

SR 519 INTERMODAL ACCESS PROJECT PHASE 2: SOUTH ATLANTIC CORRIDOR



Cultural Resources Discipline Report

Prepared for



U.S. Department of Transportation
**Federal Highway
Administration**



Washington State
Department of Transportation

Prepared by

Northwest Archaeological Associates, Inc./Environmental History Company

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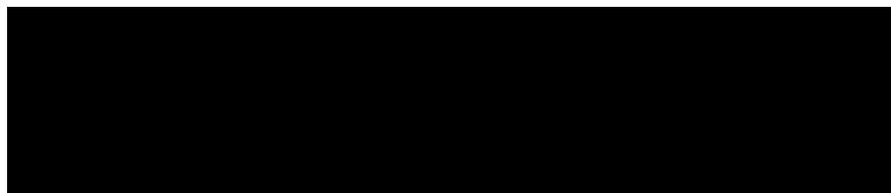


TABLE OF CONTENTS

Chapter 1 Introduction	1-2
1 Regulatory Context	1-8
2 Project Location	1-10
3 Area of Potential Effects	1-10
Chapter 2 Description of Alternatives	2-1
1 Phase 2 Need	2-1
2 Project Purpose	2-2
3 Project Alternatives	2-2
Proposed Action	2-2
Construction Components	2-4
No Build Alternative	2-5
Chapter 3 Methodology	3-1
1 Tribal Coordination and Consultation	3-1
NWAA/EHC	3-1
WSDOT	3-2
Chapter 4 Affected Environment	4-1
1 The Natural Setting	4-1
Landscape	4-1
2 Cultural Setting	4-6
Pre-Contact	4-6
Ethnography and Ethnohistory	4-6
3 History	4-9
Early Seattle 1851-1889	4-11
Changing Waterfront 1889-1919	4-17
Modernization 1920-1960	4-26
4 Previous Cultural Resources Studies	4-29
5 Traditional Cultural Properties	4-34
6 Previously Recorded Archaeological Sites	4-34
7 Recorded Historical Resources	4-37
8 Archaeological Expectations	4-42
Pre-contact Archaeological Resources	4-42
Historic Archaeological Resources	4-42
Summary	4-43
Chapter 5 Environmental Consequences	5-1
1 Proposed Action	5-1
Methods Used to Evaluate the Project's Potential Effects	5-1
Effects During Construction	5-1
Effects During Operation	5-2
2 No Build Alternative	5-3
Effects During Construction	5-3
Effects During Operation	5-3

Chapter 6 Cumulative Effects 6-1

- 2 Identifying Expected Cumulative Effects 6-1
 - Past and Present Actions 6-1
 - Direct and Indirect Effects of the Proposed Action 6-2
 - Direct and Indirect Effects of the No Build Action 6-2
 - Reasonably Foreseeable Future Actions 6-2
- 3 Cumulative Effects 6-6

Chapter 7 References 7-1

LIST OF EXHIBITS

Exhibit 1-1.	SR-519 Phase 2 Area of Potential Effect (APE).	1-11
Exhibit 2-1.	Proposed Action.	2-3
Exhibit 2-2.	No Build Alternative.	2-6
Exhibit 4-1.	Stratigraphic Profile along South Royal Brougham Way Between South Third Avenue and Occidental Avenue South.	4-4
Exhibit 4-2.	USCGS T-sheet Showing the Project Vicinity in 1875, Before Tideland Development.	4-5
Exhibit 4-3.	Ethnographic Sites in the Ape Vicinity Based on Waterman (2001).	4-7
Exhibit 4-4.	Ethnographic Sites in the Vicinity of the SR 519 Phase 2 APE.	4-8
Exhibit 4-5.	Locations Named in Archival Sources.	4-9
Exhibit 4-6.	Probable Locations of Historically Described Native American Sites	4-10
Exhibit 4-7.	Native American Woman on the Tideflats South of King Street and East of First Ave. S., 1898	4-11
Exhibit 4-8.	Land Claims along the Waterfront.	4-12
Exhibit 4-9.	Sanborn Fire Insurance Maps, 1888, Showing Mcdonald's and Rice's Planing Mill at What Is Now 6 th Ave S. And S. Royal Brougham Way.	4-18
Exhibit 4-10.	Map Showing the Proposed Tidal Area to Be Filled by the Seattle and Lake Washington Waterway Company, 1895.	4-21
Exhibit 4-11.	Overview of Tideflats in 1898 Showing Construction of Moran's Klondike Steamers	4-23
Exhibit 4-12.	"Shacktown" in 1910.	4-24
Exhibit 4-13.	Uscgs Map Showing Tideland Development by 1899 in the Project Vicinity	4-25
Exhibit 4-14.	The Vulcan Iron Works in 1910; View to the North with 4 th Ave S Trestle at Left.	4-26
Exhibit 4-15.	Selected Cultural Resources Studies in the Project Vicinity.	4-29
Exhibit 4-16.	Previously Recorded Archaeological Sites in Vicinity of APE.	4-34
Exhibit 4-17.	Map Showing Previously Recorded Archaeological Sites in Relation to the APE.	4-35
Exhibit 4-18.	Map Showing Historical Resources Within the Ape, Including the Pioneer Square Preservation District.	4-38
Exhibit 4-19.	Historical Resources Within the Ape.	4-39
Exhibit 4-20.	Facade of the Frederick and Nelson Warehouse, Number 1518.	4-39
Exhibit 4-21.	Overview of Great Floors, 17-4586.	4-40
Exhibit 4-22.	Overview of Pacific Office Automation or Romac Industries, 17-04770.	4-41
Exhibit 6-1.	Reasonably Foreseeable Future Actions	6-3
Exhibit 6-2.	Reasonably Foreseeable Future Actions in or near the Study Area.	6-4

Cover: Tideflats from Beacon Hill, 1898. MOHAI Photo Collection, Image SHS 835; photograph by Anders Wilse.

APPENDICES

Appendix A: Correspondence	A-1
Appendix B: Sanborn Fire Insurance Maps	B-1
Appendix C: Historic Property Inventory Forms	C-1

Acronyms and Abbreviations

AD	Anno Domini
APE	Area of Potential Effects
AWV	Alaskan Way Viaduct
BGS	Below Ground Surface
BNSF	Burlington Northern Santa Fe Railroad
BP	Before Present
bpsl	Below Present Sea Level
CFR	Code of the Federal Regulations
CMP	Construction Management Plan
DAHP	Department of Archaeology and Historic Preservation
EHC	Environmental History Company
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
LAAS	Larson Anthropological Archaeological Services Limited
MOHAI	Museum of History and Industry
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NWAA	Northwest Archaeological Associates, Inc.
PSPD	Pioneer Square Preservation District
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Officer
SLS&E	Seattle Lake Shore and Eastern Railroad
SMC	Seattle Municipal Code
SODO	South of Downtown

SR State Route
SSSV South Spokane Street Viaduct
USCGS United States Coast and Geodetic Survey
USDOT United State Department of Transportation
WAC Washington Administrative Code
WHR Washington Heritage Register
WSDOT Washington State Department of Transportation

Summary

The project is just south of downtown Seattle in an area of filled tidelands, east of State Route 99, west of Interstate 5, and adjacent to Qwest Stadium and Safeco Field in King County, Washington. Surface streets within the study area include First Avenue South, Third Avenue South, Fourth Avenue South, Fifth Avenue South (the E3 Busway), Occidental Avenue South, South Royal Brougham Way, and South Atlantic Street. The affected environment for cultural resources is historic properties within the study area that may be affected by the Proposed Action. Cultural resources include buildings, structures, objects, archaeological sites, districts, landscapes, and traditional cultural properties. Historic properties are cultural resources that are eligible for or listed in the National Register of Historic Places (NRHP).

The area of potential effects (APE), is the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR 800.16). The SR 519 Phase 2 APE was developed by the Washington State Department of Transportation (WSDOT) in consultation with affected tribes and the Washington State Historic Preservation Officer. The APE includes proposed areas of excavation for stormwater facilities, support columns shafts, foundations, and soil stabilization, as well as ancillary construction staging areas. The APE also considers visual and auditory effects and vibrations that may affect historic properties by extending the boundary approximately one tax parcel beyond areas of proposed construction and staging. The vertical APE extends to 50 feet below the ground or street surface.

The Northwest Archaeological Associates, Inc. and the Environmental History Company (NWAA/EHC) team contacted state and local agencies for information on existing historical resources and archaeological sites. Other data was collected from past project reports, ethnographic and ethnohistoric studies, geotechnical bore logs, and archival sources. WSDOT consulted with affected Indian Tribes to obtain information about archaeological resources and traditional cultural properties. The collected data, as well as results from a field reconnaissance, were used to develop a framework for identifying historic properties and assessing effects of the Proposed Action.

Effects to archaeological resources could occur from construction including excavation for support column shafts, a signal standard, and soil stabilization. Construction is not expected to affect the Frederick and Nelson Warehouse, a NRHP property, or the City of Seattle Pioneer Square Preservation District which overlaps the APE. Operation of the project could not effect archaeological resources, the Frederick and Nelson Warehouse, or the Pioneer Square Preservation District.

The historic built environment in the project area would not experience any cumulative effects. Archaeological resources, if present and not avoided, may be harmed. Loss or degradation of non-renewable archaeological resources can cumulatively reduce the universe of archaeological sites in the vicinity.

The construction effects of the Proposed Action would be avoided under the No Build Alternative.

Chapter 1 Introduction

The Federal Highway Administration (FHWA) and the Washington State Department of Transportation (WSDOT) propose to increase traffic mobility and safety on State Route (SR) 519, in Seattle, Washington. This project may affect historic properties and thus is an undertaking as defined by the National Historic Preservation Act (NHPA). The project is also subject to Section 4(f) of the Department of Transportation Act. A team composed of Northwest Archaeological Associates, Inc. and the Environmental History Company (NWAA/EHC) has prepared this report to aid WSDOT in its regulatory responsibilities by identifying historic properties that may be affected by the project.

1 Regulatory Context

The environmental process for this project is governed by the National Environmental Policy Act (NEPA) which established the responsibility of the federal government to use all practicable means to preserve important historic, cultural and natural aspects of the national heritage. The NHPA is a separate authority that established as federal policy that federal agencies act as responsible stewards of our nation's resources when their actions affect historic properties. Section 106 of the act requires the agency take into account the effect of an undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register of Historic Places (National Register). Implementing regulations for Section 106 explicitly provide guidance on how the NEPA and Section 106 processes can be coordinated [Section 800.8(a)] and set forth the manner in which the NEPA process and documentation can be used to comply with Section 106 [Section 800.9(c)]. Identification of historic properties and assessment of effects of the undertaking in a manner consistent with existing NHPA regulations (Section 800.4 through 800.5) are among the provisions. Eligible properties generally must be at least 50 years old, possess integrity of physical characteristics, and meet at least one of four criteria of significance. These criteria designate as significant those resources:

- 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 indistinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.

The State Environmental Policy Act (SEPA, RCW 43 21C) and implementing rules contained in the Washington Administrative Code (WAC 197-11) also apply to the project. These rules require project proponents to identify any places or objects on or adjacent to the project that are listed in, or eligible for national, state, or local preservation registers, and to identify sites of archaeological, scientific, or cultural importance on or adjacent to the project. Project proponents are required to describe proposed measures to reduce or control impacts to those places, objects, and sites.

Several Washington state laws specifically address archaeological sites and Native American burials. The Archaeological Sites and Resources Act [RCW 27.53] prohibits knowingly excavating or disturbing prehistoric and historical archaeological sites on public or private land without a permit from the Washington Department of Archaeology and Historic Preservation (DAHP). The Indian Graves and Records Act [RCW 27.44] prohibits knowingly destroying American Indian graves and requires their inadvertent disturbance by construction or other activity to be followed by re-interment under supervision of the appropriate Indian tribe. RCW 42.56.300 states that records, maps, or other information identifying the location of archaeological sites are exempt from disclosure in order to avoid the looting or depredation of such sites.

On the local level, the City of Seattle's Historic Landmark Preservation Ordinance (SMC 25.12) protects properties of historic and architectural significance. An object, site or improvement that is more than 25 years old may be designated for preservation as a landmark if it has significant character, interest or value as part of the development, heritage or cultural characteristics of the city, state, or nation, if it has integrity or the ability to convey its significance, and if it falls into one of six criteria (SMC 25.12.350):

- A. It is the location of, or is associated in a significant way with, an 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 of 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, character 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.

Under the City of Seattle's SEPA regulations, properties that are likely to meet City landmark criteria must be formally reviewed for designation before demolition. This determination and

other review decisions concerning landmarks and districts are made by the Seattle Landmarks Preservation Board.

2 Project Location

The project is just south of downtown Seattle in an area of filled tidelands, east of SR 99, west of Interstate 5 (I-5), and adjacent to Qwest Stadium and Safeco Field, in Section 5, Township 24 North, Range 4 East, Willamette Meridian (Exhibit 1-1). Elliott Bay and the Duwamish Waterway are about one-half mile west of the project. Surface streets within the study area include First Avenue South, Third Avenue South, Fourth Avenue South, Fifth Avenue South (the E3 Busway), Occidental Avenue South, South Royal Brougham Way, and South Atlantic Street.

