boatbuilding on the West Coast. Victoria, B.C.: Horsdal & Schubart, 1999.
Chasan, Jack. The Water Link: A History of Puget Sound as a Resource. Seattle, WA: Washington Sea Grant Program, University of Washington, 1981.
Corning, H. M. (1950). The New Washington: A Guide to the Evergreen State. Portland, Oregon: Binfords & Mort.
Darby, A. (2008). Harpoon: Into the Heart of Whaling. Cambridge, MA: Da Capo Press.
Davidson, George. Pacific Coast: Coast Pilot of California, Oregon, and Washington Territory. Washington, D.C.: Government Printing Office, 1869.
Ewert, Eric C. "Setting the Pacific Northwest State: The Influence of the Natural Environment." In Northwest Lands, Northwest Peoples: Readings in Environmental History, by Dale D. and Paul W. Hirt Goble, 3-25. Seattle, WA, 1999.
Findlay, Jean Cammon and Robin Paterson. Mosquito Fleet of South Puget Sound. Charleston, SC: Arcadia Publishing, 2008.
Goetzmann, William H. New Lands, New Men: America and the Second Great Age of Discovery. New York: Viking, 1986.
Grover, David H. The Unforgiving Coast: Maritime Disasters of the Pacific Northwest. Corvallis, OR: Oregon State Univeristy Press, 2002.
Hanable, W. S. (2008). Lighthouses and Lifesaving on Washington's Outer Coast. Charleston, SC: Arcadia Publishing.
Haw, F., & Buckley, R. M. (1973). Saltwater Fishing in Washington. Seattle: Stan Jones Publishing, Inc.
LeWarne, Charles Pierce. Utopies on Puget Sound 1885-1915. Seattle, WA: University of Washington Press, 1975.
Morgan, Murray. Puget's Sound: A Narrative of Early Tacoma and the Southern Sound. Seattle, WA: University of Washington Press, 1979.
Newell, Gordon R. Ships of the Inland Sea: The Story of the Puget Sound Steamboats. Portland, OR: Binfords & Mort, 1960.
Swan, J. G. (1977). The Northwest Coast. Seattle: University of Washington Press.
Tyler, D. B. (1968). The Wilkes Expedition. Philadelphia: The American Philosophical Society.
Viola, H. J., & Margolis, C. (Eds.). (1985). Magnificent Voyagers: The U.S. Exploring Expedition, 1838-1842. Washington, D.C.: Smithsonian Institution Press.

Historic Property Report

Resource Name: Seattle Ship Supply Company Property ID: 38460

Inventory Details - 4/10/2017

Common name: Seattle Ship Supply (C-9)

Date recorded: 4/10/2017

Field Recorder: James McNett

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Foundation	Log
Form Type	Utilitarian
Roof Type	Gable - Cross
Roof Material	Metal
Cladding	Metal - Corrugated
Structural System	Wood - Post and Beam
Plan	Rectangle
Cladding	Stucco
Cladding	Adobe
Foundation	Concrete - Poured

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: No

Property is located in a potential historic district (National and/or local): No

Property potentially contributes to a historic district (National and/or local): No

Significance narrative: Euro-American exploration of the Puget Sound began in 1792 with Captain Vancouver, followed by the Wilkes Expedition in 1841. In 1850, the federal government enacted the Oregon Donation Land Act, which enticed settlers to the area by awarding them free land. In 1851, the first Euro-American settlers arrived on Alki Point and established a temporary settlement (Wilma 2001). They later moved across Elliott Bay and established the settlement of Seattle, honoring Indian Chief Sealth of the Duwamish people. Early settlers explored the surrounding landscape and many staked claims under the Oregon Donation Land Act. At this time, present-day Seattle neighborhood of Interbay consisted primarily of salt marsh and tide flats. In 1853, Washington was established as a territory, which increased people s interest in settling the Puget Sound region. In this same year, Dr. Henry Smith (b. 1830 d. 1915) chose the small inlet on the south shore of Salmon Bay as his home. Smith had travelled from Ohio and chose the location for its potential proximity to shipping and railway ventures. Smith was followed by Edmund Carr and E. M. Smithers who staked adjacent claims on Salmon Bay (USSG 1855, 1863).

In 1855, following the signing of the Point Elliot Treaty and others, many area tribes were forced to abandon most of their Puget Sound villages and relocate to reservations. The treaty dissolved Indian title to their traditional and accustomed lands and by 1855-1856 the federal government used military force to contain Indian people dissatisfied with the poor quality of reservation lands. Individuals considered to belong to the Suquamish Tribe were relocated to the Port Madison Indian Reservation and the Muckleshoot Indian Tribes was relocated to the Muckleshoot Reservation. Some Duwamish people moved to these reservations; however, many remained on their ancestral lands. The Duwamish Tribe is currently seeking federal recognition (Duwamish Tribe 2011).

In the 1880s, the Seattle Lake Shore & Eastern railroad came to Salmon Bay through The Outlet, also known as Ross Creek or Shilshole Creek, valley extending west from Lake Union (Wilma 2001). Ballard continued to expand on the northern shore of Salmon Bay and became a hub for local saw mills after The Great Fire 1889 in Seattle proper. In 1892, the Great Northern Railway expanded south along Puget Sound traversed Salmon Bay and headed south into Seattle. The first depot of the railroad was at Smith s Cove, which was later moved to Seattle proper. The community of Boulevard was changed to Interbay in 1894 and the local economy catered to transportation ventures driven by an employee base of Slavic and Finnish immigrants.

A component of the Washington State Constitution, adopted in 1890, was the Harbor Line Commission, which called for the establishment of harbor areas to be created for the development of port facilitates (Burke 1976 in Johnson n.d.). Appropriations from the United States Congress in 1894 and 1896 had authorized $175,000 for dredging of Shilshole Bay. In 1900, the right-of-way for the Ship Canal was secured and in 1906 Hiram M. Chitttenden of the U.S. Army Corps of Engineers designed the locks at The Narrows of Salmon Bay in tandem with the canal design. Construction began in 1911 and by 1917 the canal was open. The lock design caused the water level of what was once east Salmon Bay to rise approximately 21 feet above mean sea level and morph into a freshwater environment. During the construction process, dredge spoils were used in land building in low-lying areas surrounding the canal to capitalize on the valuable real estate.

In 1911, the Port of Seattle was created and a development proposal was set forth for the southern shore of Salmon Bay. In May of 1912 the Port set aside 55.4 acres of land on the southern shore of the bay (Johnson n.d.) and the Port began construction of the Fishermen s Terminal in the following year (Oldham 2012). In December 1913, King County voters approved the diversion of $175,000 to be used toward the development of the terminal. The terminal was one of the Port s first projects encompassed under a comprehensive effort to improve Seattle s harbors. The terminal had been envisioned as a harbor for Seattle s fishing fleet as no homeport had previously existed. The Puget Sound Purse Seine Fishermen's Association lead by the fishing boat operators had been vying for a centralized public port with facilities needed to maintain their boats and equipment, an idea that was advocated for by Miller Freeman.

Construction of the terminal involved land building to make the tide flats useable (Johnson n.d.). Bulkheads were emplaced and dredge material from the construction of the Ship Canal was imported to build the land approximately 12 feet above the existing high tide line leaving the terminal four feet above the waterline after the Ship Canal locks were constructed (Oldham 2012). On January 10, 1914, the terminal housed Seattle s fishing fleet. The new terminal included 1,800 feet of moorage, accommodations for 100 boats, a large warehouse for nets and equipment, dry storage ways, and a marine

railway. The opening of the terminal was marked by a boat parade through Salmon Bay comprised of ships from all over Puget Sound and even Alaska. The event was attended by Governor Ernest Lister, Seattle Mayor, former legislator, and future Port Commissioner George Cotterill, and Port Commission Chairman Hiram M. Chittenden. Original dedicated as The Port of Seattle Fishermen s Headquarters, it quickly became known as Fishermen s Terminal. Over the following decades, the Port expanded and improved the terminal through fill episodes to increase the usable land and available facilities. The terminal was the center of the regional fishing industry and generated thousands of jobs and millions of business revenue and taxes even in its more recent decline.

REGISTER ELIGIBILITY
Resources over 50 years old are typically defined as significant or potentially significant if they are identified as of special importance to an ethnic group or Indian tribe or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the NRHP (NPS, 2002). According to the NRHP guidelines, the essential physical features of a property must be intact for it to convey its significance, and the resource must retain its integrity, or the ability of a property to convey its significance. The seven aspects of integrity are location, setting, design, materials, workmanship, feeling and association to convey its historical significance. The Seattle Ship Supply (1918) building has lost some integrity due to remodels and repair work done in the past. It must then satisfy one or more of the following four criteria to be eligible for the NRHP:

Criterion A. Be associated with events that have made a significant contribution to the broad patterns of our history.
Criterion B. Be associated with the lives of persons significant to our past.
Criterion C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the
work of a master, or that possess high artistic values, or that represent a significant and distinguishable
entity whose parts may lack individual distinction.
Criterion D. Have yielded, or may yield, information important to prehistory or history.

Criteria used for assessment of potential eligibility for the Washington Heritage Register are similar to NRHP criteria. Criteria to qualify include:

• The resource should have documented historical significance at the local or state level.
• The resource should have a high to medium level of integrity.
• Age of at least 50 years. If newer, the resource should have documented exceptional significance (OAHP n.d.).

The City of Seattle uses the following guidelines for eligibility for identifying Seattle Landmarks. In order to be designated, the building, object, or site must be at least 25 years old and must meet at least one of the six criteria for designation outlined in the Seattle Landmarks Preservation Ordinance (SMC 25.12.350):

A. It is the location of, or is associated in a significant way with, a historic event with a significant effect upon the community, City, state, or nation; or
B. It is associated in a significant way with the life of a person important in the history of the City, state, or nation; or
C. It is associated in a significant way with a significant aspect of the cultural, political, or

economic heritage of the community, City, state or nation; or
D. It embodies the distinctive visible characteristics of an architectural style, or period, or a method of construction; or
E. It is an outstanding work of a designer or builder; or
F. Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the city and contributes to the distinctive quality or identity of such neighborhood or the City.

The Seattle Ship Supply building was determined not eligible for the national register in 2003. However, review of this structure's history on a local scale found that it is significant under Criterion C of the Seattle Landmarks Preservation Ordinance. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the City of Seattle's community, specifically the development of the Fishermen's Terminal. The terminal was the Port's first project encompassed under a comprehensive effort to improve Seattle's harbors. The terminal also provided the first public harbor that could house the region's fishing fleet. The establishment of the terminal had a profound effect on the local community shaping the demographic and economy in addition to creating a major fishing industry hub in Seattle, which in turn created thousands of jobs and generates millions of dollars in income and tax revenue. While the terminal was completed in 1914, it was much smaller than present with only a single warehouse visible in historic photographs. Over the following century, the terminal expanded as dredge material was used to create the surrounding landform. Presently, the Seattle Ship Supply building is the oldest structure listed within the terminal.

The Seattle Ship Supply building has undergone numerous modifications over the past 99 years, which have contributed the loss of the structure's integrity. However, the age of the structure dates to four years after the construction of the terminal. In 1937, Captain Olaf O. Hvatum, a Ballard fisherman, started the Seattle Ship Supply Company to provide supplies to the fishermen. The Seattle Ship Supply Company continued to operate from this location until sometime before 2003. The Seattle Ship Supply building retains integrity of location, setting, feeling, and association. It is therefore eligible as Seattle Landmark under Criterion C.

Physical description: The Seattle Ship Supply building (C-9) is one of the oldest structures (1918) on the Fishermen s Terminal site. The form of the Ship Supply building is a classical basilica which has a central two story nave, 55 feet wide by 90 feet long with a gable roof (8:12 slope), which is flanked by two side shed (4:12 slopes) structures 24 feet by 90 feet long. The main central structure and two side bays are heavy timber construction. The building was remodeled by the Seattle firm Carlson-Evey-Grevstad in 1953. The architects were known as modernists and did projects for the University of Washington and the Seattle Public Schools. Their remodel design has greatly reduced the integrity of the original structure. There are no extant drawings and only suppositions can be made about the foundation, the original window placement and other aspects of the building.

Unlike a basilica which would place the entry on the east or west elevations, the north elevation is the public entry. The entry, centered on the elevation, has two distinctive vertical board doors with a stylized rounded marine window and hardware inserted into it. The entry is protected by a canopy that projects 5 feet out from the face of the building. The north wall has been reconfigured with large storefront windows that have a 24 inch sill with 7 feet high glazing that go across the entire facade and continues 18 feet around the east and west corners. All the non-glazed surfaces are covered in stucco which replaced the former corrugated metal panels and discrete wood windows. The second story element above the entry is set back 24 feet from the facade and has eight 4

feet 6 inch square 25 lite wood fixed windows. The upper wall is clad in corrugated metal siding.

The east and west elevations have three elements, a central two story bay flanked symmetrically by two one-story sheds 24 feet wide with 3:12 slopes up to the central bay. The central bay has the original corrugated metal siding set above the approximately 15 feet high line formed by the front elevation. Everything below the line is stucco, everything above is covered by the original 2 feet wide corrugated metal panels. The second floor has nine 6 over 6 double hung wood windows each approximately 3 feet wide by 6 feet high. Some of the second story windows are covered with translucent corrugated panels. A gable roof with an 8:12 slope runs the entire 90 feet of the central space.

The south elevation has remained least changed, with the walls covered in the original corrugated metal siding. Some windows have been covered over but it is unclear when the work was done. The major remodel by Carlson-Evey-Grevstad in 1953 did not include a south elevation but there are indications in the wall that windows have been covered over or removed.

The interior of the structure has many areas covered over by later remodels. The central space of the building is accessible via stairway to the second floor which opens to the roof structure. The roof is supported by four trusses spaced 12 feet from the east and west walls and with three equally spaced trusses (approximately 24 feet on center) between them making a total of 4 trusses for the roof. Top and bottom chords and the webs of the trusses are made of 8 inch members connected to the chords by steel truss plates and 7 equally spaced steel screw rods. The trusses rest on 8 inch columns which are connected by diagonal 3x bracing to the bottom and top chords. The top chords of the trusses support 4x purlins spaced 4 feet on center. The exterior steel roof panels are attached directly to the purlins and appear to be relatively recent and not part of the original. The east and west end walls are made of typical 2x framing but are covered with vertical 1x boards. The other two walls (north and south) are typical framing with no boards, the corrugated metal siding attaches directly to the framing.

Two continuous truss structures span between the columns on both sides (north and south) of the shed wings and act as bracing for the high central space and connect the wings (aisles) to the central (nave) volume. The two (north and south) shed extensions are each approximately 24 feet deep and have 1/2 trusses every 12 feet made up of 4x chords and 2x webs. The metal roof panels are attached to regularly spaced 2x purlins.

Bibliography:

Duwamish Tribe
2011 Culture and History. Electronic resource, http://www.duwamishtribe.org/, accessed April 12, 2017.

Johnson, Larry E.
n.d. Historic Property Inventory Form, Historic Fishermen's Terminal – South Bulkhead Wall. On file at DAHP, Olympia.

National Park Service (NPS)
2002 How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15. U.S. Department of the Interior, National Park Service, Washington, D.C Electronic resource, https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm, accessed April 6, 2017.

Oldham, Kit
2012 Seattle's Fishermen's Terminal is dedicated on January 10, 1914. Electronic resource, http://www.historylink.org/File/10020, accessed April 10, 2017.

United States Surveyor General (USSG)
1855 General Land Office Map, Township 25 N., Range 03 E, Willamette Meridian. Electronic resource, https://www.blm.gov/or/landrecords/survey/yPlatView1_2.php?path=PWA&name=t250n030e_001.jpg, accessed April 5, 2017.
1863 General Land Office Map, Township 25 N., Range 03 E, Willamette Meridian. Electronic resource, https://www.blm.gov/or/landrecords/survey/yPlatView1_2.php?path=PWA&name=t250n030e_002.jpg, accessed April 5, 2017.

Williams, David B.
2017 Lake Washington Ship Canal (Seattle). Electronic resource, http://historylink.org/File/1444, accessed April 10, 2017.

Wilma, David
2001 Seattle Neighborhoods: Interbay — Thumbnail History. Electronic resource, http://historylink.org/File/3418, accessed April 10, 2017.

Attachment C. Inadvertent Discovery Protocol.

Protocols for Discovery of Archaeological Resources
In the event that archaeological resources are encountered during project implementation, the following actions will be taken:

In the find location, all ground disturbing activity will stop. The find location will be secured from any additional impacts and the supervisor will be informed.

The project proponent will immediately contact the agencies with jurisdiction over the lands where the discovery is located, if appropriate. The appropriate agency archaeologist or the proponent's contracting archaeologist will determine the size of the work stoppage zone or discovery location in order to sufficiently protect the resource until further decisions can be made regarding the work site.

The project proponent will consult with DAHP regarding the evaluation of the discovery and the appropriate protection measures, if applicable. Once the consultation has been completed, and if the site is determined to be NRHP-eligible, the project proponent will request written concurrence from the agency or tribe(s) that the protection and mitigation measures have been fulfilled. Upon notification of concurrence from the appropriate parties, the project proponent will proceed with the project.

Within six months after completion of the above steps, the project proponent will prepare a final written report of the discovery. The report will include a description of the contents of the discovery, a summary of consultation, and a description of the treatment or mitigation measures.

Protocols for Discovery of Human Remains
If human remains are found within the project area, the project proponent, its contractors or permit-holders, the following actions will be taken, consistent with Washington State RCWs 68.50.645, 27.44.055, and 68.60.055:

If ground-disturbing activities encounter human skeletal remains during the course of construction then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance. The project proponent will prepare a plan for securing and protecting exposed human remains and retain consultants to perform these services. The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to DAHP, which will then take jurisdiction over the remains. DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any

appropriate cemeteries and the affected tribes. DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Primary Contacts

Duwamish Tribe
4705 West Marginal Way SW
Seattle, WA 98106
Primary Contact: Cecile Hanson, Chair, 206-431-1582

Muckleshoot Indian Tribe
39015 172nd Ave SE
Auburn, WA 98092
Primary Contact: Laura Murphy, Archaeologist/Cultural Resources, 253-876-3272

Snoqualmie Indian Nation
PO Box 969
Snoqualmie, WA 98065
Primary Contact: Steven Mullen-Moses, Director of Archaeology and Historic Preservation, 425-495-6097

Suquamish Tribe
PO Box 498
Suquamish, WA 98392-0498
Primary Contact: Dennis Lewarch, THPO Cultural Resources, 360-394-8529

Tulalip Tribe
6410 23rd Avenue NE
Tulalip, WA 98271
Primary Contact: Richard Young, Cultural Resources, 360-716-2652

Washington Department of Archaeology and Historic Preservation
PO Box 48343
Olympia, WA 98504-8343
Lead Representative: Allyson Brooks, State Historic Preservation Officer, 360-586-3066
Primary Contact: Gretchen Kaehler, Local Government Archaeologist, 360-586-3088, cell: 360-628-2755
Primary Contact for Human Remains: Guy Tasa, State Physical Anthropologist, 360-586-3534, cell: 360-790-1633

King County Medical Examiner
908 Jefferson Street
Seattle, WA 98104
Primary Contact: Richard Harruff, Medical Officer, 206-731-3232

King County Sheriff
516 Third Avenue, Room W-116
Seattle, WA 98104-2312
Primary Contact: John Urquhart, Sheriff, 206-296-3311

APPENDIX C

Transportation Impact Analysis

transpogroup
WHAT TRANSPORTATION CAN BE.

MEMORANDUM

Date:	July 14, 2017	**TG:**	1.16075.01
To:	Matthew Mateo – Port of Seattle		
From:	Stefanie Herzstein – Transpo Group		
cc:	Gretchen Brunner – EA Engineering, Science, and Technology, Inc., PBC		
Subject:	Port of Seattle Fishermen's Terminal Gateway, West Wall, and Seattle Ship Supply Improvement Project Traffic Analysis		

The Port of Seattle is planning to redevelop three areas of Fishermen's Terminal. The purpose of this memorandum is to provide an evaluation of on-site and surrounding transportation conditions for incorporation into the proposed project's State Environmental Policy Act (SEPA) checklist. The following documents the project description, transportation network, trip generation, traffic volumes, traffic operations, and parking for the proposed redevelopment.

Project Description

The proposed project is located at Fishermen's Terminal, which is north of W Emerson Place between 15th Avenue W and 21st Avenue W. The proposed project would develop three areas of the Terminal: Gateway, West Wall, and Seattle Ship Supply. Table 1 summarizes the proposed land use by area.

Table 1. Summary of Fishermen's Terminal Redevelopment Land Use

	Development Sites			
Land Use	**Gateway**	**West Wall**	**Seattle Ship Supply**	**Total**
Proposed Development				
Marine Sales & Services	21,000 sf	-	-	21,000 sf
Marine Sales & Services – Accessory Office	10,250 sf	-	13,000 sf	23,250 sf
Marine Sales & Services – Accessory Warehouse	55,000 sf	-	13,000 sf	68,000 sf
Light Industrial	-	48,200 sf	-	48,200 sf
Exterior Storage	-	33,000 sf	-	33,000 sf
Total	**86,250 sf**	**81,200 sf**	**26,000 sf**	**193,540 sf**
Existing Use to be Renovated[1]	-	-	18,000 sf	18,000 sf
Demolition[2]	26,410 sf	-	-	26,410 sf
Net New Development	***59,840 sf***	***81,200 sf***	***8,000 sf***	***149,040 sf***

sf = square-feet
1. The existing Seattle Ship Supply would be renovated and expanded by 8,000 sf. The land use is assumed to be half marine sales and services accessory office and half warehouse.
2. The existing uses that would be demolish include a drive-in bank and warehouse.

As shown in Table 1, a total of 149,040 new square-feet would be developed. Within the Gateway area, 3 existing buildings would be demolished including a 3,370 square-feet drive-in bank and 2 "Net-Shed" buildings totaling approximately 23,040 square-feet. The Seattle Ship Supply would include up to an 8,000 square-foot addition and renovation of the 18,000 square-foot building for a total of 26,000 square-feet.

The proposed project would not change the Terminal access. There are three access points including the main access via the 19th Avenue W/W Emerson Place, an access along 21st Avenue W, and an industrial-user access via 16th Avenue W. The proposed project would be constructed and occupied by 2020. Figure 1 illustrates the preliminary site plan.