3 Area of Potential Effects

The area of potential effects (APE) is the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR 800.16). The SR 519 Phase 2 APE was developed by WSDOT in consultation with affected tribes and the Washington State Historic Preservation Officer (SHPO) (Appendix A). The APE includes proposed areas of excavation for stormwater facilities, support columns shafts, foundations, and soil stabilization, as well as ancillary construction staging areas (Exhibit 1-1). The APE also considers visual and auditory effects and vibrations that may affect historic properties by extending the boundary approximately one tax parcel beyond areas of proposed construction and staging. In cases where tax parcels extend more than one block, the APE includes the closest building or structure and that portion of the tax parcel between the building and the construction and staging area. The maximum depth of proposed excavation is 80 feet, however, only the upper 50 feet includes fill and Holocene sediments with potential for archaeological deposits. The vertical APE extends to 50 feet below the ground or street surface. Glacially-derived sediments below 50 feet have no potential for cultural material.

SHPO concurred with the definition of the APE on August 8, 2007 (Appendix A).

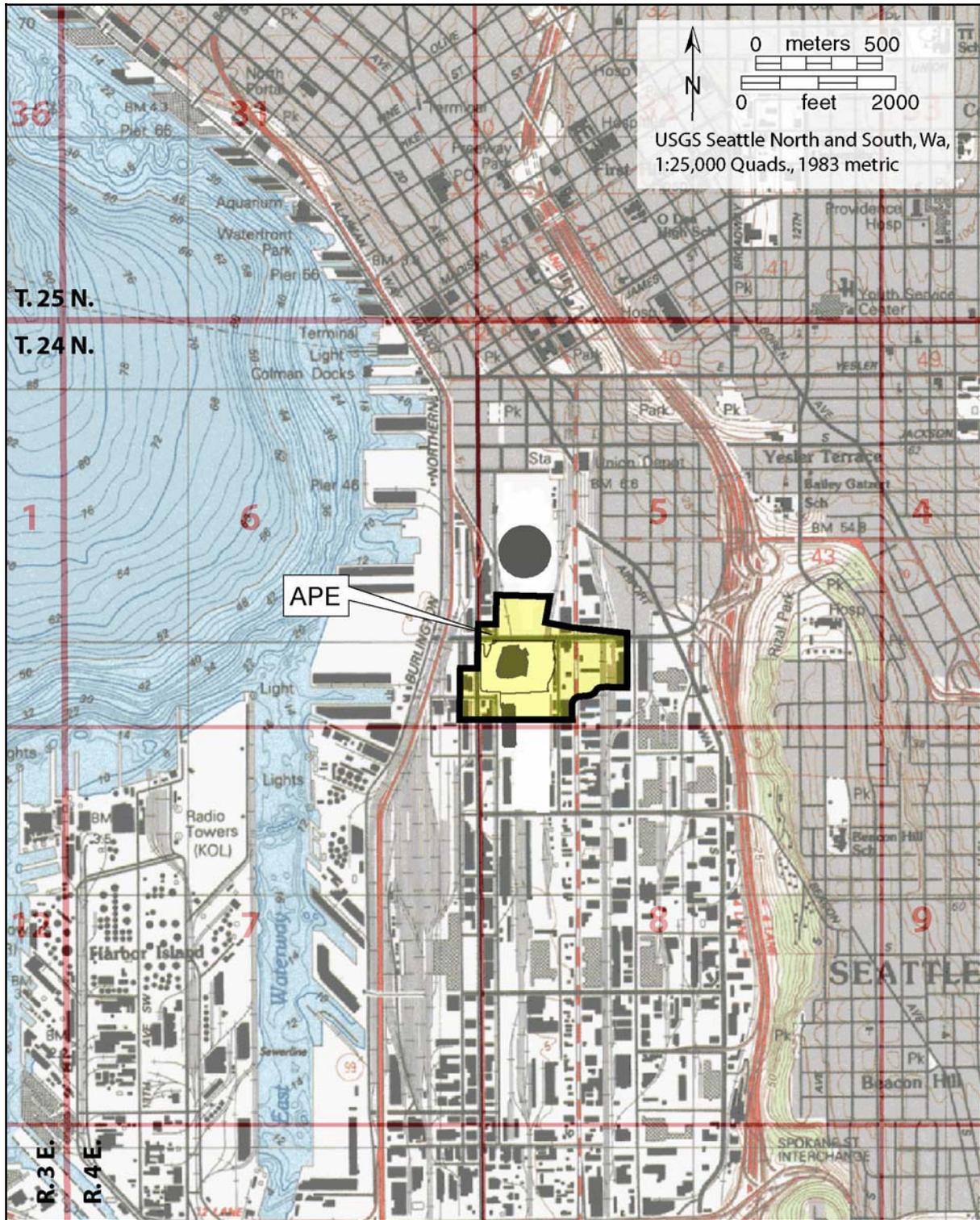


EXHIBIT 1-1. SR-519 PHASE 2 AREA OF POTENTIAL EFFECT (APE).

Chapter 2 Description of Alternatives

State Route (SR) 519 in Seattle is an important thoroughfare for cars, trucks, and pedestrians in Seattle's South of Downtown (SODO) district. In 2004, WSDOT opened Phase 1 of the SR 519 project, consisting of a the South Atlantic Street railroad overpass (Edgar Martinez Drive South) and a new eastbound on-ramp from South Atlantic Street to Interstate 5 (I-5) and Interstate 90 (I-90). The overpass separates road and railway traffic at Third and Fourth Avenues South and improves access to the freeway system from important waterfront facilities such as the Port of Seattle, railroad freight yards, and the Washington State Ferries terminal at Colman Dock.



New Atlantic Street overpass built in SR 519 Phase 1

The Phase 1 project had four main components which: provided the eastbound connection from the waterfront to I-5 and I-90 via South Atlantic Street, removed the old eastbound I-90 ramp on Fourth Avenue, made improvements to South Atlantic Street between First Avenue and the Alaskan Way/East Marginal Way intersection, and constructed the South Weller Street Pedestrian Bridge. When Phase 1 opened, freight, ferry, and event traffic saw immediate improvement in connections from the Port of Seattle, waterfront, and stadium areas to the freeway system.

1 Phase 2 Need

SR 519 provides a vital roadway system for east-west traffic through Seattle, but it currently does not assist in the efficient movement of cars, trucks, trains, and pedestrians through Seattle's South of Downtown (SODO) district. The route passes through an area that has changed so much in recent years that the roadway arrangement is not well suited to present conditions. A new design and new roadway structures are needed to allow vehicles and pedestrians to reach their destinations safely, quickly, and directly..

Problems that this project would help to solve are:

- Safety issues related to surface-level rail crossings by daily traffic and people walking to and from the stadium area
- Expected increase in rail traffic and pedestrian crossings when the Sound Transit light rail operation starts in 2009, resulting in safety concerns and travel delays
- Poor westbound access between Interstates 5 and 90 and the Seattle waterfront, especially Port of Seattle terminals and the Washington State Ferries terminal at Colman Dock
- Delays in moving products between Port of Seattle terminals and local, regional, and national markets

2 Project Purpose

This project would increase traffic mobility and safety by improving connections between Interstates 5 and 90 and Port of Seattle terminals, the Washington State Ferries terminal at Colman Dock, waterfront commercial interests, and the stadium area. The project would allow people to walk more safely to and from the stadium area.

The purpose of the project is to:

- Provide a more direct route between Interstates 5 and 90 and the Seattle waterfront, so that freight, commuters, and local traffic can move more safely and efficiently through the stadium area
- Improve safety and reduce railroad and vehicle delays at the surface-level rail crossing on South Royal Brougham Way near Fourth Avenue
- Improve safety for people walking to events, work, and neighborhood destinations
- Reduce truck and rail traffic conflicts so that freight operators can move products more efficiently between Port of Seattle terminals and markets

3 Project Alternatives

Two alternatives were analyzed for this report: the Proposed Action and the No Build Alternative. The Proposed Action, which has been designed to meet current and projected future traffic conditions, was developed following the completion of an earlier NEPA Environmental Assessment and associated Finding of No Significant Impact (FONSI) (USDOT et al., 1997) and builds on the more recent screening and evaluation of 21 preliminary Phase 2 options by WSDOT in a feasibility study (KPF et al., 2006).

Proposed Action

The Proposed Action (SR 519 Intermodal Access Project – Phase 2: South Atlantic Corridor) would connect the existing westbound off-ramp from I-5 and I-90 to the current South Atlantic Street overpass and construct improvements at the intersection of First Avenue South and South Atlantic Street to accommodate traffic along this new route. A grade-separated crossing over the railroad tracks at South Royal Brougham Way would also be built. The improvements are described in more detail below and are illustrated on Exhibit 2-1. All proposed improvements would comply with the Americans with Disabilities Act of 1990 (ADA).

I-90 Off-Ramp to South Atlantic Street. A new two-lane elevated ramp connection would be built from westbound I 90 to terminate at a signalized T-intersection at South Atlantic Street. The new South Atlantic Street connection would serve westbound freeway traffic from I 90 and I-5. The new ramp would be entirely elevated, passing over Fourth Avenue South and Third Avenue South and connecting to the South Atlantic Street overpass southeast of Safeco Field.

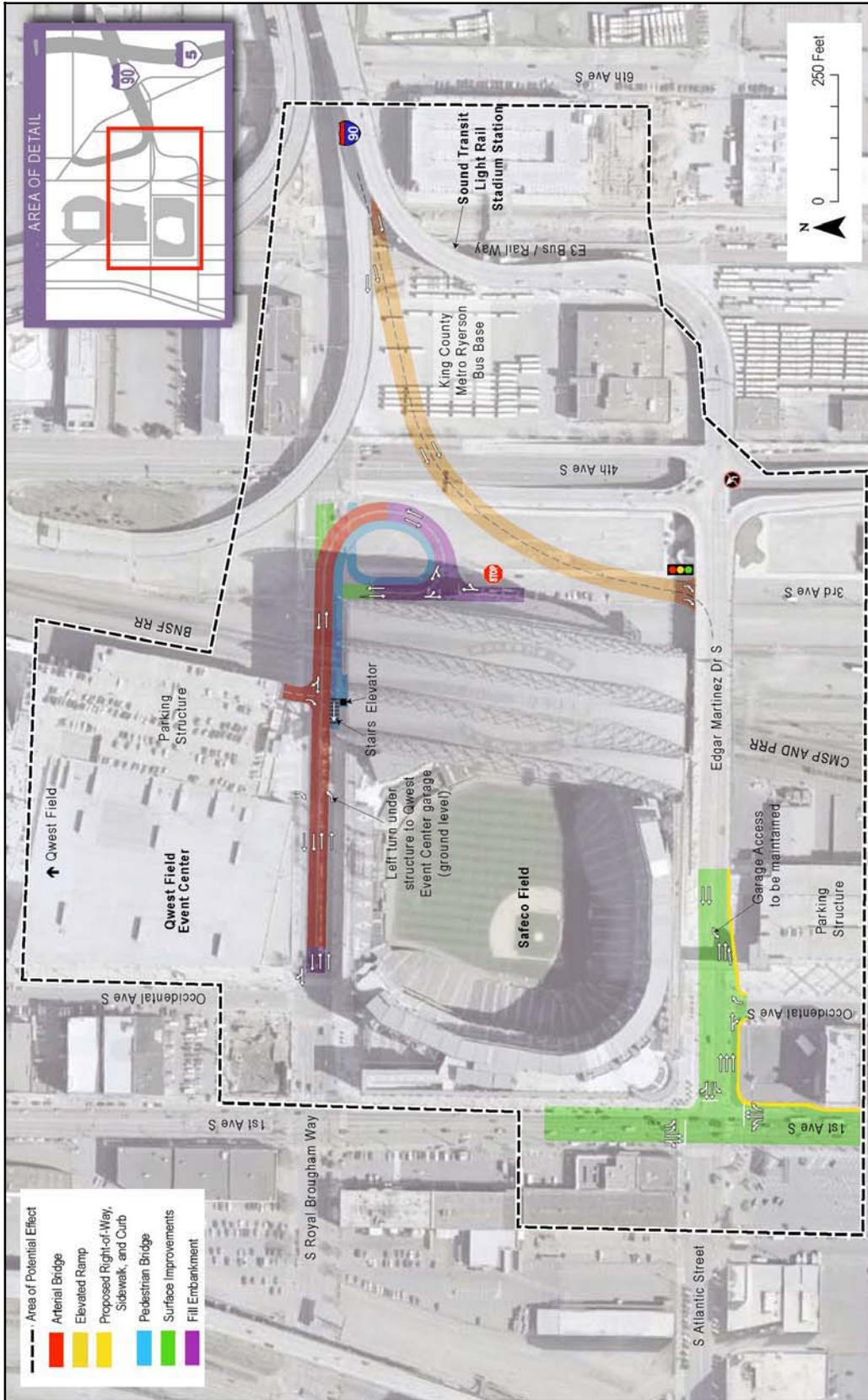


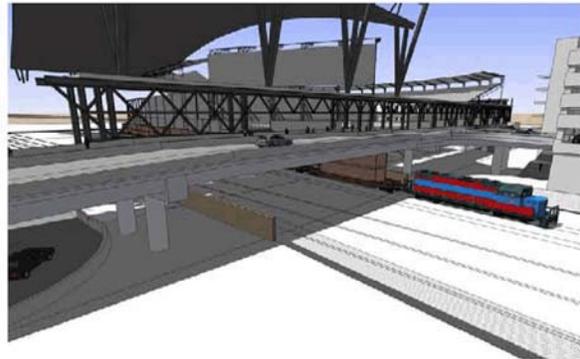
EXHIBIT 2-1. PROPOSED ACTION.