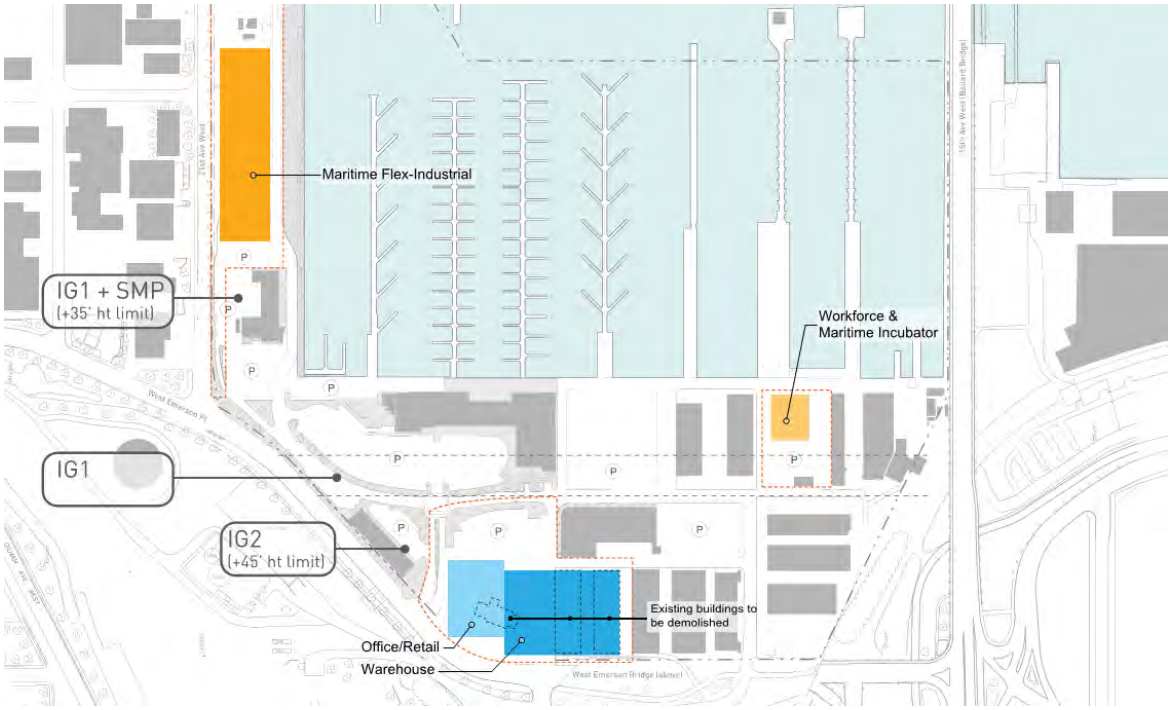


Figure 1. Preliminary Site Plan

Transportation Network

Fishermen's Terminal is in an industrial area of Seattle. The following section provides a summary of the transportation system in the immediate vicinity of the Terminal.

Street System

W Emerson Place is classified as a principal arterial by the City of Seattle. It has four travel lanes, no parking and no designated bicycle facilities. Sidewalks are provided on both sides.

21st Avenue W is classified as a collector arterial by the City of Seattle. This street provides access to west side of Fishermen's Terminal. It has two travel lanes and no non-motorized facilities. Parking on the east side occurs within the gravel shoulder and parking on the west side occurs within the paved shoulder where there are no driveway curb cuts. The intersection of W Emerson Place/21st Avenue W is signalized with pedestrian crossings.

19th Avenue W is classified as a local street by the City of Seattle. This street provides the primary access to Fishermen's Terminal. There are two outbound lanes and one inbound lane along 19th Avenue W. The intersection of W Emerson Place/19th Avenue W is signalized with pedestrian crossings. Sidewalks are provided on both sides of 19th Avenue W.

Non-motorized

There are sidewalks along W Emerson Place and 19th Avenue W as well as sidewalks along internal streets and crosswalks at key locations within the Terminal. The Emerson Street Bike Trail runs along the south side of W Emerson Place with a Terminal connection at 19th Avenue W. The Emerson trail also connects to the Ship Canal Trail near 15th Avenue W and results in the Terminal having bicycle connectivity to other areas of Seattle. In addition, there are staircases at the W Emerson Street/ 15th Avenue W intersection to provide access at 15th Avenue W for pedestrians.

The Adopted Seattle Bicycle Master Plan, April 2014 recommends a protected bicycle lane along W Emerson Place between Gilman Avenue W and 21st Avenue W connecting to the existing Emerson Street Bike Trail. In addition, an in-street bicycle lane is recommended along 21st Avenue W.

Transit

There are two transit routes operated by King County Metro near the site. The nearest transit stop is along W Emerson Place approximately 750 feet to the west of the 19th Avenue W entrance to the Terminal. Depending on the location within the Terminal, the transit stop is an approximate 3- to 10-minute walk. This transit stop is served by Route 31, which provides service between Magnolia and the University District. There are also stops in the Queen Anne and Fremont neighborhoods as well as Seattle Center and Seattle Children's Hospital. Service is provided on weekdays from approximately 6 a.m. to 8 p.m. with 30-minute headways during the commute period. This route also operates on Saturdays from approximately 8 a.m. to 7 p.m. with 30-minute headways during the peak periods.

The Terminal is also served by RapidRide D Line, which operates along 15th Avenue W approximately 1,500-feet to the east of the 19th Avenue W entrance. Depending on the location within the Terminal, the transit stop is an approximate 7- to 15-minute walk. The D Line provides service between Crown Hill and Downtown with stops in the Ballard, Magnolia, Interbay, Queen Anne and Uptown neighborhoods. The route operates on weekdays and weekends between approximately 5 a.m. and 4 a.m. Peak period headways are 7-minutes on weekdays and 15-minutes on weekends.

Trip Generation

Weekday daily, AM, and PM peak hour trip generation was estimated based on the Institute of Transportation Engineers (ITE) in *Trip Generation Manual* (9th Edition, 2012). There is no specific land use category for Marine Sales and Services in the ITE *Trip Generation Manual*; therefore, average trip rates for Specialty Retail (#826), General Office (#710), and Warehouse (#150) were applied. In addition, average trips rates for General Light Industrial (#110) were also applied. Warehouse includes associated office; therefore, for the Gateway site trip generation was based on a 65,250 square-foot warehouse inclusive of the proposed 55,000 square-foot warehouse and 10,250 square-foot accessory office. For the West Wall, the proposed exterior storage is associated with the light industrial use; therefore, a separate trip generation is not calculated since light industrial trip generation would include the exterior space. The West Wall proposed land use was assumed to be 48,200 square-feet of general light industrial, which accounts for the associated exterior space.

Credit was taken for the existing uses that would be demolished or where there would be a change in use with the renovation. Trip generation for the existing uses was estimated based on the average trip rates for Drive-in Bank (Land Use 912), Warehouse (Land Use 150), and General Light Industrial (Land Use 110) land use categories. Table 2 provides a summary of the estimated trip generation. Detailed trip generation calculations by development site are provided in Attachment 1.

Table 2. Estimated Weekday Trip Generation

Land Use	Size	Daily Trips		AM Peak Hour Trips				PM Peak Hour Trips			
		Rate	Total	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Uses											
Marine Sales & Services: Accessory Warehouse (LU #150)	65.25 ksf	3.56	230	0.30	16	4	20	0.32	5	16	21
Marine Sales & Services: Accessory Office (LU #710)	13.00 ksf	11.03	140	1.56	18	2	20	1.49	3	16	19
Marine Sales & Services (LU #826)	21.00 ksf	44.32	930	6.84	69	75	144	2.71	25	32	57
General Light Industrial (LU #110)	61.20 ksf	3.97	430	0.92	50	6	56	0.97	8	52	60
Proposed Subtotal			*1,730*		*153*	*87*	*240*		*41*	*116*	*157*
Existing											
Warehouse (LU #150)	23.04 ksf	3.56	500	0.30	6	1	7	0.32	2	5	7
General Light Industrial (LU #110)	18.00 ksf	3.97	130	0.92	15	2	17	0.97	2	15	17
Drive-in Bank (LU #912)	3.37 ksf	148.15	80	12.08	23	18	41	24.30	41	41	82
Existing Subtotal			*710*		*44*	*21*	*65*		*45*	*61*	*106*
Net New Trips			***1,020***		***109***	***66***	***175***		***-4***	***55***	***51***

Notes: ksf = thousand square feet
1. Trips rates from ITE *Trip Generation Manual*, 9th Edition per the LU number identified.

As shown in Table 2, the redevelopment is anticipated to generate 1,020 net new daily trips with approximately 175 occurring during the AM peak hour and 51 occurring during the PM peak hour. The localized urban characteristics typically considered for Seattle projects were not assumed in estimating trip generation due to the industrial nature of the site. Although it is anticipated that vehicles would be the primary mode of travel to the site, there would be some transit and non-motorized travel given the connectivity and access described in the Transportation Network discussion. The trip generation estimate is conservative since it does not account for potential travel by other modes due to the urban setting and the traditional retail ITE trip rate applied is likely higher than typical Marine Sales and Services.

Trip Distribution

Trip distribution patterns for the proposed project were estimated based on the US Census's Bureau *OnTheMap* tool and existing travel patterns. *OnTheMap* is a web-based mapping and reporting application, which shows where workers are employed and where they live based on census data. Based on the *OnTheMap* data and existing traffic patterns, approximately 15 percent of trips are expected to be to/from the west on West Emerson Place and the remaining 85 percent to/from the east. For the trips to and from the east, approximately 45 percent are anticipated to be to/from the north along 15th Avenue W, 25 percent to/from the south on 15th Avenue W, and the remaining 15 percent to/from the east on W Nickerson Street. The project trip distribution and assignment is shown on Figure 2.

It is anticipated that 85 percent of the traffic would be to and from the east along W Emerson Place and most of the traffic generated by the redevelopment would be for sites on the east side of the Terminal. Therefore, based on the location of the redevelopment and travel patterns, use of the 21st Avenue W access by the proposed project would likely be limited. Some traffic from the West Wall site may use 21st Avenue W; however, it would be out of direction considering travel mainly along W Emerson Place. This weekday peak hour traffic analysis assumes all trips would use either 19th Avenue W or 16th Avenue W to access the Terminal. The 21st Avenue W/W Emerson Place intersection is signalized and would accommodate increases in traffic generated by the redevelopment.

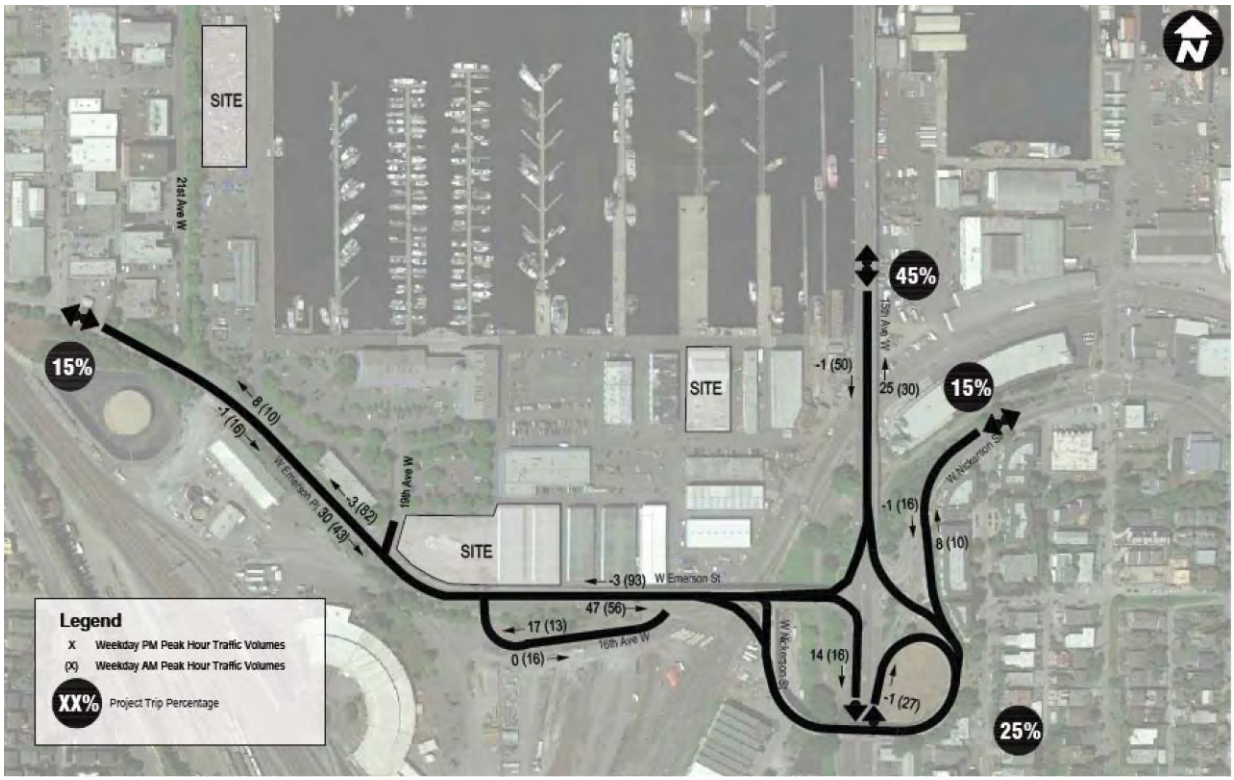


Figure 2. Weekday Peak Hour Project Trip Distribution and Assignment

Given the identified travel patterns and trip assignment, weekday AM and PM peak hour traffic volume and operations analysis was conducted at the following intersections:

- 19th Avenue W/W Emerson Place (Signalized)
- 16th Avenue W/W Emerson Place (Two-Way Stop Controlled)
- W Nickerson Street/W Emerson Place (All-Way Stop Controlled)

Traffic Volumes

Existing traffic volumes were collected on a typical weekday in April 2017. Existing traffic counts are provided in Attachment 2. Future 2020 without-project traffic volumes were forecasted by applying an annual growth rate of 2 percent to the existing traffic volumes. Traffic from the existing drive-in bank was also added since this use is not currently occupied but could be reoccupied without development. The project trips were added to the future without-project volumes to form the basis of the with-project analysis. Existing and future 2020 traffic volumes are illustrated on Figure 3.

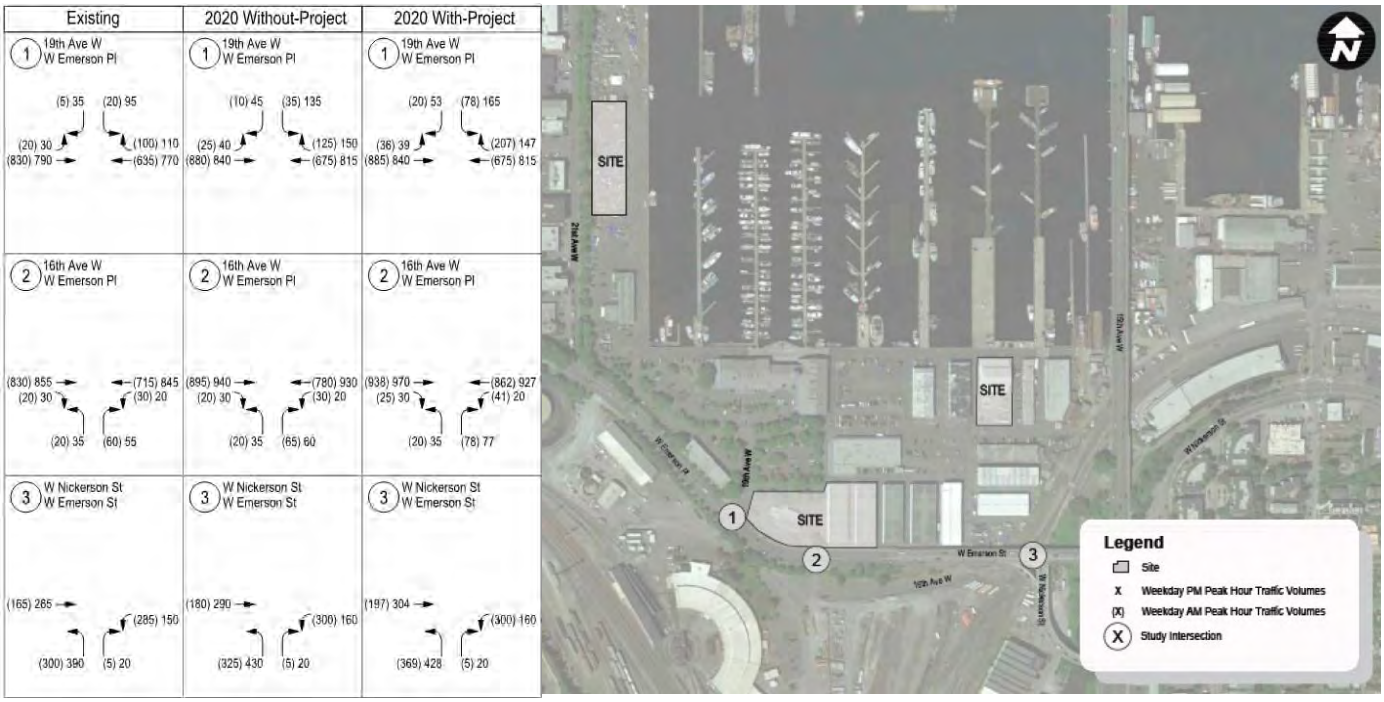


Figure 3. Weekday Peak Hour Traffic Volumes

Traffic Operations

The operational characteristics of an intersection are determined by calculating the intersection's level of service (LOS). For signalized and all-way stop locations, LOS is measured in average delay per vehicle and is reported for the intersection as a whole. For two-way stop controlled intersections, average delay is reported for the worst movement or approach. Traffic operations for an intersection can be described alphabetically with a range of levels of service (LOS A through F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays.

Weekday AM and PM Peak hour traffic operations for existing and future (2020) conditions were evaluated at the study intersections based on the procedures identified in the *Highway Capacity Manual (HCM)* and using the *Synchro 9* software program. The City of Seattle's Comprehensive Plan does not define a LOS standard for individual intersections; however, the City generally recognizes LOS E and F as poor operations for signalized locations and LOS F for unsignalized locations. The future without and with-project traffic operations were compared to evaluate potential impacts of the proposed redevelopment. Detailed LOS worksheets are provided in Attachment 3. Table 3 summarizes the existing and future intersection operations.

Table 3. Intersection Level of Service Summary

Intersection	Existing			2020 Without-Project			2020 With-Project		
	LOS[1]	Delay[2]	WM[3]	LOS[1]	Delay[2]	WM[3]	LOS[1]	Delay[2]	WM[3]
Weekday AM Peak Hour									
19th Ave W / W Emerson Pl[4]	A	4	-	A	4	-	A	5	-
16th Ave W / W Emerson Pl	C	24	NB	D	28	NB	D	35	NB
W Nickerson St / W Emerson Pl	B	13	NB	B	14	NB	C	16	-
Weekday PM Peak Hour									
19th Ave W / W Emerson Pl[4]	A	5	-	A	7	-	A	7	-
16th Ave W / W Emerson Pl	D	31	NB	E	39	NB	E	42	NB
W Nickerson St / W Emerson Pl	B	15	NB	C	17	NB	C	18	-

1. Level of service, based on 2010 Highway Capacity Manual methodology.
2. Average intersection delay in seconds per vehicle.
3. Worst movement reported for unsignalized intersections.
4. Analyzed in HCM 2000. Intersection configuration and signal timing settings not compatible in HCM 2010.

As shown in the table, under existing conditions the study intersections operate at LOS D or better during both the weekday AM and PM peak hours. Under future 2020 conditions without and with the proposed project, all the intersections would continue to operate at LOS D or better except the 16th Avenue W/W Emerson Place intersection. The northbound approach of this intersection would degrade from LOS D in existing conditions to LOS E under future 2020 conditions during the weekday PM peak hour. The addition of project traffic at the 16th Avenue W/W Emerson Place intersection would increase delay by 3 seconds during the weekday PM peak hour compared to the without project conditions. For intersections already operating at LOS E or F, the City typically does not consider an impact significant when delays increase by less than 5 seconds. In addition, as described previously, generally the City considers LOS F as poor operations at an unsignalized intersection.

Transportation Concurrency

The City of Seattle has implemented a Transportation Concurrency system to comply with one of the requirements of the Washington State Growth Management Act (GMA). The system, described in the DPD *Director's Rule 5-2009* and the City's Land Use and Zoning Code, is designed to provide a mechanism that determines whether adequate transportation facilities would be available "concurrent" with proposed development projects.

The screenlines closest to the project site were chosen for review. Screenlines are imaginary lines drawn across primary roadways to monitor traffic going from one side to the other. The screenlines that were analyzed for concurrency review include Magnolia (Screenline 2) and Ship Canal Ballard Bridge (Screenline 5.11), as shown in Table 4. As a conservative estimate, it was assumed that all project-generated traffic traveling in the direction of the screenlines would extend across the screenlines included in this analysis.

Table 4. Transportation Concurrency Analysis

SL#[1]	Location	Dir[2]	Capacity	2008 Volume	Project Traffic	V/C Ratio w/ Project	LOS Standard
2	Magnolia	EB	4,300	611	0	0.14	1.00
		WB	4,300	1,141	8	0.27	1.00
5.11	Ship Canal Ballard Bridge	NB	2,800	2,994	25	1.08	1.20
		SB	2,800	1,965	0	0.70	1.20

1. SL# = Screenline Number
2. Direction: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

The transportation concurrency analysis indicates that with traffic generated by the project, the screenlines would have v/c ratios that are less than the City v/c threshold; thus, the project would meet the City's concurrency requirements.

Parking

There are 969 parking spaces within the Fishermen's Terminal. The parking includes short-term and long-term restricted parking as well as unrestricted parking. The proposed redevelopment of the Gateway site would remove 100 parking spaces resulting in a total of 869 spaces on-site. In addition, the proposal includes construction of 20 on-street parking spaces along 21st Avenue W. It is assumed that parking would continue to be shared on-site. This analysis assumes no additional on-site parking spaces would be provided. The following describes the parking availability and future parking demand for the Terminal with the proposed project.

Availability

A parking study was conducted on a weekday in July 2017 at 11 a.m.[1] to determine the existing peak parking demand for the Terminal. Summer is the peak commercial fishing season and the parking count was conducted on a day when the fishermen were on a trip; therefore, the July count captures peak Terminal activity. Parking within the Terminal is provided in designated parking lots as well as scattered informally near buildings. The peak parking demand counts focused on available parking spaces in designated lots within the Terminal. Available spaces are those that are empty and not currently occupied; these spaces would be available for future parking. The data collection also included parking type. Table 5 provides a summary of peak hour parking by parking type.

Table 5. Peak Hour Parking Summary

Type	Supply	Available Spaces[1]	Occupied Spaces
2-Hour	200	126	74
8-Hour	276	30	246
24-Hour	89	60	29
3-Day	375	118	257
Tenants Only	29	8	21
Total	**969**	**342**	**627**

1. Based on parking counts conducted at 11 a.m. on-site in July 2017. This represents spaces currently not occupied by a vehicle that would be available for parking.

As shown in Table 5, there are 342 available spaces during the peak hour. When considering available parking supply for the proposed project, the "Tenants Only" parking was excluded resulting in a total of 334 available spaces. In addition, for the proposed uses, short-term (2-hour) parking was assumed to only be viable for marine sales and services while the remaining uses would need long-term parking (8-hour, 3-day, or 24-Hour). This results in 126 available spaces for the proposed marine services and sales and 216 available spaces for the other proposed uses.

As described previously, the proposal would remove 100 parking spaces. The spaces being removed allow for parking for 8-hours or more. The resulting available parking is 126 2-hour spaces and 116 other spaces. Approximately 40 3-day parking spaces were unavailable because they were covered by pallets or temporary construction. The Port would remove the pallets if this parking was needed to accommodate future parking demand.

[1] Based on hourly demand percentages for Warehousing land use per *Parking Generation Handbook*, 4th Edition (ITE).

Future Demand

Shared parking demand was estimated based on the average rates in *Parking Generation Handbook*, 4th Edition (ITE). The land use assumptions are consistent with the trip generation discussion. Consideration was given to the existing Net Sheds that would be removed and the renovation of the Seattle Ship Supply warehouse. Detailed shared parking calculations for the redevelopment are provided in Attachment 4. Table 6 provides a summary of the estimate peak hour shared parking demand for the proposed project. The table also indicates what type of parking on-site could be utilized to serve the parking needs.