Exiting northbound I-5 traffic would be routed to South Atlantic Street, while exiting southbound I-5 traffic would have the option of taking either the new off-ramp to South Atlantic Street or the existing I-90 off-ramp to Fourth Avenue South.

South Royal Brougham Way Railroad Overpass. The South Royal Brougham Way at-grade railroad crossing would be closed and a new two-lane elevated structure would be constructed, connecting Occidental Avenue South to Third Avenue South. The new overpass would transport vehicular, pedestrian, and bicycle traffic over the BNSF Railway tracks and provide a new connection from South Royal Brougham Way into the second level of Qwest Field Event Center parking garage. The new ramp would accommodate local two-way traffic and provide ADA-compliant access..



Proposed ramp at east end of South Royal Brougham Way railroad overpass



South Royal Brougham Way existing at-grade railroad crossing (left) and proposed overpass (right)

Improvements to the Intersection of First Avenue South and South Atlantic Street. The intersection would be widened at South Atlantic Street to add a turn lane and new sidewalks at the east side of the intersection. In addition, existing parking lanes along First Avenue South would be converted into travel lanes to allow additional turn lanes onto South Atlantic Street.

Construction Components

Construction of the SR 519 Phase 2 project could require about 3 years, and WSDOT is exploring ways to accelerate this schedule. Construction would involve three project components:

- Improvements to the intersection of First Avenue South and South Atlantic Street could begin first, with construction starting in 2009 and lasting 6 to 9 months.
- Construction of the new I-90 ramp connection to the South Atlantic Street overpass could last 15 to 18 months and could begin as improvements to the intersection of First Avenue South and South Atlantic Street are underway.
- Construction of the new South Royal Brougham Way railroad overpass, likely beginning in 2010, could overlap with construction of the I-90 ramp and last 18 to 21 months.

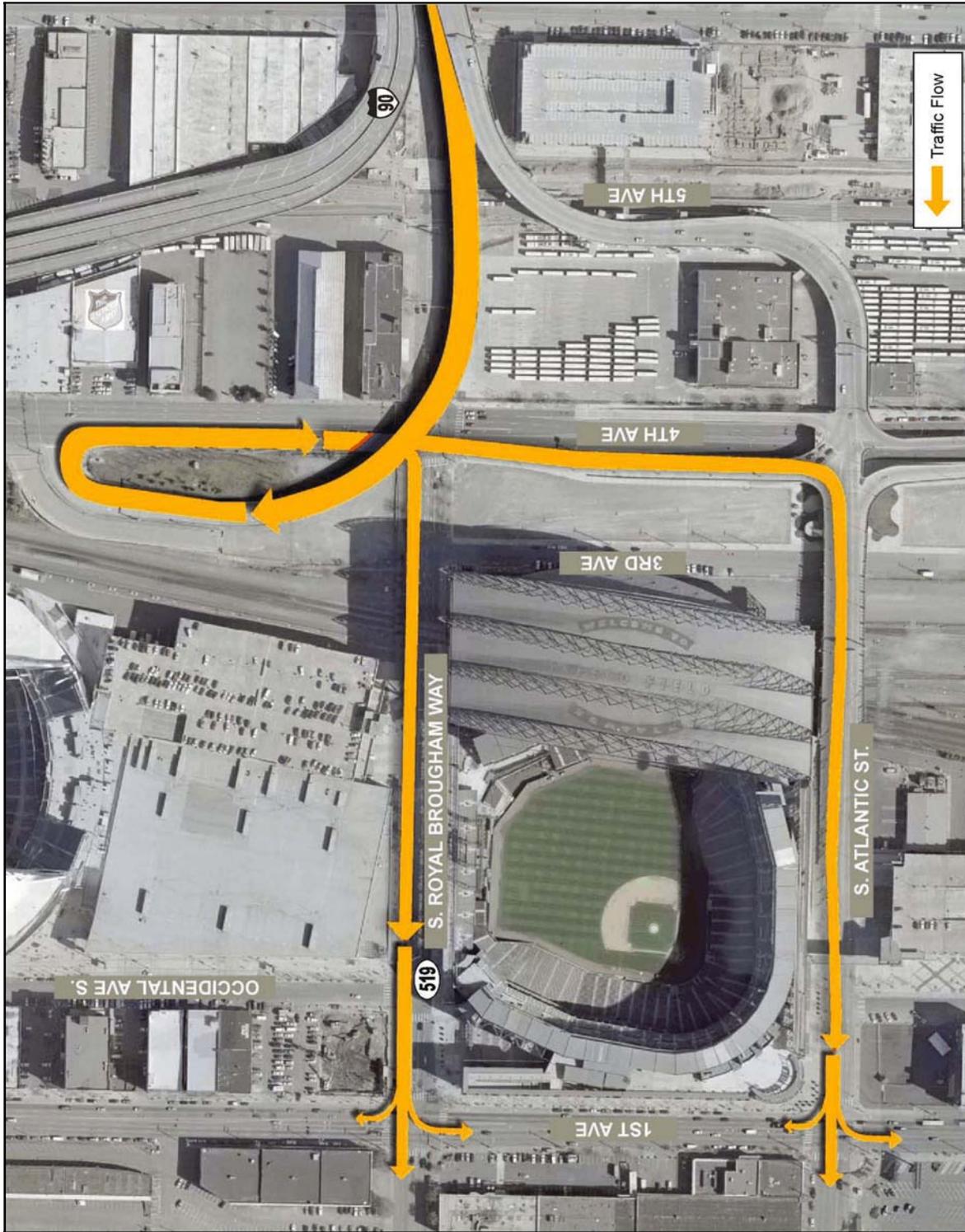


EXHIBIT 2-2. NO BUILD ALTERNATIVE.

Chapter 3 Methodology

A records search was conducted at the Washington State Department of Archaeology and Historic Preservation (DAHP) in Olympia to determine the distribution of previously recorded pre-contact and historical archaeological sites, ethnographic and ethnohistoric sites, traditional cultural properties, and historic buildings and structures within the project vicinity. The National Register and Washington Heritage Register were also reviewed. The City of Seattle Department of Neighborhoods, Historic Preservation Office was contacted to obtain information on a recent building survey in the APE. The City Historical Buildings and Landmark inventories were examined via the Historic Preservation Office's website. Background research on the environmental and cultural setting was conducted at NWAA's library, the Seattle Public Library, and the University of Washington Libraries. Other research included web-based photograph, map, and document collections of the Library of Congress, Museum of History and Industry, King County Assessor's Office, the City of Seattle Archives, and History Link. Geotechnical bore hole data from the GeoMapNW archives at the University of Washington and previous project reports were reviewed. The natural and cultural setting sections of this report were compiled from studies NWAA conducted for the Alaskan Way Viaduct and Seawall Replacement Program (Miss and Hodges 2007; Miss et al. 2007).

Field reconnaissance was conducted on June 12 and July 6, 2007 by NWAA senior historical archaeologist Lorelea Hudson and architectural historian Eileen Heideman to review previously recorded buildings and identify additional buildings, structures, or objects which were 40 years or older which were not recorded. NRHP and Seattle Landmarks eligibility determinations and recommendations for previously recorded properties were also revisited. New DAHP Historic Property Inventory database forms were completed for the three historic-period buildings in the APE. These forms include information from the previously completed Historic Property Inventory form, as well as an update on current condition, additional historical data, a location map, and photographs of each property.

1 Tribal Coordination and Consultation

NWAA/EHC

NWAA/EHC contacted the Duwamish Tribe, Suquamish Tribe, Muckleshoot Indian Tribe, Tulalip Tribes, Snoqualmie Tribe, and the Yakama Nation by letter to notify them of our participation in the project. A request was made for any information the tribes might be willing to share about cultural issues in the APE or its vicinity (Appendix A). This inquiry was for technical information only. No responses were received.

WSDOT

Formal government-to-government consultation with affected tribes is being conducted separately by WSDOT (Appendix A). WSDOT introduced the SR 519 Phase 2 to the affected tribes during meetings that were primarily about the Alaskan Way Viaduct Program. The affected tribes and meeting dates are as follows:

Muckleshoot Indian Tribe	March 7, 2007
Snoqualmie Tribe	March 28, 2007
Suquamish Tribe	April 25, 2007
Tulalip Tribes	March 6, 2007
Yakama Nation	March 22, 2007

WSDOT initiated formal consultation with the above tribes in early April 2007. Additional correspondence followed in early July 2007 (Appendix A). The Snoqualmie Tribe responded twice, first to express an interest and desire to participate as a consulting party in the SR 519 Phase 2 project and second, to agree with the definition of the APE (Appendix A)

WSDOT coordinated with the Duwamish Tribe, a non-federally recognized tribe, concerning the SR 519 project beginning in April 2007 by sending a letter explaining the project. This was followed by a meeting on May 9, 2007, and a letter, which described the APE, in July 2007. No response has been received to date.

Chapter 4 Affected Environment

1 The Natural Setting

Landscape

The project is located in the central Puget Sound basin along the shoreline of Elliott Bay, which extends from Smith Cove on the north to the mouth of the Duwamish River on the south. The modern topography and surficial geology of the Puget Sound region are the result of multiple widespread continental glaciations that extended southward from British Columbia into the northern Puget Lowland and along the western flanks of the Cascade Range. The latest glacial maximum, known in this region as the Vashon Stade of the Fraser glaciation, began about 17,000 -18,000 years ago and ended abruptly with the onset of climatic warming about 14,000 years ago (Easterbrook 2003).

Deglaciation occurred rapidly, and was accompanied by a complex succession of meltwater channels and ice-marginal lakes that existed during a period which probably encompassed less than 1,000 years. During deglaciation and immediately following, global sea level rose rapidly between 13,000 years ago and 7,000 years ago from a maximum low of about 390 feet below present sea level (bpsl) to about 30 feet bpsl. The rate of sea level rise then appreciably declined between about 6,000 years ago to 3,000 years ago.

As the glaciers retreated, the land area formerly depressed under the weight of the ice experienced isostatic rebound that lifted land levels between 197 and 262 feet within the Puget Lowland. Rebound appears to have stopped by 9,000 years ago at which time ongoing global sea-level rise began to drown the early Holocene shorelines (Dragovich et al. 1994). As sea level rose marine incursion resulted in formation of deltas at the head of Duwamish Valley at Auburn, and near Alderton in the Puyallup Valley (Crandell 1963; Dragovich et al. 1994).

Late Holocene Delta Growth in the Duwamish Valley

The delta of the Duwamish Valley near Auburn experienced rapid growth beginning about 5700 Before Present (B.P.) when a large-scale summit and flank collapse on Mt. Rainier resulted in the Osceola Mudflow. The flow passed down the White River drainage and spilled into the Green and Puyallup drainages. Following emplacement of the Osceola Mudflow, river aggradation (building up) and delta progradation (building out) filled the early Holocene Duwamish embayment of Puget Sound. Rapid incision into, and erosion of, the Osceola Mudflow resulted in increased fluvial sedimentation, leading to delta progradation. The overall rate of growth has been estimated between 22 and 19 feet per year (6.7 and 5.8 meters) (Dragovich et al. 1994). Current research indicates the Duwamish delta arrived near Terminal 107 on the Duwamish River between 1520 and 2120 B.P.; marsh deposits set into the delta sand began forming by 780-930 calendar years B.P. (Zehfuss et al. 2003). Delta topset beds

composed of andesitic sand under the flood plain at Terminal 107 probably predate 1020-1050 B.P. because they contain animal burrows at elevations at or above modern high tides. Uplift along the Seattle fault about A.D. 900-930 raised this burrowed sand about 16.4 feet (5 meters) and formed a prominent single valley-floor terrace that stood above the level of historical floods (Collins and Sheikh 2005a; Zehfuss et al. 2003).

Earthquakes

The project is located in the northern portion of the Seattle fault zone. The fault, and its associated fault strands, extend from the Cascade Range foothills to Hood Canal and is one of several fault zones in the Puget Lowland that serve to absorb crustal foreshortening resulting from subduction of the Juan de Fuca plate under the North America plate (Nelson et al. 2003; Sherrod 2001). Coastal tectonic research has documented a large earthquake on the fault dated to 1050-1020 B.P. (Bucknam et al. 1992; Atwater and Moore 1992). During this event Alki Point at the southern entrance to Elliott Bay was raised more than about 13 feet (4 meters) and Restoration Point on Bainbridge Island was uplifted about 16 feet (5 meters). At the same time, the West Point cusped spit just north of Elliott Bay subsided approximately three feet (1 meter) (Atwater and Moore 1992). At the time of the earthquake the Duwamish delta would have been about 5 miles south of the fault (Sherrod 2001).