Table 6. Estimated Peak Hour Shared Parking Demand Summary

Land Use	Size	Shared Demand (vehicles)[1]	Type
Existing Uses to be Removed			
General Light Industrial	18,000 sf	10	8 Hours or more
Warehouse (Net Shed Buildings)	23,040 sf	12	8 Hours or more
Proposed			
Marine Sales & Services	21,000 sf	49	2-Hour
Marine Sales & Services Accessory Office	13,000 sf	31	8 Hours or more
Marine Sales & Services Accessory Warehouse	65,250 sf	33	8 Hours or more
General Light Industrial	61,200 sf	34	8 Hours or more
Net 2-Hour Parking Demand		**49**	**2-Hour**
Net 8-Hour Parking Demand		**76**	**8 Hours or more**

1. Based on average rates and hourly distributions from Institute of Transportation Engineers *Parking Generation*, 4th Edition (2010), the peak parking demand for the site would occur at 11 a.m.

As shown in the table, during the peak hour, the parking demand is anticipated to increase by 49 vehicles for the 2-hour parking and 76 vehicles for other parking spaces. The 2-hour parking has 126 available spaces, which could accommodate the anticipated 49 vehicles associated with the proposed marine sales and services accessory retail. The available parking on-site for the other uses is 116 spaces, which would fully accommodate the 76 vehicles anticipated for the accessory office, warehouse, and light industrial uses on-site.

Conclusion

The proposed redevelopment is anticipated to generate 1,020 net new daily trips with approximately 175 occurring during the AM peak hour and 51 occurring during the PM peak hour. The analysis shows the existing off-site transportation system would accommodate the proposed redevelopment.

The existing parking on-site would fully accommodate the proposed project parking demand even with the loss of 100 parking spaces due to redevelopment. As discussed previously, there are spaces currently covered by pallets and construction, the Port would uncover these covered spaces as parking needs increase.

Attachment 1 - Fishermen's Terminal Redevelopment Trip Generation

Land Use[1]	Size	Trip Rate[2]	Trips Inbound	Trips Outbound	Trips Total
Daily					
Proposed Use					
Gateway Site					
Marine Sales & Services Warehouse (LU 150)[3]	65,250 sf	3.56 trips/ksf	115	115	230
Marine Sales & Services (LU 826)	21,000 sf	44.32 trips/ksf	465	465	930
Subtotal	86,250 sf		580	580	1160
West Wall					
General Light Industrial (LU 110)	48,200 sf	6.97 trips/ksf	170	170	340
Exterior Storage[4]	33,000 sf	0.00 trips/ksf	0	0	0
Subtotal	81,200 sf		170	170	340
Seattle Ship Supply Site					
General Light Industrial (LU 110)	13,000 sf	6.97 trips/ksf	45	45	90
Marine Sales & Services Accessory Office (LU 710)	13,000 sf	11.03 trips/ksf	70	70	140
Subtotal	26,000 sf		115	115	230
Total Proposed Use	*193,450 sf*		*865*	*865*	*1730*
Existing Use					
Drive-in Bank (LU 912)	3,370 sf	148.15 trips/ksf	250	250	500
General Light Industrial (LU 110)	18,000 sf	6.97 trips/ksf	65	65	130
Warehouse (LU 150)	23,040 sf	3.56 trips/ksf	40	40	80
Subtotal	44,410 sf		355	355	710
Net New Total	***149,040 sf***		***510***	***510***	***1020***
Weekday AM Peak Hour					
Gateway Site					
Marine Sales & Services Warehouse (LU 150)[3]	65,250 sf	0.30 trips/ksf	16	4	20
Marine Sales & Services (LU 826)[5]	21,000 sf	6.84 trips/ksf	69	75	144
Subtotal	86,250 sf		85	79	164
West Wall					
General Light Industrial (LU 110)	48,200 sf	0.92 trips/ksf	39	5	44
Exterior Storage[4]	33,000 sf	0.00 trips/ksf	0	0	0
Subtotal	81,200 sf		39	5	44
Seattle Ship Supply Site					
General Light Industrial (LU 110)	13,000 sf	0.92 trips/ksf	11	1	12
Marine Sales & Services Accessory Office (LU 710)	13,000 sf	1.56 trips/ksf	18	2	20
Subtotal	26,000 sf		29	3	32
Total Proposed Use	*193,450 sf*		*153*	*87*	*240*
Existing Use					
Drive-in Bank (LU 912)	3,370 sf	12.08 trips/ksf	23	18	41
General Light Industrial (LU 110)	18,000 sf	0.92 trips/ksf	15	2	17
Warehouse (LU 150)	23,040 sf	0.30 trips/ksf	6	1	7
Subtotal	44,410 sf		44	21	65
Net New Total	***149,040 sf***		***109***	***66***	***175***

Attachment 1 - Fishermen's Terminal Redevelopment Trip Generation

Land Use[1]	Size	Trip Rate[2]	Trips Inbound	Trips Outbound	Trips Total
Weekday PM Peak Hour					
Gateway Site					
Marine Sales & Services Warehouse (LU 150)[3]	65,250 sf	0.32 trips/ksf	5	16	21
Marine Sales & Services (LU 826)	21,000 sf	2.71 trips/ksf	25	32	57
Subtotal	86,250 sf		30	48	78
West Wall					
General Light Industrial (LU 110)	48,200 sf	0.97 trips/ksf	6	41	47
Exterior Storage[4]	33,000 sf	0.00 trips/ksf	0	0	0
Subtotal	81,200 sf		6	41	47
Seattle Ship Supply Site					
General Light Industrial (LU 110)	13,000 sf	0.97 trips/ksf	2	11	13
Marine Sales & Services Accessory Office (LU 710)	13,000 sf	1.49 trips/ksf	3	16	19
Subtotal	26,000 sf		5	27	32
Total Proposed Use	193,450 sf		41	116	157
Existing Use					
Drive-in Bank (LU 912)	3,370 sf	24.30 trips/ksf	41	41	82
General Light Industrial (LU 110)	18,000 sf	0.97 trips/ksf	2	15	17
Warehouse (LU 150)	23,040 sf	0.32 trips/ksf	2	5	7
Subtotal	44,410 sf		45	61	106
Net New Total	***149,040 sf***		***-4***	***55***	***51***

Notes:

1. There is no Marine Sales & Services land use category in the Institute of Transportation Engineers *Trip Generation Manual*, 9th Edition; therefore, warehouse (LU 150), retail (LU 826) and office (LU 710) were used.

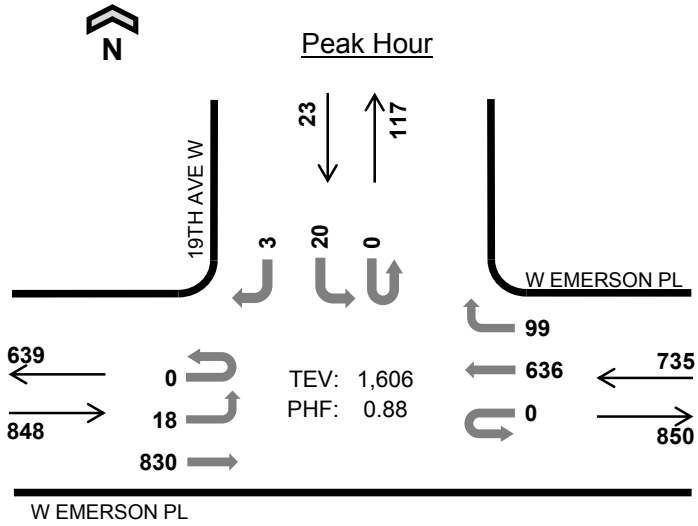
2. Average trips rates from ITE *Trip Generation Manual*, 9th Edition per land use number identified.

3. Warehouse use include supporting office use.

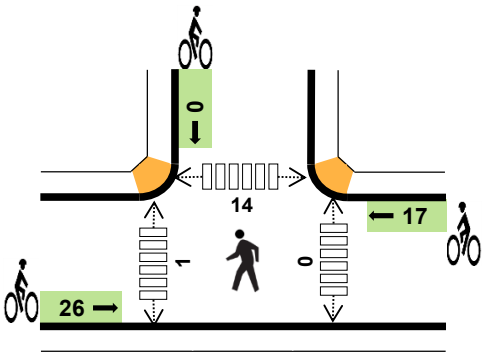
4. Exterior storage is ancillary to the general light industrial and not anticipated to generate separate trips.

5. The trip generation was based on the Specialty Retail (LU 826) for the AM peak hour of the generator. This estimate of trips during the AM peak hour may be conservative since the peak hour of the generator (retail) likely occurs after the AM peak hour commute.

19TH AVE W
W EMERSON PL



Date: Thu, Apr 13, 2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	1.8%	0.88
WB	1.9%	0.88
NB	-	-
SB	8.7%	0.82
TOTAL	1.9%	0.88

Two-Hour Count Summaries

Interval Start	W EMERSON PL Eastbound				W EMERSON PL Westbound				0 Northbound				19TH AVE W Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	158	0	0	0	165	28	0	0	0	0	0	8	0	1	361	0
7:15 AM	**0**	**5**	**192**	**0**	**0**	**0**	**152**	**30**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**1**	**385**	0
7:30 AM	**0**	**7**	**223**	**0**	**0**	**0**	**143**	**23**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**2**	**403**	0
7:45 AM	**0**	**3**	**237**	**0**	**0**	**0**	**179**	**31**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**455**	1,604
8:00 AM	**0**	**3**	**178**	**0**	**0**	**0**	**162**	**15**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**363**	**1,606**
8:15 AM	0	4	173	0	0	0	162	29	0	0	0	0	0	7	0	2	377	1,598
8:30 AM	0	5	169	0	0	0	150	20	0	0	0	0	0	10	0	3	357	1,552
8:45 AM	0	2	184	0	0	0	203	32	0	0	0	0	0	13	0	2	436	1,533
Count Total	0	30	1,514	0	0	0	1,316	208	0	0	0	0	0	58	0	11	3,137	0
Peak Hour	**0**	**18**	**830**	**0**	**0**	**0**	**636**	**99**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**3**	**1,606**	**0**

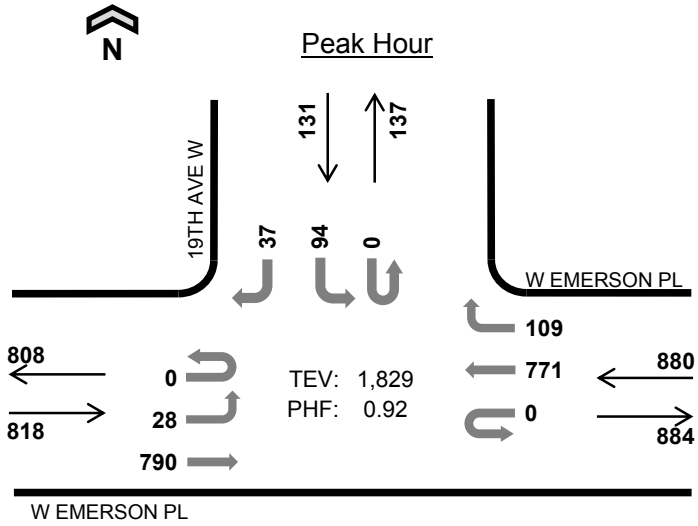
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	2	0	0	*4*	4	2	0	0	*6*	0	0	1	0	*1*
7:15 AM	**0**	**5**	**0**	**1**	*6*	**4**	**4**	**0**	**0**	*8*	**0**	**1**	**3**	**0**	*4*
7:30 AM	**9**	**1**	**0**	**1**	*11*	**11**	**3**	**0**	**0**	*14*	**0**	**0**	**4**	**0**	*4*
7:45 AM	**3**	**4**	**0**	**0**	*7*	**1**	**6**	**0**	**0**	*7*	**0**	**0**	**3**	**0**	*3*
8:00 AM	**3**	**4**	**0**	**0**	*7*	**10**	**4**	**0**	**0**	*14*	**0**	**0**	**4**	**0**	*4*
8:15 AM	3	3	0	0	*6*	10	5	0	0	*15*	0	0	3	0	*3*
8:30 AM	2	2	0	0	*4*	13	4	0	0	*17*	0	0	3	0	*3*
8:45 AM	5	3	0	0	*8*	4	4	0	0	*8*	0	0	1	0	*1*
Count Total	27	24	0	2	*53*	57	32	0	0	*89*	0	1	22	0	*23*
Peak Hr	**15**	**14**	**0**	**2**	*31*	**26**	**17**	**0**	**0**	*43*	**0**	**1**	**14**	**0**	*15*

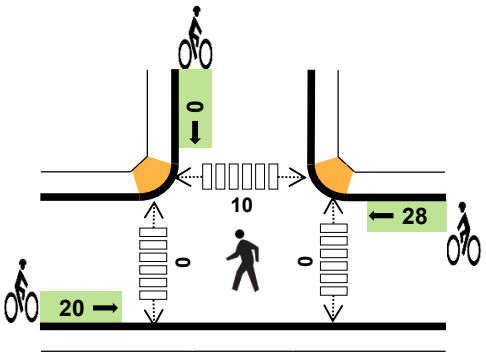
Mark Skaggs: (425) 250-0777

mark.skaggs@idaxdata.com

19TH AVE W
W EMERSON PL



Date: Thu, Apr 13, 2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.1%	0.87
WB	0.5%	0.95
NB	-	-
SB	0.0%	0.78
TOTAL	0.7%	0.92

Two-Hour Count Summaries

Interval Start	W EMERSON PL Eastbound				W EMERSON PL Westbound				0 Northbound				19TH AVE W Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	6	216	0	0	0	181	21	0	0	0	0	0	31	0	10	465	0
4:15 PM	0	7	179	0	0	0	171	24	0	0	0	0	0	18	0	9	408	0
4:30 PM	**0**	**6**	**229**	**0**	**0**	**0**	**186**	**22**	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**11**	**472**	0
4:45 PM	**0**	**7**	**167**	**0**	**0**	**0**	**194**	**38**	**0**	**0**	**0**	**0**	**0**	**25**	**0**	**6**	**437**	1,782
5:00 PM	**0**	**8**	**216**	**0**	**0**	**0**	**200**	**30**	**0**	**0**	**0**	**0**	**0**	**28**	**0**	**14**	**496**	1,813
5:15 PM	**0**	**7**	**178**	**0**	**0**	**0**	**191**	**19**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**6**	**424**	**1,829**
5:30 PM	0	10	160	0	0	0	209	26	0	0	0	0	0	13	0	5	423	1,780
5:45 PM	0	8	160	0	0	0	192	17	0	0	0	0	0	21	0	7	405	1,748
Count Total	0	59	1,505	0	0	0	1,524	197	0	0	0	0	0	177	0	68	3,530	0
Peak Hour	**0**	**28**	**790**	**0**	**0**	**0**	**771**	**109**	**0**	**0**	**0**	**0**	**0**	**94**	**0**	**37**	**1,829**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	0	0	*1*	3	3	0	0	*6*	0	0	2	0	*2*
4:15 PM	2	1	0	0	*3*	3	3	0	0	*6*	0	0	2	0	*2*
4:30 PM	**2**	**1**	**0**	**0**	***3***	**4**	**5**	**0**	**0**	***9***	**0**	**0**	**5**	**0**	*5*
4:45 PM	**1**	**0**	**0**	**0**	***1***	**2**	**6**	**0**	**0**	***8***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**5**	**2**	**0**	**0**	***7***	**10**	**9**	**0**	**0**	***19***	**0**	**0**	**5**	**0**	*5*
5:15 PM	**1**	**1**	**0**	**0**	***2***	**4**	**8**	**0**	**0**	***12***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	1	0	0	*1*	10	15	0	0	*25*	0	1	3	0	*4*
5:45 PM	2	1	0	0	*3*	6	9	0	0	*15*	0	1	3	0	*4*
Count Total	13	8	0	0	*21*	42	58	0	0	*100*	0	2	20	0	*22*
Peak Hr	**9**	**4**	**0**	**0**	***13***	**20**	**28**	**0**	**0**	***48***	**0**	**0**	**10**	**0**	***10***

Mark Skaggs: (425) 250-0777

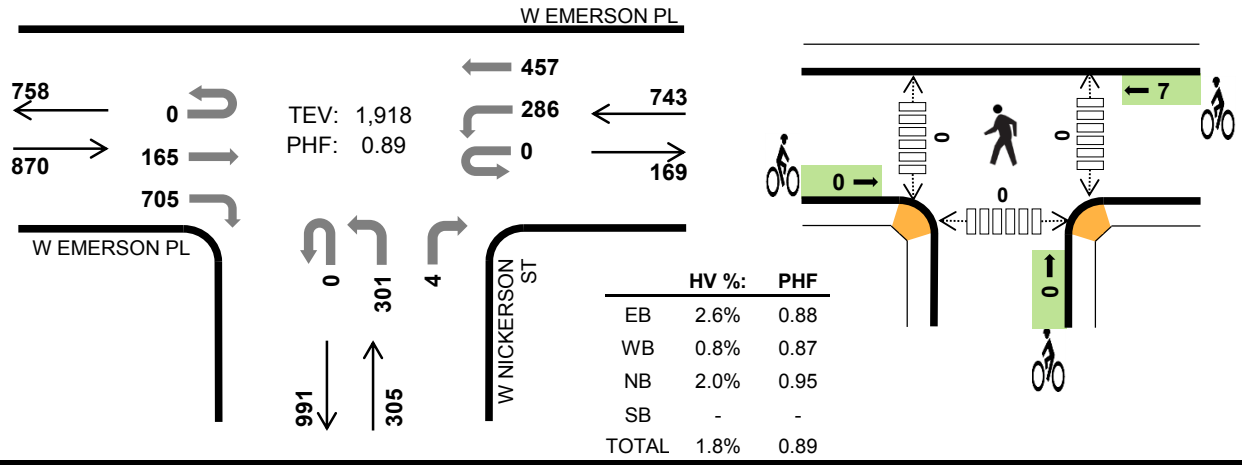
mark.skaggs@idaxdata.com

W NICKERSON ST
W EMERSON PL

N

Peak Hour

Date: Thu, Apr 13, 2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	2.6%	0.88
WB	0.8%	0.87
NB	2.0%	0.95
SB	-	-
TOTAL	1.8%	0.89

Two-Hour Count Summaries

Interval Start	W EMERSON PL Eastbound				W EMERSON PL Westbound				W NICKERSON ST Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	43	131	0	42	106	0	0	90	0	4	0	0	0	0	416	0
7:15 AM	0	0	58	159	0	51	104	0	0	74	0	0	0	0	0	0	446	0
7:30 AM	**0**	**0**	**56**	**178**	**0**	**61**	**99**	**0**	**0**	**69**	**0**	**0**	**0**	**0**	**0**	**0**	**463**	0
7:45 AM	**0**	**0**	**45**	**202**	**0**	**71**	**143**	**0**	**0**	**76**	**0**	**2**	**0**	**0**	**0**	**0**	**539**	1,864
8:00 AM	**0**	**0**	**36**	**160**	**0**	**84**	**100**	**0**	**0**	**78**	**0**	**2**	**0**	**0**	**0**	**0**	**460**	1,908
8:15 AM	**0**	**0**	**28**	**165**	**0**	**70**	**115**	**0**	**0**	**78**	**0**	**0**	**0**	**0**	**0**	**0**	**456**	**1,918**
8:30 AM	0	0	35	146	0	64	108	0	0	68	0	3	0	0	0	0	424	1,879
8:45 AM	0	0	40	176	0	80	164	0	0	74	0	4	0	0	0	0	538	1,878
Count Total	0	0	341	1,317	0	523	939	0	0	607	0	15	0	0	0	0	3,742	0
Peak Hour	**0**	**0**	**165**	**705**	**0**	**286**	**457**	**0**	**0**	**301**	**0**	**4**	**0**	**0**	**0**	**0**	**1,918**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	1	1	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	3	1	4	0	*8*	0	2	0	0	*2*	0	0	0	0	*0*
7:30 AM	**13**	**2**	**0**	**0**	***15***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**1**	**2**	**1**	**0**	***4***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**4**	**1**	**2**	**0**	***7***	**0**	**2**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**5**	**1**	**3**	**0**	***9***	**0**	**3**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***
8:30 AM	4	0	1	0	*5*	0	5	0	0	*5*	0	0	0	0	*0*
8:45 AM	4	1	1	0	*6*	0	2	0	0	*2*	0	0	0	0	*0*
Count Total	36	9	13	0	*58*	0	16	0	0	*16*	0	0	0	0	*0*
Peak Hr	**23**	**6**	**6**	**0**	***35***	**0**	**7**	**0**	**0**	***7***	**0**	**0**	**0**	**0**	***0***

Mark Skaggs: (425) 250-0777

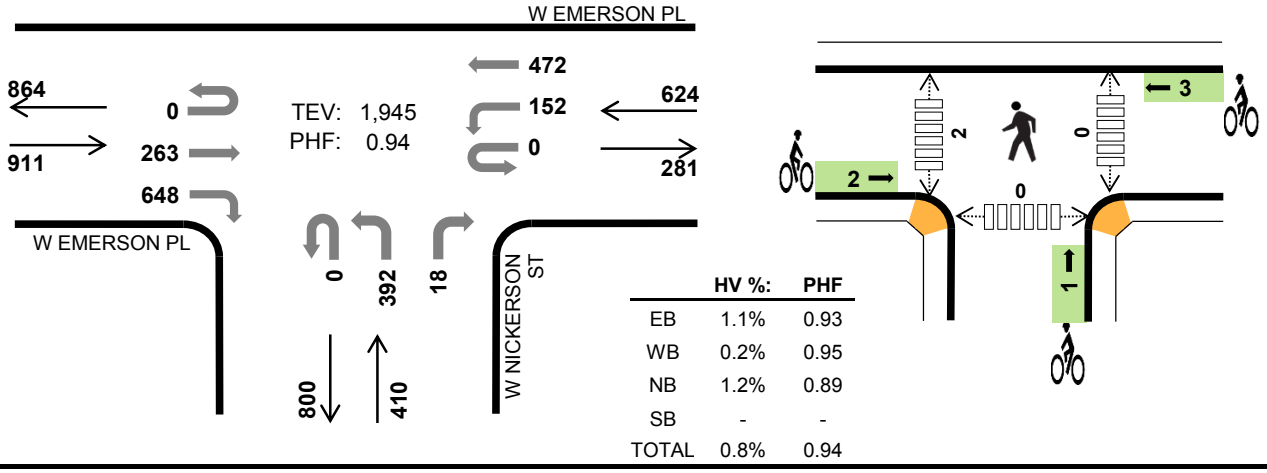
mark.skaggs@idaxdata.com

W NICKERSON ST
W EMERSON PL

N

Peak Hour

Date: Thu, Apr 13, 2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



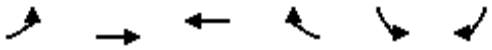
Two-Hour Count Summaries

Interval Start	W EMERSON PL Eastbound				W EMERSON PL Westbound				W NICKERSON ST Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	79	201	0	35	117	0	0	73	0	3	0	0	0	0	508	0
4:15 PM	0	0	58	153	0	39	124	0	0	71	0	4	0	0	0	0	449	0
4:30 PM	**0**	**0**	**69**	**176**	**0**	**46**	**110**	**0**	**0**	**89**	**0**	**4**	**0**	**0**	**0**	**0**	**494**	0
4:45 PM	**0**	**0**	**55**	**140**	**0**	**41**	**123**	**0**	**0**	**110**	**0**	**5**	**0**	**0**	**0**	**0**	**474**	1,925
5:00 PM	**0**	**0**	**78**	**168**	**0**	**36**	**127**	**0**	**0**	**105**	**0**	**5**	**0**	**0**	**0**	**0**	**519**	1,936
5:15 PM	**0**	**0**	**61**	**164**	**0**	**29**	**112**	**0**	**0**	**88**	**0**	**4**	**0**	**0**	**0**	**0**	**458**	**1,945**
5:30 PM	0	0	46	134	0	31	130	0	0	106	0	4	0	0	0	0	451	1,902
5:45 PM	0	0	33	162	0	37	122	0	0	94	0	6	0	0	0	0	454	1,882
Count Total	0	0	479	1,298	0	294	965	0	0	736	0	35	0	0	0	0	3,807	0
Peak Hour	**0**	**0**	**263**	**648**	**0**	**152**	**472**	**0**	**0**	**392**	**0**	**18**	**0**	**0**	**0**	**0**	**1,945**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	3	1	0	*4*	2	0	0	0	*2*	0	0	0	0	*0*
4:15 PM	3	0	1	0	*4*	0	3	0	0	*3*	0	2	0	0	*2*
4:30 PM	**2**	**1**	**1**	**0**	*4*	**0**	**0**	**0**	**0**	*0*	**0**	**0**	**0**	**0**	*0*
4:45 PM	**1**	**0**	**1**	**0**	*2*	**0**	**0**	**0**	**0**	*0*	**0**	**1**	**0**	**0**	*1*
5:00 PM	**4**	**0**	**2**	**0**	*6*	**2**	**1**	**0**	**0**	*3*	**0**	**0**	**0**	**0**	*0*
5:15 PM	**3**	**0**	**1**	**0**	*4*	**0**	**2**	**1**	**0**	*3*	**0**	**1**	**0**	**0**	*1*
5:30 PM	0	0	1	0	*1*	2	0	0	0	*2*	0	0	0	0	*0*
5:45 PM	2	0	1	0	*3*	0	1	0	0	*1*	0	1	0	0	*1*
Count Total	15	4	9	0	*28*	6	7	1	0	*14*	0	5	0	0	*5*
Peak Hr	**10**	**1**	**5**	**0**	*16*	**2**	**3**	**1**	**0**	*6*	**0**	**2**	**0**	**0**	*2*