Contact-Era Shoreline of Elliott Bay

Elliott Bay, exclusive of the mouth of the Duwamish River, was the location of three tidal marsh complexes: West Point, Smith Cove (the largest of the three), and the area now covered by the Occidental Square area in downtown Seattle (Collins and Sheikh 2005a). In the mid-1870s the shoreline south from Smith Cove to the area of what is now Pioneer Square was characterized by bluffs or low banks. An important feature of the far southern bay shoreline was the delta at the mouth of the Duwamish River and the 1,400 acres of tide flats comprising the intertidal zone in front of the upper delta plain. Though the tideflats were quite extensive, the overall amount of tidal marshes in the Duwamish River estuary itself was relatively small compared to the river's size because the river's terraces substantially narrowed the flood plain (Collins and Sheikh 2005a and b).

Resources

Elliott Bay and the Duwamish Delta provide important and diverse resources that influenced the locations and times of occupation for pre-contact period people. The tidal flats, the shoreline below the bluffs and the heavily wooded slopes above the shoreline supported a wide range of habitats. The open water harbors squid, shrimp, various sea mammals, and runs of anadromous fish including sockeye and chinook salmon and steelhead trout. Bottom dwellers include ling cod, flounder, sole, rockfish, and invertebrates such as clams, sea cucumbers, crabs, and octopuses. The intertidal zone, which extended along the waterfront, included many invertebrates, among them crabs, shrimp, clams, oysters, mussels, chitons, barnacles, and sea urchins. Portions of the relatively young tideflats were water-saturated but above the mean high tide and were covered with salt-tolerant sedges, grasses, and rushes. They also hosted migratory and resident birds while the forest above the shoreline was inhabited by various mammals, large

and small, and provided important cedar and other trees and plants useful for wood, fiber, food, tools, and medicines.

SR 519 Phase 2 APE

More specific data about the sediments in the SR 519 APE are gleaned from geotechnical bore log data. The stratigraphic cross section illustrated in Exhibit 4-1 summarizes the results of geotechnical investigations along the south side of South Royal Brougham Way within the study area (CH2MHILL 2007). The area is underlain by three primary stratigraphic units of which the uppermost is a historical fill assemblage divided into a lower hydraulic fill (**Hh**) and an upper heterogeneous fill (**Hf**) placed by a variety of methods. The lower fill is dominated by sandy sediments, with some silt, deposited by sluicing or dumping that occurred in association with various regrade projects carried out intermittently since 1895. Hydraulic fill tends to comprise the bulk of the lower fill, but the upper fill overlying the hydraulic fill is highly variable and ranges from uncontrolled dumping events to places where engineered fills have been placed. The sediments underlying the two types of fill and comprising the intact pre-fill deposits are predominantly silts, which have been interpreted to represent esturine (**He**) sediments, that is, the sediments underlying the tideflat surface. The tideflat sediments represent deltaic and fluvio-deltaic sediments deposited in Elliott Bay during delta progradation at the mouth of the Duwamish River. The silt deposits occur in conjunction with bodies of more sandy deposits (**Ha**), typically composed of well-sorted fine to medium sand, which have been interpreted to represent alluvium deposited on the areas of the tideflats dominated by higher energy depositional systems, such as spillover of flood and ebb flows in tidal channels, or deposition of sandy crevasse splays (deposits resulting from levee breaks) and overbank sediments during flooding on river distributary channels. The fill and the tideflat sediments in turn rest on a variety of lithofacies created during the advance and retreat of Pleistocene continental ice sheets in the Puget Sound basin.

Maps of coastal areas generated by U.S. Coastal Geodetic surveys in the late nineteenth century (called T-sheets) offer another perspective on the tideflat environmental conditions shortly after the time of contact. In Exhibit 4-2 the APE overlays the 1875 T-sheet for Elliott Bay, and shows that the study area straddles a relatively large channel system that emptied into Elliott Bay to the north near the foot of South King Street. Since the channel heads on the tideflat, it is functionally a tidal channel, but the size suggests it could be a former distributary fluvial channel that has been partially buried as a result of sediment accretion on the advancing delta plain. Furthermore, a borehole log outside and west of the study area near Railroad Way South noted reeds at the fill-tideflat contact, suggesting the tideflat surface exhibited at least minor topographic relief in the inter-channel areas (GeoMapNW 2007).

The T-sheets and early photographs (cf Exhibit 4-7) illustrate the tideflats were not the featureless plain that later historical photos, taken after substantial filling had already occurred, would suggest. Such a conclusion is not surprising when one considers that during seasonal high tidal ranges, ebb and flood tidal flows over the channel banks could create strips of higher elevations along portions of the tidal channels; additionally, during large floods, sediment-laden Duwamish River flood waters may have been routed to the bay through some of the tidal channels.

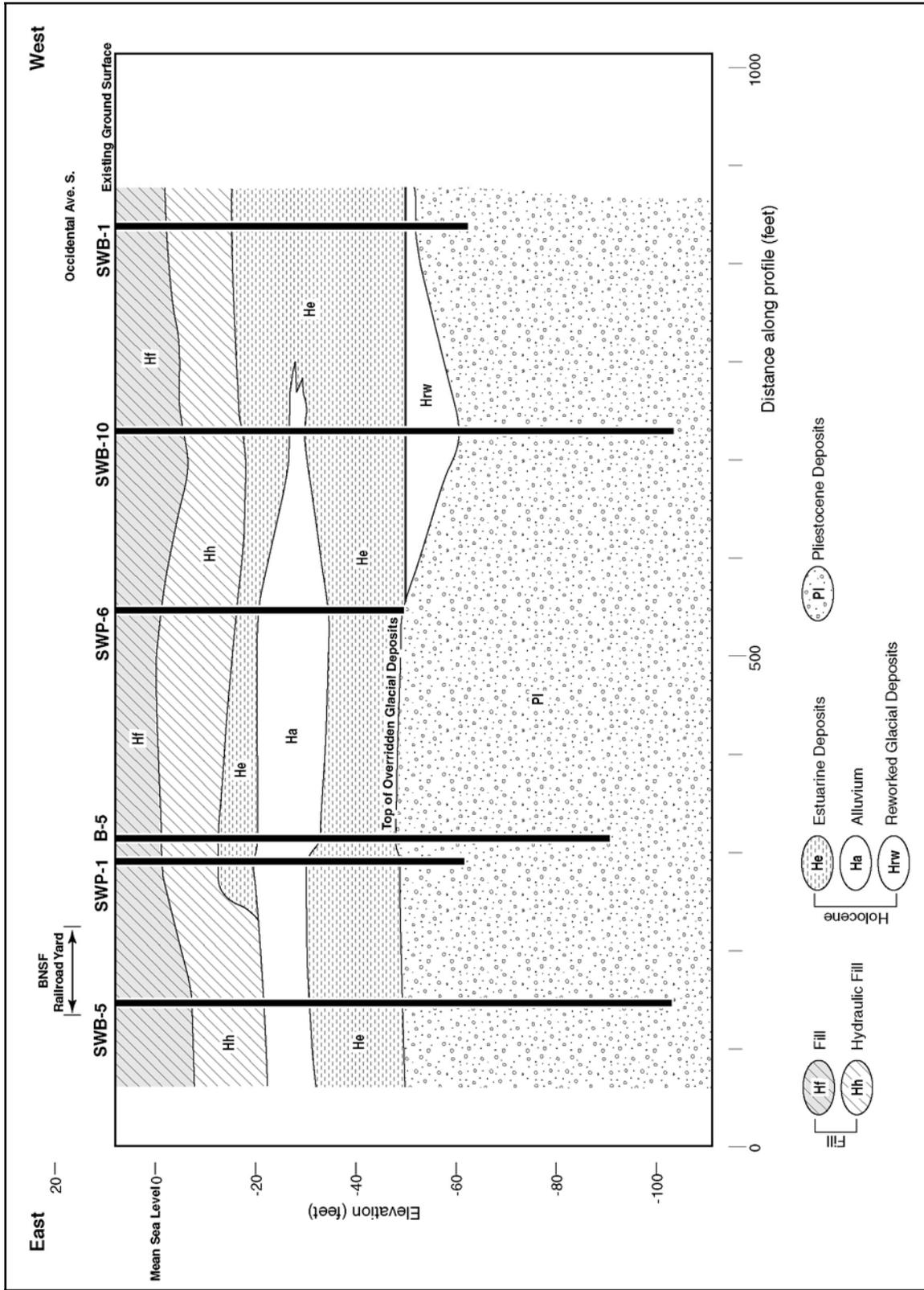


EXHIBIT 4-1. STRATIGRAPHIC PROFILE ALONG SOUTH ROYAL BROUGHAM WAY BETWEEN SOUTH THIRD AVENUE AND OCCIDENTAL AVENUE SOUTH (CH2MHILL 2007:4-13).

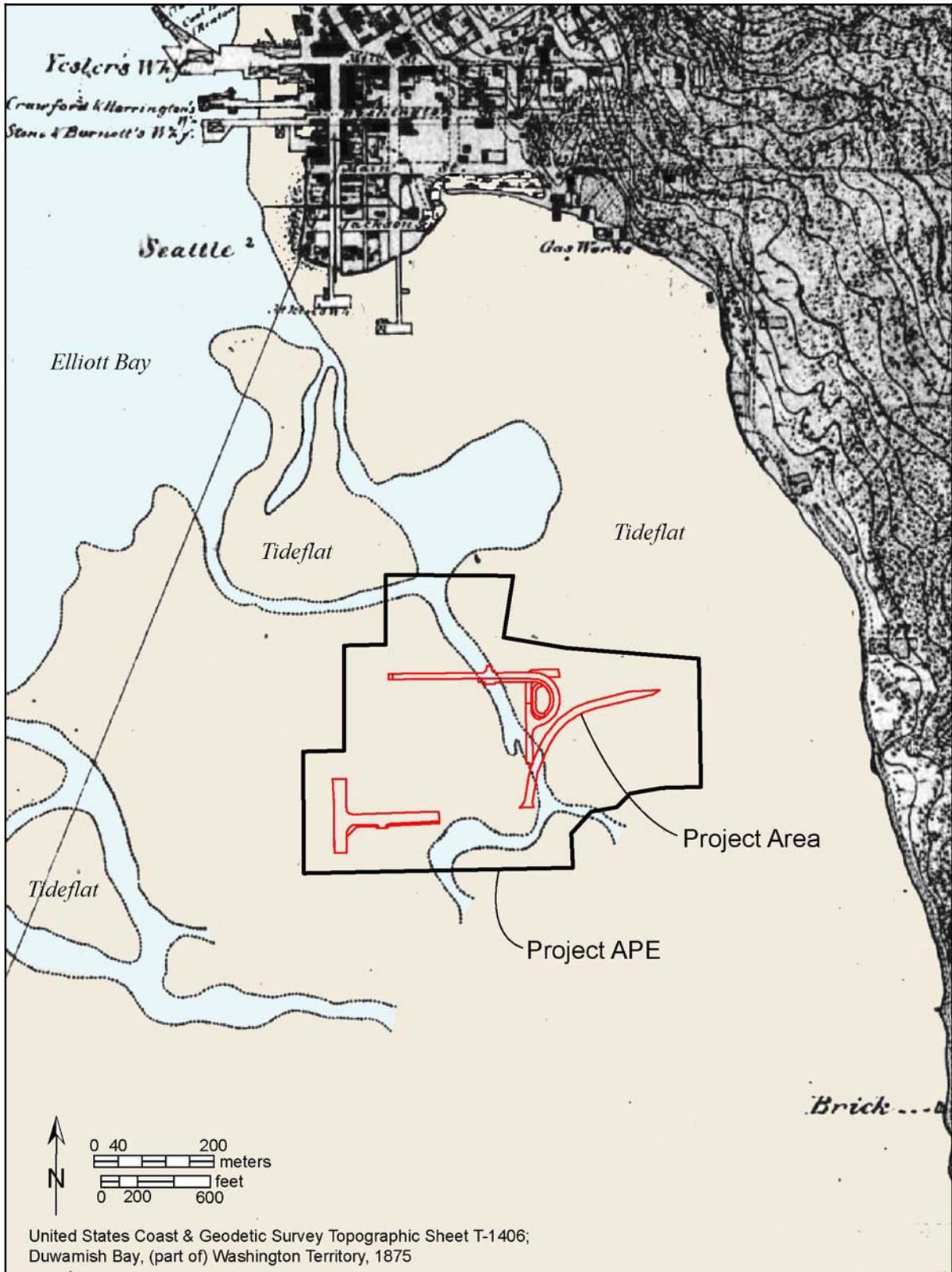


EXHIBIT 4-2. USCGS T-SHEET SHOWING THE PROJECT VICINITY IN 1875, BEFORE TIDELAND DEVELOPMENT.

2 Cultural Setting

Pre-Contact

The earliest settlement of Washington state occurred at least 11,000 years ago based on finds of extinct mammals such as the Manis Mastodon near Sequim, and scattered finds of artifacts thought to be of similar antiquity called “fluted” points. The closest discovery of these artifacts to the APE is associated with an ancient peat bog near Maple Valley, about 25 miles southwest of Seattle. Pre-contact period sites from around the Pacific Northwest, suggest continuous habitation throughout the ensuing 11,000 years (Ames and Maschner 1999; Matson and Coupland 1995). In the Puget Sound region assemblages of stone tools called “Olcott” that cannot be dated by any current means are found on the edges of terraces more often away from the salt water shoreline, a position that suggests siting for expansive view as might benefit hunters. Such locations may also have been chosen to avoid the unstable bottoms and slopes of valleys whose rivers carried remnants of glacial meltwater and to avoid marine shorelines responding to rising and falling sea levels as the land bounced back after being depressed by the weight of glacial ice. Early shorelines themselves were inundated by about 5,000 years ago by rising sea levels that have accompanied continued post-glacial warming making evidence of marine-oriented settlement before this time difficult to acquire.

Sites dating after about 5,000 years ago are more common in the region. More recent archaeological evidence in the Puget Sound region documents significant changes in technology, subsistence, and settlement patterns over the past several thousand years. During this period, population increased and groups began to organize themselves in more complex ways. The subsistence base included a broad spectrum of locally available resources. The period between 3000 B.P. and 1000 B.P. saw the emergence of a semi-sedentary settlement pattern based on the central village with specialized seasonal camps, an increasingly sophisticated use of storage technology, and emergence of ranked societies. The final 1,000 years of coast prehistory are characterized by permanent houses in central villages, a salmon-based economy, and ascribed social status (Matson and Coupland 1995; Morgan 1999).

Ethnography and Ethnohistory

The APE is in the traditional territory of the Duwamish, a Lushootseed-speaking group that lived in villages on the shores of Elliott Bay, Lake Washington, Lake Union, Salmon Bay and on the banks of the Duwamish, Black, and Cedar rivers. Today many Duwamish descendants have chosen to become members of federally recognized tribes including the Muckleshoot Tribe, Snoqualmie Tribe, Suquamish Tribe, and Tulalip Tribes, while others continue to seek independent Duwamish tribal status. Like many other Puget Sound groups, the Duwamish traditionally followed a seasonal round that was tied to available resources. The region is one of mild climate and abundant resources and usually enough salmon could be harvested in a few weeks to last the winter. In spring and summer, people dispersed from winter villages of cedar plank houses to live in temporary camps to fish, hunt land and sea mammals, and collect roots, berries, and other plants. In winter preserved forms of these foods supported the village while important ceremonial work was completed. Winter was also important for establishing and

maintaining social relationships. Heads of households hosted public events marking changes in status like naming, puberty, marriage, or death. The events also demonstrated the households' social stature. The more important the family, the more guests were welcomed, representing ties of marriage, adoption, trade, and social obligation (Miller 1999:20-21).

Ethnographic Sites

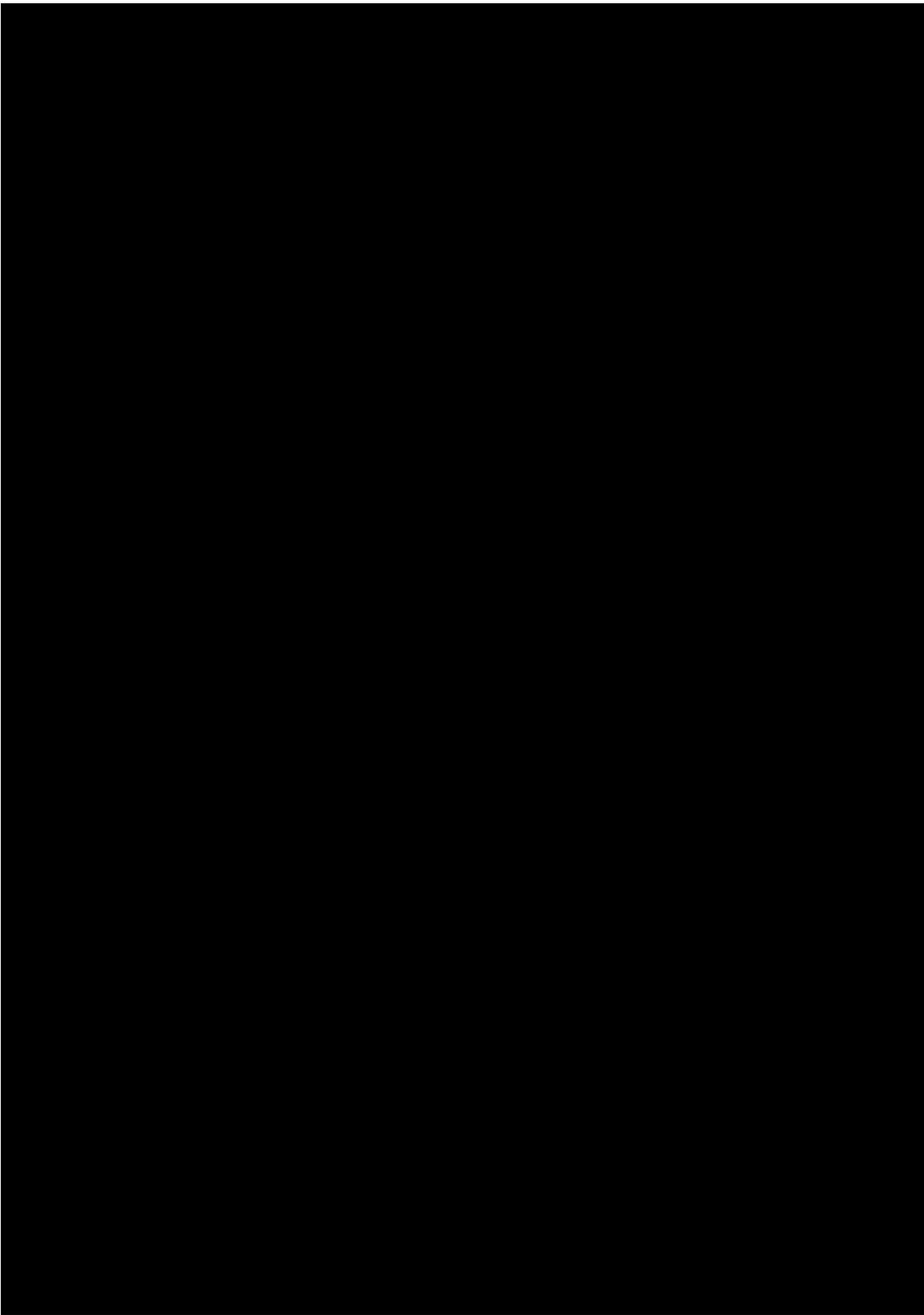
A number of named locations are known as the result of direct inquiry by anthropologists and other interested persons in the late nineteenth and early twentieth centuries. They represent the memory of a people intimately familiar with the local landscape. These locations are listed in Exhibit 4-3 and shown on Exhibit 4-4. While none are in the SR 519 Phase 2 APE, named locations outside the project illustrate the kinds of places remembered. Undoubtedly, these are only a fraction of those places once named.

EXHIBIT 4-3. ETHNOGRAPHIC SITES IN THE APE VICINITY BASED ON WATERMAN (2001).

No.	Orthography: Waterman 2001 (Lushootseed)	Translation	Description
23	Djidjilä ^l l ³ tc (d ³ d ³ älaiç)	a little place where one crosses over	A promontory topped by a few trees with a lagoon behind it, an area which is now roughly Yesler Way to S King St, and First Ave S to Second Ave S. A trail led from the beach on Elliott Bay to the lagoon. There was a village on each side the promontory.
24	Tux pa ³ ctEb (dæx ³ paçəb)	place for setting things out	A little spit or beach at the edge [REDACTED] the Duwamish River.
25	Teta ³ lks (tətälxqs)	A little strong point	A small promontory on an island. The place is said to have been used as a lookout point by the Indians, who built a stockade there. [Thrush (2002) places this further south in Georgetown, and associates it with the midden found at the County Poor Farm. Also says it is buried under the [REDACTED]]
26	Slu ³ wiL (slu ³ wi)	a perforation for a canoe, a short cut, a canoe pass	The slough passing to the south of the island (#25) above. In the present case the word refers to a grassy marsh intersected with channels, into and through which canoes can be pushed.
27	XwEg ³ (tətälxqs)	slough	The largest of the branches into which the Duwamish River divides at its mouth.
28	Q ³ ulg ³ ula ³ di (qəlqələdi ³)	shaggy, tangled; uprooted tree/stump	A place on the shore the slough (#28) where there were a lot of snags so that no one could land.
29	Ts ³ E ³ kas (çəqas)	muddy; something dirty	Harbor island, a flat surrounded by watercourses and rather marshy. George Si ³ towaL, an informant, lived in a float house here with his wife until they died in 1920.
29a	Ha ³ a ³ pus	none	A small creek draining across a flat on the [REDACTED] the Duwamish River.
30	Tul ³ a ³ lt ³ or (tu ³ älal ³ x ³)	Herring's house; herring house	A village site on [REDACTED] the Duwamish, at the foot of the bluff of [REDACTED]
31	Tua ³ wi	trout	[REDACTED] draining into Young's Cove in West Seattle.
32	Cuxu ³ tsE ³ xud (səx ³ uçəxəd)	something to split with; by means of splitting	A small creek draining down a little gully [REDACTED] in West Seattle.

Historic Native Sites

A second set of locations has been gleaned from historic accounts of Native American presence in Seattle, particularly photographs and records of encampments, cemeteries, and work areas. Thrush (2002) is particularly valuable in this respect because of his extensive review of primary



sources. These too, are point specific locations, some overlapping with the named ethnographic locations. The locations are listed on Exhibit 4-5 and shown on Exhibit 4-6. These locations are considered to have high potential for cultural remains.

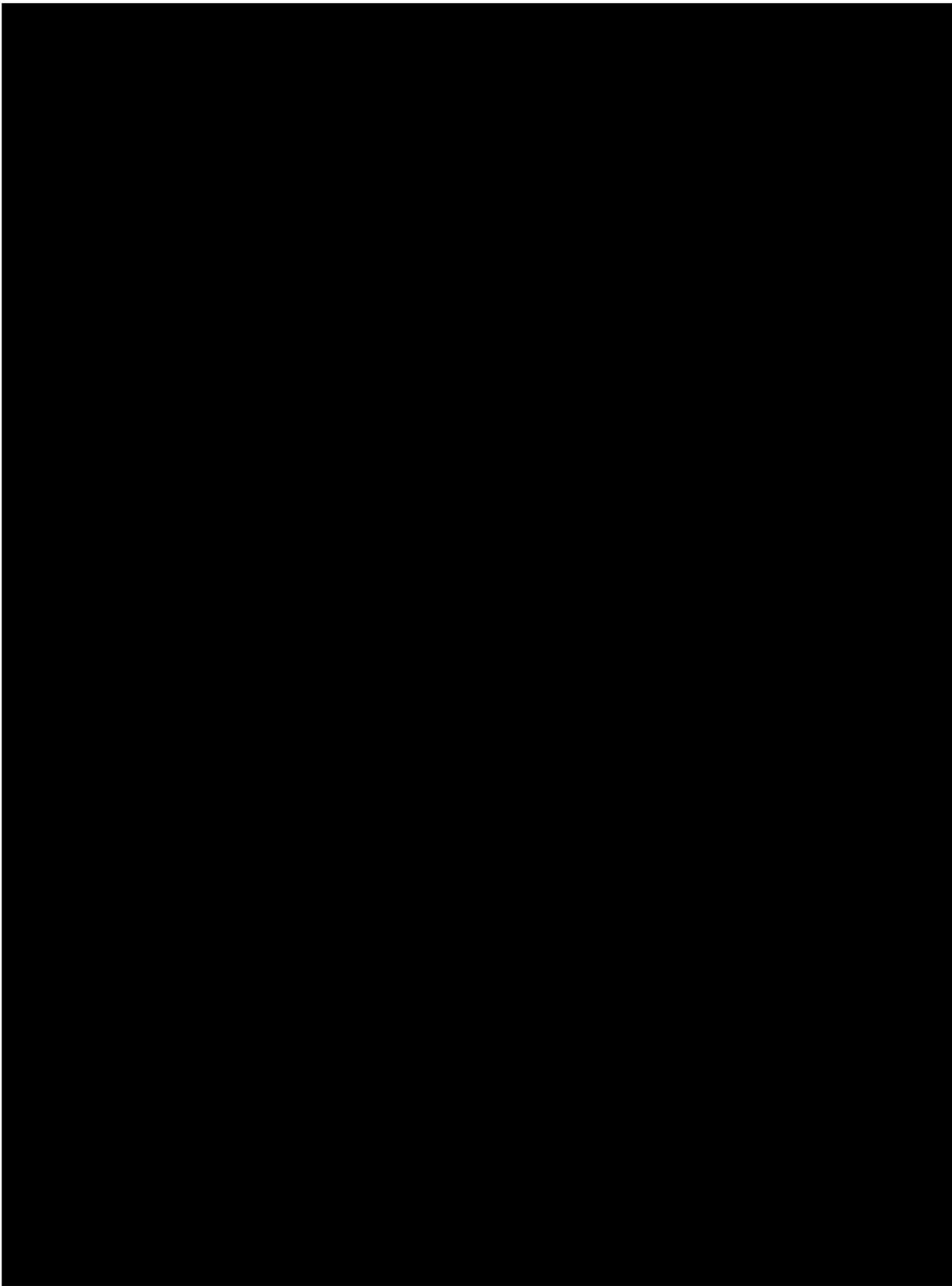
EXHIBIT 4-5. LOCATIONS NAMED IN ARCHIVAL SOURCES.