HCM Signalized Intersection Capacity Analysis
1: W Emerson Pl & 19th Ave W



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	830	635	100	20	5
Future Volume (vph)	20	830	635	100	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.99		1.00	0.99
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		1.00	0.98		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3535	3448		1656	1463
Flt Permitted		0.93	1.00		0.95	1.00
Satd. Flow (perm)		3283	3448		1656	1463
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	23	943	722	114	23	6
RTOR Reduction (vph)	0	0	13	0	0	5
Lane Group Flow (vph)	0	966	823	0	23	1
Confl. Peds. (#/hr)	14			14		1
Confl. Bikes (#/hr)				17		
Heavy Vehicles (%)	2%	2%	2%	2%	9%	9%
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	3	8	4		5	
Permitted Phases	8					5
Actuated Green, G (s)		18.8	18.8		3.0	3.0
Effective Green, g (s)		18.8	18.8		3.0	3.0
Actuated g/C Ratio		0.59	0.59		0.09	0.09
Clearance Time (s)		5.0	5.0		5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1940	2038		156	138
v/s Ratio Prot			0.24		c0.01	
v/s Ratio Perm		c0.29				0.00
v/c Ratio		0.50	0.40		0.15	0.00
Uniform Delay, d1		3.8	3.5		13.2	13.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.1		0.4	0.0
Delay (s)		4.0	3.6		13.7	13.1
Level of Service		A	A		B	B
Approach Delay (s)		4.0	3.6		13.5	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	31.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	830	20	30	715	20	60
Future Vol, veh/h	830	20	30	715	20	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	0	0
Mvmt Flow	943	23	34	813	23	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	966	0	1429	483
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	474	-
Critical Hdwy	-	-	4.14	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.22	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	709	-	128	535
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	709	-	117	535
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	23.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	283	-	-	709	-
HCM Lane V/C Ratio	0.321	-	-	0.048	-
HCM Control Delay (s)	23.6	-	-	10.3	0.4
HCM Lane LOS	C	-	-	B	A
HCM 95th %tile Q(veh)	1.3	-	-	0.2	-

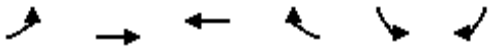
Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations									
Traffic Vol, veh/h	0	165	0	0	285	0	0	300	5
Future Vol, veh/h	0	165	0	0	285	0	0	300	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	1	1	1	2	2	2
Mvmt Flow	0	185	0	0	320	0	0	337	6
Number of Lanes	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.6	13.4	14.4
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	98%	0%	100%
Vol Thru, %	0%	100%	0%
Vol Right, %	2%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	305	165	285
LT Vol	300	0	285
Through Vol	0	165	0
RT Vol	5	0	0
Lane Flow Rate	343	185	320
Geometry Grp	1	1	1
Degree of Util (X)	0.523	0.281	0.482
Departure Headway (Hd)	5.494	5.458	5.419
Convergence, Y/N	Yes	Yes	Yes
Cap	658	658	666
Service Time	3.521	3.492	3.448
HCM Lane V/C Ratio	0.521	0.281	0.48
HCM Control Delay	14.4	10.6	13.4
HCM Lane LOS	B	B	B
HCM 95th-tile Q	3.1	1.2	2.6

HCM Signalized Intersection Capacity Analysis
1: W Emerson Pl & 19th Ave W



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	30	790	770	110	95	35
Future Volume (vph)	30	790	770	110	95	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		1.00	0.98		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3567	3487		1805	1615
Flt Permitted		0.90	1.00		0.95	1.00
Satd. Flow (perm)		3220	3487		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	859	837	120	103	38
RTOR Reduction (vph)	0	0	12	0	0	32
Lane Group Flow (vph)	0	892	945	0	103	6
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				28		
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	3	8	4		5	
Permitted Phases	8					5
Actuated Green, G (s)		19.8	19.8		5.2	5.2
Effective Green, g (s)		19.8	19.8		5.2	5.2
Actuated g/C Ratio		0.57	0.57		0.15	0.15
Clearance Time (s)		5.0	5.0		5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1821	1972		268	239
v/s Ratio Prot			0.27		c0.06	
v/s Ratio Perm		c0.28				0.00
v/c Ratio		0.49	0.48		0.38	0.02
Uniform Delay, d1		4.6	4.5		13.5	12.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.2		0.9	0.0
Delay (s)		4.8	4.7		14.4	12.8
Level of Service		A	A		B	B
Approach Delay (s)		4.8	4.7		13.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	35.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	855	30	20	845	35	55
Future Vol, veh/h	855	30	20	845	35	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	910	32	21	899	37	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	941	0	1418	471
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	492	-
Critical Hdwy	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	731	-	130	545
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	586	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	731	-	123	545
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	30.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	233	-	-	731	-
HCM Lane V/C Ratio	0.411	-	-	0.029	-
HCM Control Delay (s)	30.8	-	-	10.1	0.3
HCM Lane LOS	D	-	-	B	A
HCM 95th %tile Q(veh)	1.9	-	-	0.1	-

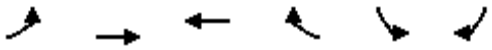
Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations									
Traffic Vol, veh/h	0	265	0	0	150	0	0	390	20
Future Vol, veh/h	0	265	0	0	150	0	0	390	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	0	0	0	1	1	1
Mvmt Flow	0	282	0	0	160	0	0	415	21
Number of Lanes	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.5	10.9	17.4
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	95%	0%	100%
Vol Thru, %	0%	100%	0%
Vol Right, %	5%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	410	265	150
LT Vol	390	0	150
Through Vol	0	265	0
RT Vol	20	0	0
Lane Flow Rate	436	282	160
Geometry Grp	1	1	1
Degree of Util (X)	0.643	0.426	0.257
Departure Headway (Hd)	5.311	5.436	5.804
Convergence, Y/N	Yes	Yes	Yes
Cap	680	663	619
Service Time	3.339	3.47	3.843
HCM Lane V/C Ratio	0.641	0.425	0.258
HCM Control Delay	17.4	12.5	10.9
HCM Lane LOS	C	B	B
HCM 95th-tile Q	4.7	2.1	1

HCM Signalized Intersection Capacity Analysis
1: W Emerson Pl & 19th Ave W



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	880	675	125	35	10
Future Volume (vph)	25	880	675	125	35	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.99		1.00	0.99
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		1.00	0.98		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3534	3434		1656	1463
Flt Permitted		0.92	1.00		0.95	1.00
Satd. Flow (perm)		3254	3434		1656	1463
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	28	1000	767	142	40	11
RTOR Reduction (vph)	0	0	15	0	0	10
Lane Group Flow (vph)	0	1028	894	0	40	1
Confl. Peds. (#/hr)	14			14		1
Confl. Bikes (#/hr)				17		
Heavy Vehicles (%)	2%	2%	2%	2%	9%	9%
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	3	8	4		5	
Permitted Phases	8					5
Actuated Green, G (s)		21.1	21.1		3.2	3.2
Effective Green, g (s)		21.1	21.1		3.2	3.2
Actuated g/C Ratio		0.62	0.62		0.09	0.09
Clearance Time (s)		5.0	5.0		5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		2001	2112		154	136
v/s Ratio Prot			0.26		c0.02	
v/s Ratio Perm		c0.32				0.00
v/c Ratio		0.51	0.42		0.26	0.01
Uniform Delay, d1		3.7	3.4		14.4	14.1
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.1		0.9	0.0
Delay (s)		3.9	3.6		15.3	14.1
Level of Service		A	A		B	B
Approach Delay (s)		3.9	3.6		15.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	34.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	895	20	30	780	20	65
Future Vol, veh/h	895	20	30	780	20	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	0	0
Mvmt Flow	1017	23	34	886	23	74

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1040	0	1539	520
Stage 1	-	-	-	-	1028	-
Stage 2	-	-	-	-	511	-
Critical Hdwy	-	-	4.14	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.22	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	664	-	108	506
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	664	-	97	506
Mov Cap-2 Maneuver	-	-	-	-	97	-
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	515	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	27.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	254	-	-	664	-
HCM Lane V/C Ratio	0.38	-	-	0.051	-
HCM Control Delay (s)	27.6	-	-	10.7	0.5
HCM Lane LOS	D	-	-	B	A
HCM 95th %tile Q(veh)	1.7	-	-	0.2	-

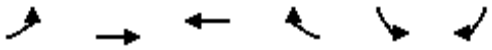
Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations									
Traffic Vol, veh/h	0	180	0	0	300	0	0	325	5
Future Vol, veh/h	0	180	0	0	300	0	0	325	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	1	1	1	2	2	2
Mvmt Flow	0	202	0	0	337	0	0	365	6
Number of Lanes	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	11.2	14.5	16.1
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	98%	0%	100%
Vol Thru, %	0%	100%	0%
Vol Right, %	2%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	330	180	300
LT Vol	325	0	300
Through Vol	0	180	0
RT Vol	5	0	0
Lane Flow Rate	371	202	337
Geometry Grp	1	1	1
Degree of Util (X)	0.578	0.315	0.521
Departure Headway (Hd)	5.61	5.609	5.562
Convergence, Y/N	Yes	Yes	Yes
Cap	641	639	647
Service Time	3.645	3.654	3.6
HCM Lane V/C Ratio	0.579	0.316	0.521
HCM Control Delay	16.1	11.2	14.5
HCM Lane LOS	C	B	B
HCM 95th-tile Q	3.7	1.3	3

HCM Signalized Intersection Capacity Analysis
1: W Emerson Pl & 19th Ave W



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	840	815	150	135	45
Future Volume (vph)	40	840	815	150	135	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		1.00	0.98		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3566	3465		1805	1615
Flt Permitted		0.88	1.00		0.95	1.00
Satd. Flow (perm)		3128	3465		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	913	886	163	147	49
RTOR Reduction (vph)	0	0	17	0	0	39
Lane Group Flow (vph)	0	956	1032	0	147	10
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				28		
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	3	8	4		5	
Permitted Phases	8					5
Actuated Green, G (s)		21.6	21.6		7.8	7.8
Effective Green, g (s)		21.6	21.6		7.8	7.8
Actuated g/C Ratio		0.55	0.55		0.20	0.20
Clearance Time (s)		5.0	5.0		5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1714	1899		357	319
v/s Ratio Prot			0.30		c0.08	
v/s Ratio Perm		c0.31				0.01
v/c Ratio		0.56	0.54		0.41	0.03
Uniform Delay, d1		5.8	5.7		13.8	12.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.3		0.8	0.0
Delay (s)		6.2	6.0		14.6	12.8
Level of Service		A	A		B	B
Approach Delay (s)		6.2	6.0		14.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	39.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	940	30	20	930	35	60
Future Vol, veh/h	940	30	20	930	35	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	1000	32	21	989	37	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1032	0	1553	516
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	537	-
Critical Hdwy	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	675	-	106	509
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	556	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	675	-	99	509
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	518	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	39.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	202	-	-	675	-
HCM Lane V/C Ratio	0.5	-	-	0.032	-
HCM Control Delay (s)	39.4	-	-	10.5	0.3
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	2.5	-	-	0.1	-