No.	Name or Type	Citations	Description/Comment
1	Encampment	Phelps 1855-56	Native encampment, between Yesler's Mill and the stockade at the foot of [REDACTED] Phelps map marks this as being "Curley Camp." See also Baba'kwob above.
2	Trail	Buerge 1981	Trail from Elliott Bay to Renton
3	Trail	Kellogg 1912	Trail between Elliott Bay and tidal lagoon, in the vicinity of S. Main, between First and Second.
4	Ballast Island	Dorpat 2005, Bass 1937:172 Sanborn Map 1888: sheet 2 Soule ca. 1891	Foot of Washington, between Washington and [REDACTED] (see Sanborns and photos). Native Americans would gather here before traveling inland to pick hops (first hops harvested in 1866). After 1900, this was almost entirely S'Klallam people (Thrush 2002:192)
5	Encampment	Glover 1878	A native encampment on the beach between Main and [REDACTED]
6	Djidjkila'lltc Tseettsal-al-ich	Waterman 2001, Phelps 1855-56; Kellogg 1912; Thrush 2002:69, 100	Encampment between First and [REDACTED], S. King and [REDACTED] Also shown on Phelps ca. 1856 map and described in letter by Vivian Carkeek. Watt, in Four wagons west, quotes Denny as seeing the ruins of an Indian hut on the headland south of the stream that would become [REDACTED] BIA records from 1856 also describe an encampment of 40 behind Madam Damnables (in the same place shown on the Phelps map) (Thrush 2002:100).
7	Dancehouse	Crow 1926 cited in LAAS 2004	May be related Djidjkila'lltc; reported to be near First Ave S and [REDACTED]
8	Encampment	Thrush 2002:132	Seasonal hop pickers on the tidelands south of Yesler's mill and the Lava beds in the 1880s
9	Encampment	Kellogg 1912; Thrush 2002:18	"Back behind the marsh at the beach was an Indian camp and a small stream of fresh water came down from the hill". Probably between about S. Washington and [REDACTED] and Third and [REDACTED] In 1878, an encampment on a "sand reef" across from Main St at the edge of the sawdust flat (the now filled lagoon).
10	Landing Place	Anderson 1898	Photo shows a Native American woman with a basket standing near a canoe, captioned "This Indian squaw was photographed in 1898 by Oliver P. Anderson about two blocks south of King St, near First Ave." May be posed (see Exhibit 4-7).

Area 10, the Landing Place, is in the vicinity of the APE, north of South Royal Brougham Way and east of First Avenue South, where Qwest Field is now located. A 1898 photograph which suggests this location clearly shows the surrounding tideflats (Anderson 1898) (Exhibit 4-7). This section of tideflats was divided by deeper channels and open areas of water which were filled by 1899 (USCGS 1875, 1899).

3 History

The Duwamish, whose traditional territory included land bordering on Puget Sound, called this inland sea *Hwultch*, meaning simply salt water. With a long tradition of fishing and hunting following an established seasonal round, Native peoples of this area found their lifestyle



radically changed with the coming of outsiders, including those who chose to make their own settlement on a spit of land called *Djidjila'letch* or Little Crossing–Over Place, a former Duwamish village site. The transformation that occurred with the advent of non-Native peoples to the region has fittingly been described by the term *sp'əlác'* or “capsizing,” a metaphor originally used in Twana mythology for the present natural world replacing the ancient world (Thrush 2002:32; Elmendorf 1993:115 as cited in Harmon 1998:14; 256-257).

Early Seattle 1851-1889

The first non-Native settlements within the current city limits of Seattle were established along the Duwamish River, which flowed into Elliott Bay, and on a forested peninsula just to the north of the river’s mouth. The Collins, Maple, and Van Asselt families planned to farm and staked their claims in the Duwamish Valley in September 1851. Within days another party, whose members were more interested in commercial development, chose land on the headland jutting into the bay. On a point known by the Native peoples as *sbaq"abqs* (called Squaquamox by early settlers), David Denny, John Low, and Lee Terry planned to start a new town that they hoped would become a trading center for the northern reaches of Puget Sound. The rest of the party arrived at the new settlement on the ship *Exact* in mid-November. With a total of 12 adults and an equal number of children, the Denny party, as the group was called collectively, formed the nucleus of a new community. The site they chose was first known as New York, but when Lee’s brother, Charles Terry, platted it in May 1853, he had changed the name to Alki (Eals 1987:14, 17, 19; Newell 1977:30-32, 37; Beaton 1914).

Few of these pioneer settlers actually remained very long at the New York-Alki location. William Bell, Carson Boren and David Denny’s brother, Arthur, first broke off from the rest of the party and located claims along the eastern shore of Elliott Bay in February 1852 (Exhibit 4-8). They believed this section of the bay offered a more protected harbor for boats and also more extensive forest lands, stretching inland from the waterfront, which would provide better logging opportunities on their lands. According to Arthur Denny, the first three claims were laid out at one time, with the southern boundary at what is now the junction of King Street and First Avenue South and its northern edge at the current intersection of First Avenue and Denny Way. Families moved to the site in April 1852 and began to build cabins to solidify their claims (Denny 1979:15, 39).



EXHIBIT 4-7. NATIVE AMERICAN WOMAN ON THE TIDEFLATS SOUTH OF KING STREET AND EAST OF FIRST AVE. S., 1898 (Photo by Oliver P. Anderson, MOHAI Image SHS-321).

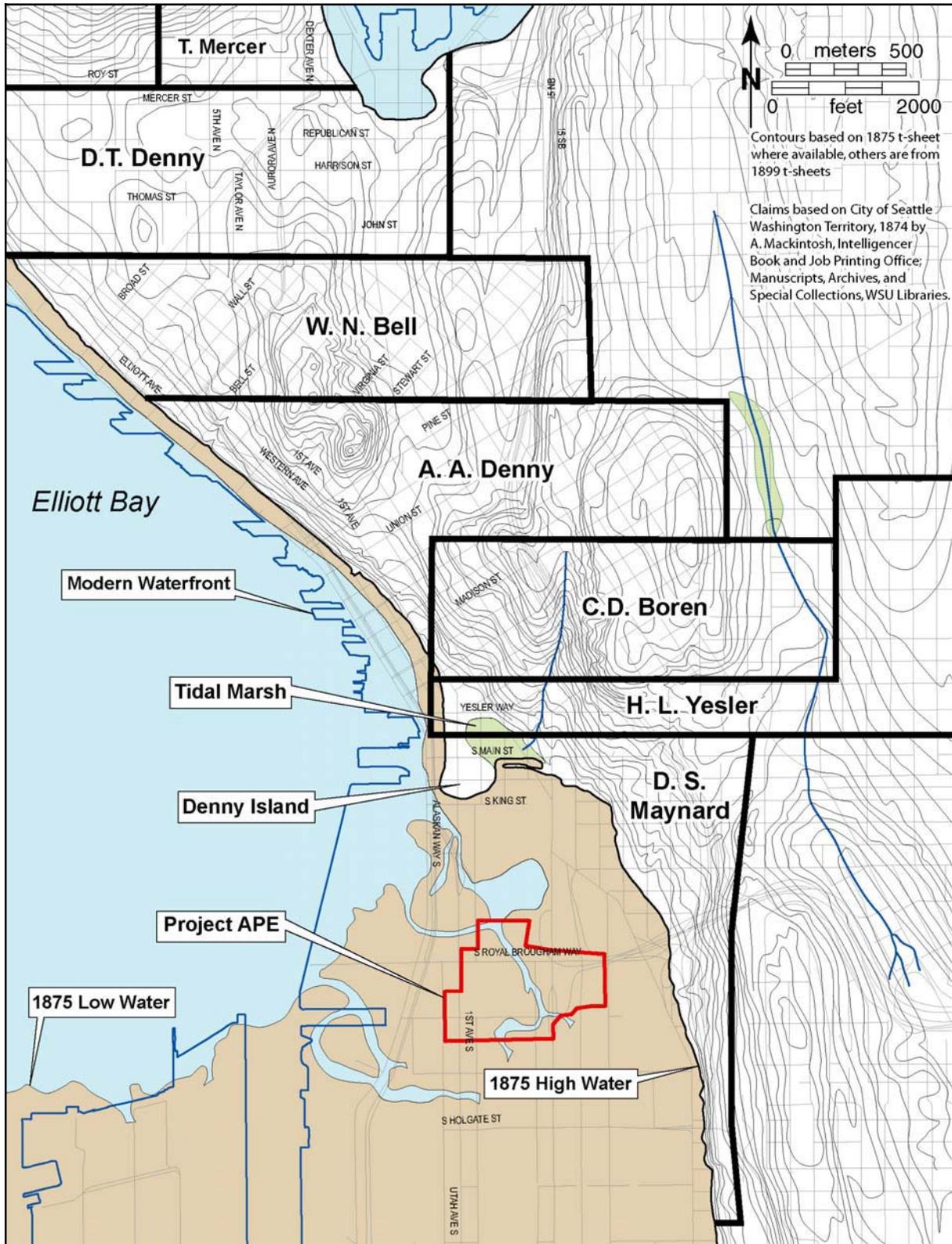


EXHIBIT 4-8. LAND CLAIMS ALONG THE WATERFRONT.

Another settler, David S. “Doc” Maynard, arrived in late March with the idea of packing salmon for trade with San Francisco. He had met Chief Sealath who brought him north from Olympia and on whose advice Maynard decided to locate his salting and packing enterprise on the point of land south of present-day Yesler Way, which he eventually homesteaded. The south and west boundaries of his claim bordered the tide flats of Elliott Bay and the Duwamish River north and east of the SR 519 project. Maynard’s point of land, originally called Piner’s Point, was known locally as simply the Point or Denny’s Island. This small peninsula extended from what is now First Avenue South between Yesler Way and Jackson and was described as about one-quarter mile long and 1,300 feet wide and separated from the mainland when the tide backed up into what is now Occidental Avenue (Watt 1959:66, 68-69).

Yesler’s Mill

Henry Yesler came to the struggling community in 1852 with the idea of installing a sawmill but found no suitable unclaimed land along the shoreline. Maynard and eventually Boren agreed to change the boundaries of their claims to give Yesler a strip of land with water access to operate his mill. They believed that such an industrial enterprise was a necessity for a thriving settlement (Beaton 1914:6). Yesler’s mill ultimately provided jobs for residents during Seattle’s precarious early years of existence and became an essential economic mainstay (Watt 1959:73-74; Andrews 2005:15-16). By March of 1853, Yesler’s mill began sawing lumber. The main mill building was located by the beach on the thin strip of land that connected Denny Island to the mainland. The west portion of the mill was actually supported by pilings and sat over water at high tide (Finger 1968:17). Yesler’s was the first steam sawmill on the Sound, but his was very quickly followed by a number of other entrepreneurs who were drawn by the area’s well-timbered lands, which offered so much potential for milling and exporting lumber products.

Lumber turned out by the Yesler mill was used in the construction of nearly 20 frame structures in the Seattle community by late summer of 1853, but because of the small population of the region, most production of Puget Sound sawmills was for export. Yesler’s goal was to develop markets in California and other parts of the world and by 1854 orders kept the mill running nearly 24 hours a day. San Francisco was the primary destination of most of the mill’s lumber, but ships bound for Hawaii and even Australia also carried Yesler’s products (Andrews 2005:16; Finger 1968:62).

Yesler’s work force was also quite diverse: mill hands included European immigrants and Indians as well as many Americans. Often, many of the workers lived near the mill and spent their wages at the mill store which stocked food, clothing, tools, household articles, tobacco, and even seed. Yesler also built a cookhouse, with lodging for some of his workers, his own quarters and a company office. This building became an early civic center when the community had no other real public buildings (Andrews 2005:17-18; Finger 1968:17; Yesler 1951:275).

Native and Non-Native Relations

The growth of Seattle’s population and development of commerce and industry slowed in mid-1850s as the result of unrest between Natives peoples and the new settlers. Washington Territory was created in 1853 and Isaac Ingalls Stevens was appointed the first territorial

governor and also named Superintendent of Indian Affairs. Stevens was convinced that the reservation model represented the best alternative for Indians of Washington Territory, even though Congress had turned down treaties authorizing reservations in California and Oregon just prior to his arrival in the Northwest in November 1853. Near present-day Mukilteo on January 22, 1855, Stevens concluded the Point Elliott Treaty with the Duwamish and other Puget Sound-area tribes, who ceded most of the north Sound region to the United States in return for more than 22,000 acres on the Tulalip Reservation as well as several other smaller reserves (Harmon 1998:78-80; Marino 1990:169-170; Richards 1993:202-204, Ruby and Brown 1986:244).

Throughout the territory, the treaty-making process angered many Indians who had already lost land to the growing number of settlers. Arthur Denny later said that he was warned by Patkanim of the Snoqualmie about troubles brewing among Native peoples of the eastern part of the territory as early as the fall of 1854 and winter of 1855. Discontent with the terms of the treaties and continuing incursions on reservation lands led to warfare between the Yakama and the United States military in the fall of 1855, and hostilities escalated as other tribes joined the uprisings in what became known collectively as the Treaty Wars (Denny 1979:68; Bancroft 1890:108-113; Eckrom 1989:90-95).

In Western Washington, the naval sloop-of-war Decatur, which had been sent to protect American interests in the Northwest, spent nearly nine months during this period in and around Elliott Bay. Tensions increased, however, with the deaths of nine settlers as well as one military officer and several other army regulars at the hands of Indians in the White River valley south of Seattle (Finger 1968:30-33; Bancroft 1890:118-123; Eckrom 1989:90-95). In late January 1856, the Seattle settlement briefly came under assault in an incident that later was referred to as the Battle of Seattle. The battle lasted one day and although tensions continued, there was no more open warfare. Later in 1856, Henry Yesler traveled around the area talking to Native peoples, and he persuaded 150 to move to the Port Madison reserve on Bainbridge Island. According to one source, by the end of the year only about 50 Indians remained in Seattle, living in small houses made of excess lumber from Yesler's mill (Finger 1968:37-39). For a number of years, business in the small Seattle community was stagnant, but Seattle's waterfront location and nearby natural resources gave it advantages that eventually led to renewed growth and economic expansion.

Growing Community

When Yesler's sawmill was in full production, mounds of sawdust grew and were used to fill in the nearby tidelands and swamp. A well-known character of early Seattle was Nis Jacob Ohman, known as Sawdust Ned or Dutch Ned, whose job was to fill his red wheelbarrow with the dust and dump it in nearby tidelands. Dutch Ned was said to have spread most of the sawdust on parts of Commercial from Mill Street to Washington and on Mill Street from Second Avenue to the waterfront (Bass 1937:18-19; Bagley 1929:55; Watt 1959:163). Henry Yesler ultimately built four sawmills, three of which were on Puget Sound. He replaced his first mill in 1869, moving it one block west of its original location at Yesler and First Avenue. This mill burned a decade later and was replaced by a third mill which burned in 1887 (Finger 1968:55; 339-34; 354-355).

Much of Seattle's early industry was located on Yesler Wharf which extended from Mill Street (now Yesler Way) into Elliott Bay. Stetson and Post Company, for example, grew from a grist mill on the wharf until they purchased a large section of tidelands at First Avenue South near King and Weller Streets which allowed the company to build a larger sawmill that employed 117 men in 1875. The mill was destroyed by fire and rebuilt several times, the last being after the Great Fire of 1889 (Bagley 1929:I:250, 252). By the 1870s, Seattle had 154 businesses including a tannery, two boilermakers, two sash and door factories, wagon makers, a cooper, and two shipyards and a wharfbuilder (Murphy and Harned 1872). In 1882, there were nearly 50 manufacturing and industrial concerns out of a total of more than 420 businesses. The city had also become a food-processing center, with a coffee and spice mill and candy makers, in addition to the flour mill and brewers and makers of soda water and hard breads (Elliott and Sweet 1882:67-87; Grant 1891:262-263; Buerge 1986:23). Filling the tidelands provided an ever increasing number of acres for industrial development as residential development moved north and east.

Railroads

Seattle's growth was fed by a number of events that occurred in the interior Northwest, most notably, gold discoveries in Canada and Idaho in the 1860s and closer to home on the Sultan and Skagit Rivers in the late 1870s and early 1880s. Coal discoveries in Issaquah and Newcastle played another critical role in economic growth and accentuated the need for rail transportation in the Puget Sound basin. Seattleites had long envisioned a railroad connection to a much broader network of markets across the country and mounted a strong campaign for the city's selection as the terminus of the transcontinental Northern Pacific Railroad. The community was surprised when, in 1873, Tacoma was selected, but within three days Seattle residents pledged funds to build their own railroad. The proposed line, the Seattle and Walla Walla, would cross Snoqualmie Pass and link Seattle with the mineral resources of the Cascades and the wheat lands of the interior. The city council granted all the tideflats south of King Street to the new venture as long as 15 miles of line were completed within three years (Armbruster 1999:51).

Initial enthusiasm for the new rail line began to wane as outside capital was difficult to raise. Construction slowed to a halt and in 1876 respected local businessman James Colman took over management. Colman hired a labor contractor, Chin Gee Hee, to provide a crew of Chinese laborers to assist in finishing the line. One group built a trestle that extended two miles through the tideflats, while another team built six miles of bridges and pilings to carry the line to Steele's Landing on the Duwamish. In February 1877, the line was completed to Renton and early in 1878 was extended to Newcastle, making these coal mining areas much more accessible and increasing the ease with which products could be shipped to the Seattle waterfront. New industries also got their start in the city to supply mining and transportation companies with everything from boilers to rail cars (Armbruster 1999:55-56; Andrews 2005:29-30; Hanford 1923:85).

The city seemed to run out of energy after this portion of the rail line was successfully completed, and connections eastward did not immediately materialize. Finally in 1881 Henry Villard, owner of the Oregon Transportation Company, bought out the Seattle and Walla Walla, which was renamed the Columbia and Puget Sound Railroad. He also purchased control of the

Seattle Coal and Transportation Company, which owned the Newcastle coal mines. Villard's workers immediately expanded facilities at King Street, enlarging the coal bunkers, constructing a large engine house and a small depot and a large new wharf at the end of Main Street (Armbruster 1999:66-67; Crowley and MacIntosh 1999:7).

Villard assumed control of the Northern Pacific in the summer of 1881 and by 1884 had connected Seattle to the mainline via the Puget Sound Shore Railroad which crossed the tidelands before reaching King Street (Armsbruster 1999:70-71). Seattleites were not happy with the Northern Pacific connection and in 1885 incorporated the Seattle Lake Shore and Eastern Railroad (SLS&E) with a route planned to extend north from the central waterfront around the north sides of Lake Union and Lake Washington and through the Squak Valley (Issaquah) to Snoqualmie Pass and eastward. There did not appear to be enough land for tracks and storage along the waterfront, so directors of the SLS&E asked the City Council for an ordinance to create Railroad Avenue, which was to be 125 feet in width and designed for use by all transcontinental lines entering Seattle. Passed in January 1887, Ordinance 804 contained a "common user clause," which gave other railroads coming into Seattle equal access to the Railroad Avenue right-of-way, although the SL&S took the prime 30 feet on the eastern side of the portion allotted for railroad tracks. This "grand highway for railroads and general traffic", a two-mile trestle, which extended along the waterfront, was completed in the fall of 1887 (Armbruster 1999:126-129; Hanford 1923:96; Bagley 1916:251; Beaton 1914:46).

Tidelands

Tidelands formed a large part of the land around and even within early Seattle, and from its very beginnings, filling and using the tidelands was a major priority of its settlers. Yet as one historian has noted, "Unlike landed property, tidelands existed in a judicial and regulatory twilight zone" (Klinge 2001:39). In Seattle individuals claimed the right to access shellfish, fish and other resources in the tidelands based on historic use, and yet advocates for growth wanted to fill and utilize them for various kinds of development.

As long as Washington was a territory, the tidelands were still under the control of the federal government and technically could not be sold. Despite this prohibition the land was often marketed for its speculative value, and the city itself also used the tidelands as an enticement for rail line construction. The Seattle and Walla Walla Railroad received a grant in 1873 and got the choicest property on the waterfront around the Ram's Horn, which extended along the city's original shoreline. Later this right-of-way was taken over by the Columbia and Puget Sound Railway, a subsidiary of the Oregon Improvement Company (Klinge 2001:42).

By 1888, however, as statehood approached, a speculative frenzy began. In that year Henry Yesler drove pilings for a new sawmill on land that was claimed by the Oregon Rail and Navigation Company on the tideflats, and neither the city nor the railroad initially challenged his right to the property. This action began a virtual land rush, in which individuals attempted to establish their claims to tidal property by initiating a variety of enterprises.

The constitutional convention, in 1889, left the issue open by establishing no policy on how the state, which was declared the owner of all the tidelands, might eventually distribute rights to the

property. The first Legislature decided the issue, and gave the rights of purchase to “the littoral owners and to those who had made substantial and genuine improvements,” but a Harbor Line Commission was also established to set aside harbor property to protect established ports. By 1890 most of the tidelands in Elliott Bay had come under private ownership except for Seattle’s central waterfront area (Benoit 1979:25-26).

SR 519 Phase 2 APE

During this time period, most of the APE was part of Seattle’s vast tideflats south of the city where no development had taken place (Exhibit 4-2). The exception was the far eastern edge of the APE, along the east side of Sixth Avenue South, where McDonald’s and Rice’s planing mill and wharf extended over the tideflats (Exhibit 4-9).

Changing Waterfront 1889-1919

The year 1889 was one of great change when Seattle moved into a new period of development. A fire gutted virtually the entire business district of the city on June 6, 1889, but within days city residents banded together to help those affected and begin rebuilding. Most commentators believe that the fire was a defining moment in Seattle’s history, perhaps its worst calamity, but also its best opportunity to reshape itself into a modern city.

Other significant events in 1889, and throughout the next three decades also further molded the city’s future. Less than a month after the fire, on Independence Day, delegates gathered in Olympia to draft a constitution, and Washington’s statehood was proclaimed by President Cleveland a few months later on November 11, 1889. An economic depression, a speculative frenzy over Klondike gold, and America’s involvement in both the Spanish-American and First World wars also had a huge impact, testing the city’s endurance and spirit, but ultimately ensuring its growth as new industries were added to the city’s already-strong commercial base (Hines 1893:187).

The Great Fire of 1889

The Seattle fire started in a small workshop in the basement of a building on the southwest corner of Front and Madison owned by Mrs. M.J. Pontius. The fire spread throughout the building and then to the other wood structures on the block as well as through adjacent basements and underneath elevated wooden plank streets, reaching the waterfront and soon spreading to piers and wharves. As the docks collapsed, huge stacks of cargo and personal effects disappeared into the water along with the contents of all the warehouses and other businesses. In the heart of the city, the spread of the fire engulfed buildings from University Street southward to the tideflats near Charles Street and from Fourth Avenue to the water.

Railroads

In 1891, the Northern Pacific Railroad purchased a majority interest in the SLS&E, which included the depot located on Railroad Avenue at the foot of Columbia Street (Armbruster 1999:136-137). Part of the reason for the acquisition was the pending arrival in the Northwest of

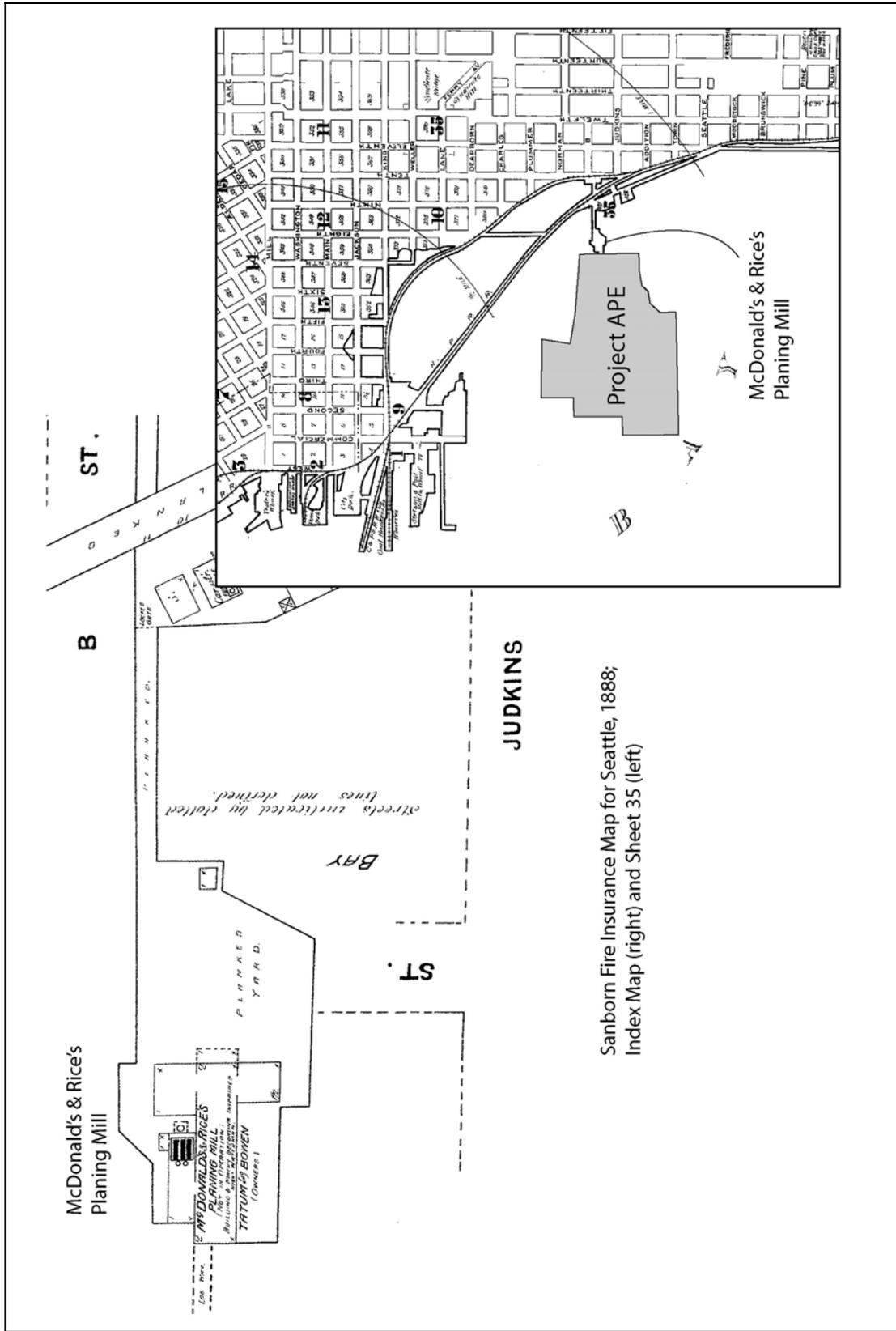


EXHIBIT 4-9. SANBORN FIRE INSURANCE MAPS, 1888, SHOWING MCDONALD'S AND RICE'S PLANING MILL AT WHAT IS NOW 6TH AVE S. AND S. ROYAL BROUGHAM WAY.

the Great Northern Railroad. James J. Hill, owner of the Great Northern, was not intimidated by the strong Northern Pacific presence in the region. He hired Seattle judge and former SLS&E owner Thomas Burke to be his agent, and through his work was able to secure very favorable concessions to make Seattle his line's terminus. Burke not only obtained valuable property along Smith Cove and in the yet-to-be-filled tidelands south of the downtown, but also negotiated for some of the unused right of way of the SLS&E along Railroad Avenue as well as additional land on South Jackson for feeder lines and railroad outbuildings (Andrews 2005:64-65; Armbruster 1999:174).