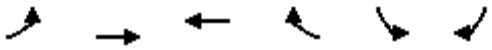
Intersection	
Intersection Delay, s/veh	17.3
Intersection LOS	C

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations									
Traffic Vol, veh/h	0	290	0	0	160	0	0	430	20
Future Vol, veh/h	0	290	0	0	160	0	0	430	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	0	0	0	1	1	1
Mvmt Flow	0	309	0	0	170	0	0	457	21
Number of Lanes	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	13.8	11.5	21.6
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	96%	0%	100%
Vol Thru, %	0%	100%	0%
Vol Right, %	4%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	450	290	160
LT Vol	430	0	160
Through Vol	0	290	0
RT Vol	20	0	0
Lane Flow Rate	479	309	170
Geometry Grp	1	1	1
Degree of Util (X)	0.725	0.482	0.285
Departure Headway (Hd)	5.452	5.626	6.03
Convergence, Y/N	Yes	Yes	Yes
Cap	665	639	594
Service Time	3.488	3.673	4.084
HCM Lane V/C Ratio	0.72	0.484	0.286
HCM Control Delay	21.6	13.8	11.5
HCM Lane LOS	C	B	B
HCM 95th-tile Q	6.2	2.6	1.2

HCM Signalized Intersection Capacity Analysis
1: W Emerson Pl & 19th Ave W



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	36	885	675	207	78	20
Future Volume (vph)	36	885	675	207	78	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.99		1.00	0.99
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		1.00	0.96		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3532	3381		1656	1463
Flt Permitted		0.89	1.00		0.95	1.00
Satd. Flow (perm)		3152	3381		1656	1463
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	41	1006	767	235	89	23
RTOR Reduction (vph)	0	0	28	0	0	20
Lane Group Flow (vph)	0	1047	974	0	89	3
Confl. Peds. (#/hr)	14			14		1
Confl. Bikes (#/hr)				17		
Heavy Vehicles (%)	2%	2%	2%	2%	9%	9%
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	3	8	4		5	
Permitted Phases	8					5
Actuated Green, G (s)		23.8	23.8		5.4	5.4
Effective Green, g (s)		23.8	23.8		5.4	5.4
Actuated g/C Ratio		0.61	0.61		0.14	0.14
Clearance Time (s)		5.0	5.0		5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1913	2052		228	201
v/s Ratio Prot			0.29		c0.05	
v/s Ratio Perm		c0.33				0.00
v/c Ratio		0.55	0.47		0.39	0.02
Uniform Delay, d1		4.5	4.2		15.4	14.6
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.2		1.1	0.0
Delay (s)		4.9	4.4		16.5	14.6
Level of Service		A	A		B	B
Approach Delay (s)		4.9	4.4		16.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	39.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	938	25	41	862	20	78
Future Vol, veh/h	938	25	41	862	20	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	0	0
Mvmt Flow	1066	28	47	980	23	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1094	0	1663	547
Stage 1	-	-	-	-	1080	-
Stage 2	-	-	-	-	583	-
Critical Hdwy	-	-	4.14	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.22	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	634	-	90	486
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	527	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	634	-	75	486
Mov Cap-2 Maneuver	-	-	-	-	75	-
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	441	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	34.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	229	-	-	634	-
HCM Lane V/C Ratio	0.486	-	-	0.073	-
HCM Control Delay (s)	34.8	-	-	11.1	0.8
HCM Lane LOS	D	-	-	B	A
HCM 95th %tile Q(veh)	2.4	-	-	0.2	-

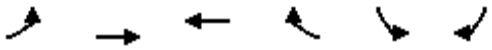
Intersection	
Intersection Delay, s/veh	16.4
Intersection LOS	C

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations									
Traffic Vol, veh/h	0	197	0	0	300	0	0	369	5
Future Vol, veh/h	0	197	0	0	300	0	0	369	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	1	1	1	2	2	2
Mvmt Flow	0	221	0	0	337	0	0	415	6
Number of Lanes	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.1	15.5	19.4
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	99%	0%	100%
Vol Thru, %	0%	100%	0%
Vol Right, %	1%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	374	197	300
LT Vol	369	0	300
Through Vol	0	197	0
RT Vol	5	0	0
Lane Flow Rate	420	221	337
Geometry Grp	1	1	1
Degree of Util (X)	0.666	0.357	0.541
Departure Headway (Hd)	5.705	5.813	5.782
Convergence, Y/N	Yes	Yes	Yes
Cap	635	618	624
Service Time	3.748	3.87	3.833
HCM Lane V/C Ratio	0.661	0.358	0.54
HCM Control Delay	19.4	12.1	15.5
HCM Lane LOS	C	B	C
HCM 95th-tile Q	5	1.6	3.2

HCM Signalized Intersection Capacity Analysis
1: W Emerson Pl & 19th Ave W



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	39	840	815	147	165	53
Future Volume (vph)	39	840	815	147	165	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		1.00	0.98		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3566	3467		1805	1615
Flt Permitted		0.88	1.00		0.95	1.00
Satd. Flow (perm)		3136	3467		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	913	886	160	179	58
RTOR Reduction (vph)	0	0	17	0	0	46
Lane Group Flow (vph)	0	955	1029	0	179	12
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				28		
Heavy Vehicles (%)	1%	1%	1%	1%	0%	0%
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	3	8	4		5	
Permitted Phases	8					5
Actuated Green, G (s)		22.0	22.0		8.3	8.3
Effective Green, g (s)		22.0	22.0		8.3	8.3
Actuated g/C Ratio		0.55	0.55		0.21	0.21
Clearance Time (s)		5.0	5.0		5.0	5.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1711	1892		371	332
v/s Ratio Prot			0.30		c0.10	
v/s Ratio Perm		c0.30				0.01
v/c Ratio		0.56	0.54		0.48	0.04
Uniform Delay, d1		6.0	5.9		14.1	12.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.3		1.0	0.0
Delay (s)		6.4	6.2		15.1	12.8
Level of Service		A	A		B	B
Approach Delay (s)		6.4	6.2		14.5	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	970	30	20	927	35	77
Future Vol, veh/h	970	30	20	927	35	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	1032	32	21	986	37	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1064	0	1584	532
Stage 1	-	-	-	-	1048	-
Stage 2	-	-	-	-	536	-
Critical Hdwy	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	656	-	101	497
Stage 1	-	-	-	-	303	-
Stage 2	-	-	-	-	556	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	656	-	94	497
Mov Cap-2 Maneuver	-	-	-	-	94	-
Stage 1	-	-	-	-	303	-
Stage 2	-	-	-	-	517	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	41.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	212	-	-	656	-
HCM Lane V/C Ratio	0.562	-	-	0.032	-
HCM Control Delay (s)	41.8	-	-	10.7	0.4
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	3	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations									
Traffic Vol, veh/h	0	304	0	0	160	0	0	428	20
Future Vol, veh/h	0	304	0	0	160	0	0	428	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	1	1	1	0	0	0	1	1	1
Mvmt Flow	0	323	0	0	170	0	0	455	21
Number of Lanes	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	14.4	11.6	21.8
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	96%	0%	100%
Vol Thru, %	0%	100%	0%
Vol Right, %	4%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	448	304	160
LT Vol	428	0	160
Through Vol	0	304	0
RT Vol	20	0	0
Lane Flow Rate	477	323	170
Geometry Grp	1	1	1
Degree of Util (X)	0.727	0.506	0.287
Departure Headway (Hd)	5.494	5.631	6.061
Convergence, Y/N	Yes	Yes	Yes
Cap	658	640	591
Service Time	3.533	3.679	4.116
HCM Lane V/C Ratio	0.725	0.505	0.288
HCM Control Delay	21.8	14.4	11.6
HCM Lane LOS	C	B	B
HCM 95th-tile Q	6.2	2.9	1.2

Attachment 4: Weekday Shared Parking Demand

	Existing Uses Removed				Proposed Uses								Net New Parking Demand
Land Use	**Seattle Ship Supply (General Light Industrial)[2,3]**		**Net Sheds 7 and 8 (Warehousing)[4]**		**Marine Sales & Services[5]**		**Marine Sales & Services - Accessory Office**		**General Industrial[3]**		**Warehousing[4]**		
Size	**18,000 sf**		**23,040 sf**		**21,000 sf**		**13,000 sf**		**61,200 sf**		**65,250 sf**		
Rate[1]	**0.75 veh/1,000 sf**		**0.51 veh/1,000 sf**		**2.55 veh/1,000 sf**		**2.47 veh/1,000 sf**		**0.75 veh/1,000 sf**		**0.51 veh/1,000 sf**		
Peak Demand	**14**		**12**		**54**		**32**		**46**		**33**		
6 - 7 AM	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0
7 - 8 AM	55%	8	0%	0	5%	3	59%	19	55%	25	0%	0	39
8 - 9 AM	69%	10	71%	9	18%	10	79%	25	69%	32	71%	23	71
9 - 10 AM	74%	10	92%	11	38%	21	95%	30	74%	34	92%	30	94
10 - 11 AM	75%	11	100%	12	68%	37	100%	32	75%	35	100%	33	114
11 AM - 12 PM	**75%**	**11**	**99%**	**12**	**91%**	**49**	**98%**	**31**	**75%**	**35**	**99%**	**33**	**125**
12 - 1 PM	73%	10	88%	11	100%	54	90%	29	73%	34	88%	29	125
1 - 2 PM	97%	14	45%	5	97%	52	77%	25	97%	45	45%	15	118
2 - 3 PM	100%	14	46%	6	95%	51	84%	27	100%	46	46%	15	119
3 - 4 PM	95%	13	40%	5	88%	48	81%	26	95%	44	40%	13	113
4 - 5 PM	77%	11	88%	11	78%	42	72%	23	77%	35	88%	29	107
5 - 6 PM	62%	9	27%	3	62%	33	46%	15	62%	29	27%	9	74
6 - 7 PM	0%	0	35%	4	64%	35	25%	8	0%	0	35%	12	51
7 - 8 PM	0%	0	27%	3	77%	42	0%	0	0%	0	27%	9	48
8 - 9 PM	0%	0	0%	0	70%	38	0%	0	0%	0	0%	0	38
9 - 10 PM	0%	0	0%	0	42%	23	0%	0	0%	0	0%	0	23
10 - 11 PM	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0
11 PM - 12 AM	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0
12 - 1 AM	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0
Maximum		**14**		**12**		**54**		**32**		**46**		**33**	**125**

Notes:

1. Institute of Transportation Engineers *Parking Generation,* 4th Edition (2010) average parking rate with urban rates were used, where available. There is no specific land use for marine sales and services; therefore, accessory retail is based on the shopping center (LU 820) land use and the accessory office is based on single office tenant (LU 701).

2. Although the Seattle Ship Supply would not be completely demolished, the use would change to marine sales and services and general light industrial so the calculations remove existing parking demand and add in parking demand from the change of use.

3. Hourly Percentages for General Light Industrial Land Use not available, Industrial Park (LU 130) was referenced.

4. Hourly Percentages not available past 1 PM for Warehousing Land Use, 1 PM - 7 PM percentages referenced from Mini-Warehouse (LU 151)

5. Hourly Percentages for Marine Sales & Services not available, retail (LU 820) was referenced.