Hill leveled the Great Northern's rail yard at Interbay, north of the city, and carried the spoils by rail car to provide the 120,000 cubic yards of dirt needed to fill his portion of the tidelands. By October 1896 the new freight depot, which stretched for a full block east to west on Jackson, was completed. Three spur tracks abutted the facility on the south, while several loading bays were located on the north side (Armbruster 1999:175).

In 1905, the Chicago, Milwaukee and St. Paul announced the extension of their line from South Dakota to Puget Sound. The railroad absorbed local lines along the way west and faced enormous costs to complete its Pacific extension. In September 1908 the line reached the top of Snoqualmie Pass, and through freight traffic debuted in the summer of 1909. The Milwaukee Road initially used King Street Station when it entered Seattle, but soon switched to a new depot built by another railroad entrepreneur, Edward Harriman (Armbruster 1999:241-247; Schwantes 1993:152-154; 226).

In 1910, Harriman entered the Seattle market with the Union Pacific Railroad, sharing the Northern Pacific Railroad line's tracks from Vancouver, Washington, to Seattle and using a temporary depot at Railroad Avenue and Dearborn Street. He also purchased property in the tidelands to develop a freight yard at the southwest corner of First Avenue South and South Atlantic Street and depot at South Fourth Avenue and Jackson Street. (Armbruster 1999:154; Beaton 1914:48; Andrews 2005:77).

Tidelands

It was not until the 1890s, after the Seattle fire, that a comprehensive plan for filling the tidelands was initiated. Part of the reason for the delay was a provision in Washington's Constitution that gave the state ownership of all shore land. The State Legislature initially set up a Harbor Line Commission to draw boundaries and oversee use of the waterfront. The 1890 law allowed counties to appoint appraisers for their harbors, but it also solidified the right of private landowners adjacent to the tidelands to purchase those tidelands, even if they were previously claimed but not improved. As one historian has noted: "The 1890 law enshrined the view that tidelands, if improved, should become private property" (Klinge 2001:46-47).

Local businessmen and the railroads were particularly concerned about the boundaries drawn by the Harbor Line Commission, and when the commission included all of Railroad Avenue within the Seattle harbor reservation as well as about 35 wharves, the property owners sued the state. These lawsuits delayed action until a new governor, who was more amenable to private development, was elected. The terms of the original commissioners expired, and newly

appointed members subsequently reduced the extent of state shoreland ownership. In 1893 the Legislature passed an act that allowed individuals or companies to dig waterways through these public lands or to use excavated materials to reclaim them and then receive a percentage of the proceeds from land sales (Finger 1968:313; Bagley 1916:355-357; Warren 1981:96; Dorpat and McCoy 1998:40-41; Berner 1991:17).

In June 1894 the Seattle and Lake Washington Waterways Company, founded by former governors John Ferry and Eugene Semple, initiated plans to dig a canal from the Sound to Lake Washington on the southern side of the city, using the earth removed to fill in the tidelands. Work on the South Canal, as the project came to be known, included sluicing huge sections of Beacon Hill onto the tidal areas (Exhibit 4-10). The company also began to dredge two canals, the East and West Waterways, around a manmade land mass that later became Harbor Island, and also to dredge and straighten the Duwamish River so that it could accommodate ocean-going vessels. With fill from these projects, over 175 acres were reclaimed until the company ran out of money. The completed portion of the South Canal, which stretched from the East Waterway to Ninth Avenue South between South Horton and Hinds Streets, was abandoned and later filled and replatted for development (Bagley 1916:358, 363; Warren 1981:96-97; Dorpat and McCoy 1998:171; Berner 1991:17-18).

During the next few decades over 1,400 acres of tideland were reclaimed, with a portion of the fill coming from the city's massive Jackson Street regrading project, initiated in 1910, which alone provided over 3.5 million cubic yards of earth. Plans by the U.S. Army Corps of Engineers for development of the Duwamish Waterway were also implemented during this period (Bagley 1916:358, 363; Warren 1981:96-97; Dorpat and McCoy 1998:171; Berner 1991:17-18; Robbins and Larson 1995:8).

As the tideland reclamation project progressed, it created a large amount of saleable real estate, which was in demand primarily for industrial and commercial purposes. Between 1895 and 1902, most of the area between Yesler Way and South Idaho Street (south of Spokane Street), and from Airport Way to the East Waterway was filled to the current street level, primarily using dredge spoils. The city condemned portions of the new land for roads and services, and blocks in the tidelands were platted and then frequently replatted. This process continued in a piecemeal fashion for several more decades, although much of the area remained within the tidal zone until the 1920s (Phelps 1978:39-41, 61-63; Dorpat and McCoy 1998:171).

Industrial Development

All of the transportation developments in the reclaimed tidelands had a significant impact on the direction and scope of Seattle's industrial and commercial expansion. Before the turn of the century, Seattle was not a manufacturing city but the commercial center for a broad hinterland that included Puget Sound, western Canada and Alaska. After the fire when the rebuilding began, the city also developed a manufacturing base, which initially relied on the raw materials available in the region and provided goods for local use. Lumber and other timber products dominated the market, but other significant industries included shipbuilding, fish processing, and brick making. Additional manufacturing concerns included foundries, boilermakers, machinery

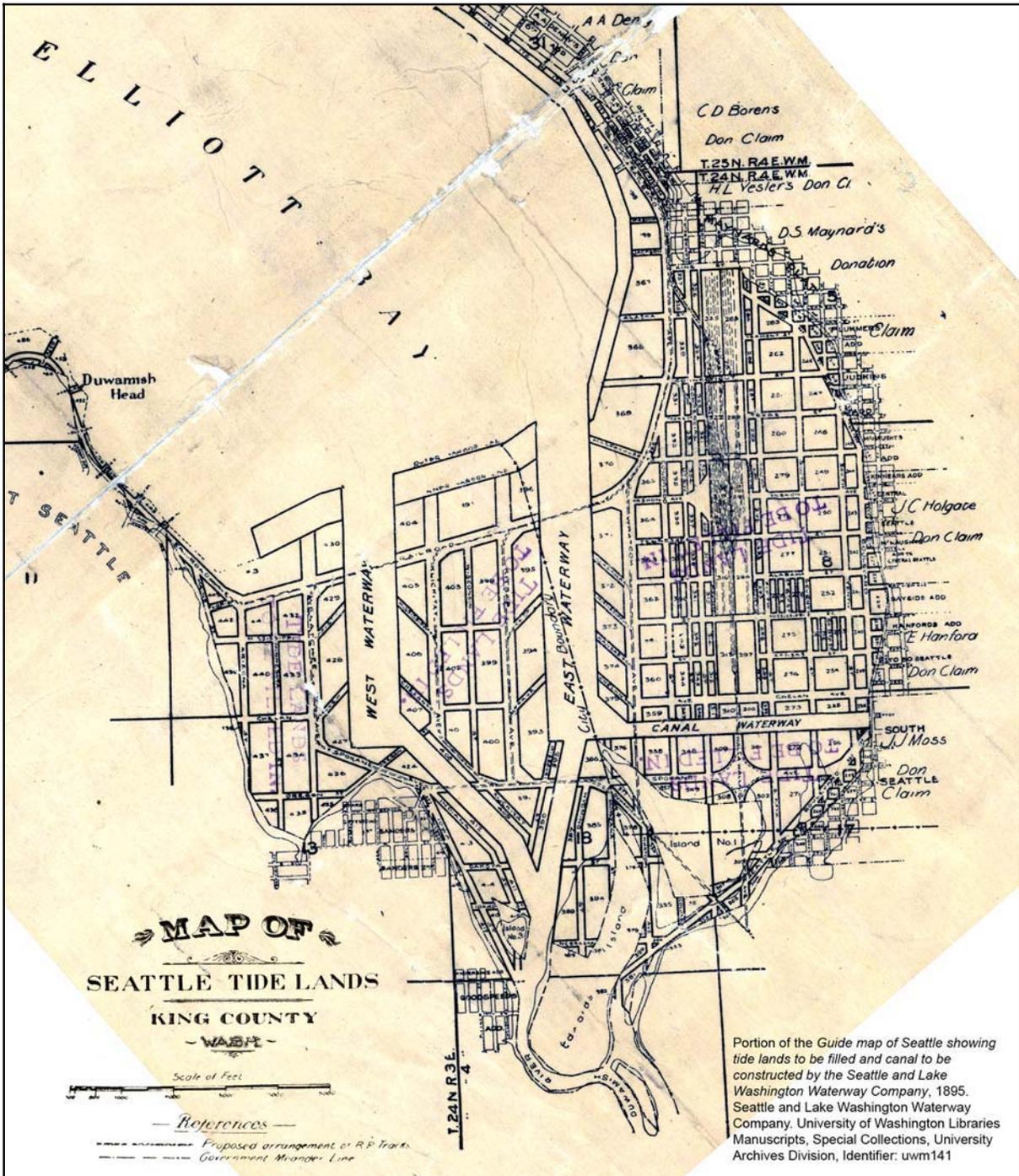


EXHIBIT 4-10. MAP SHOWING THE PROPOSED TIDAL AREA TO BE FILLED BY THE SEATTLE AND LAKE WASHINGTON WATERWAY COMPANY, 1895.

and machine tool makers which provided ancillary products for the railroads and numerous industrial plants. Other significant industries, based on number of workers employed, included furniture making, bread and baking, flour milling, printing and publishing, and meat processing (Berner 1991:22, 27-29; Sale 1976:52).

The continued reclamation of the tidelands offered a whole new area for the location of many of these industrial enterprises. With access to a range of transportation options, a new southern industrial district emerged and gradually became the site for numerous manufacturing plants as well as warehouses and transportation-related businesses (Sanborn 1904).

Shipbuilding

Among the industries that benefitted from the Klondike Gold Rush and America's entry into the Spanish-American War was the shipbuilding industry. Robert Moran had first started a marine repair shop on Yesler's Wharf in 1882, but when it was destroyed in the Great Fire, he and his brother bought 23 acres on the tideflats south of Yesler (land that later became part of the Kingdome site). They began with a machine shop but expanded to include a shipyard which could produce both wood and steel-hulled vessels. With the Klondike rush came a frenzy of interest in developing transportation to the gold fields. There were a sufficient number of ocean-going ships capable of reaching St. Michaels, but few that could make the trip up the Yukon River to the gold fields. The Morans built 14 river steamboats and several freight barges in their yard which is now South Royal Brougham Way, between South First Avenue and Fourth Avenue South (Exhibit 4-11) (Moran 1939:11-12; 16-21).

Seattle's increasing role in international trade and the onset of World War I accelerated the rate of shipbuilding for the next decade. Twenty percent of all the ships built during the First World War came from Seattle. This shipbuilding boom began before the war in 1915, and by the following year about 6000 people were employed in the industry. The Skinner and Eddy facility was located at the base of Charles Street and on the property once housing the Moran Brothers shipyards. Moran had been sold in 1906 and then in 1912 the plant became the Seattle Construction and Dry Dock Company. Skinner and Eddy, which had launched its first ship in 1916, leased the former Moran site and then purchased it in 1918. The company produced more ships during this period than any other shipyard in the country.

Shacktown

A community of squatters who could not afford accommodations in the expanding city lived south of downtown in an area that became known as Shacktown. This area was made up of dilapidated shacks and houseboats, whose residents were loggers, miners and seasonal employees as well as Indian fishermen and others who had work but whose wages were not sufficient for traditional housing. These shacks were described as "the merest boxes, constructed of the poorest materials, with a scarcity of windows, and in some cases no higher than six or eight feet to the eves [sic]" (Grant 1891:377) (Exhibit 4-12). According to local newspapers, clusters of shanties extended south and eastward from Third Avenue to about Eighth Street. (Klinge 2001:85-860; *Seattle Post-Intelligencer* May 1, 1904). As waterfront development expanded into Shacktown, many of its residents were pushed out.

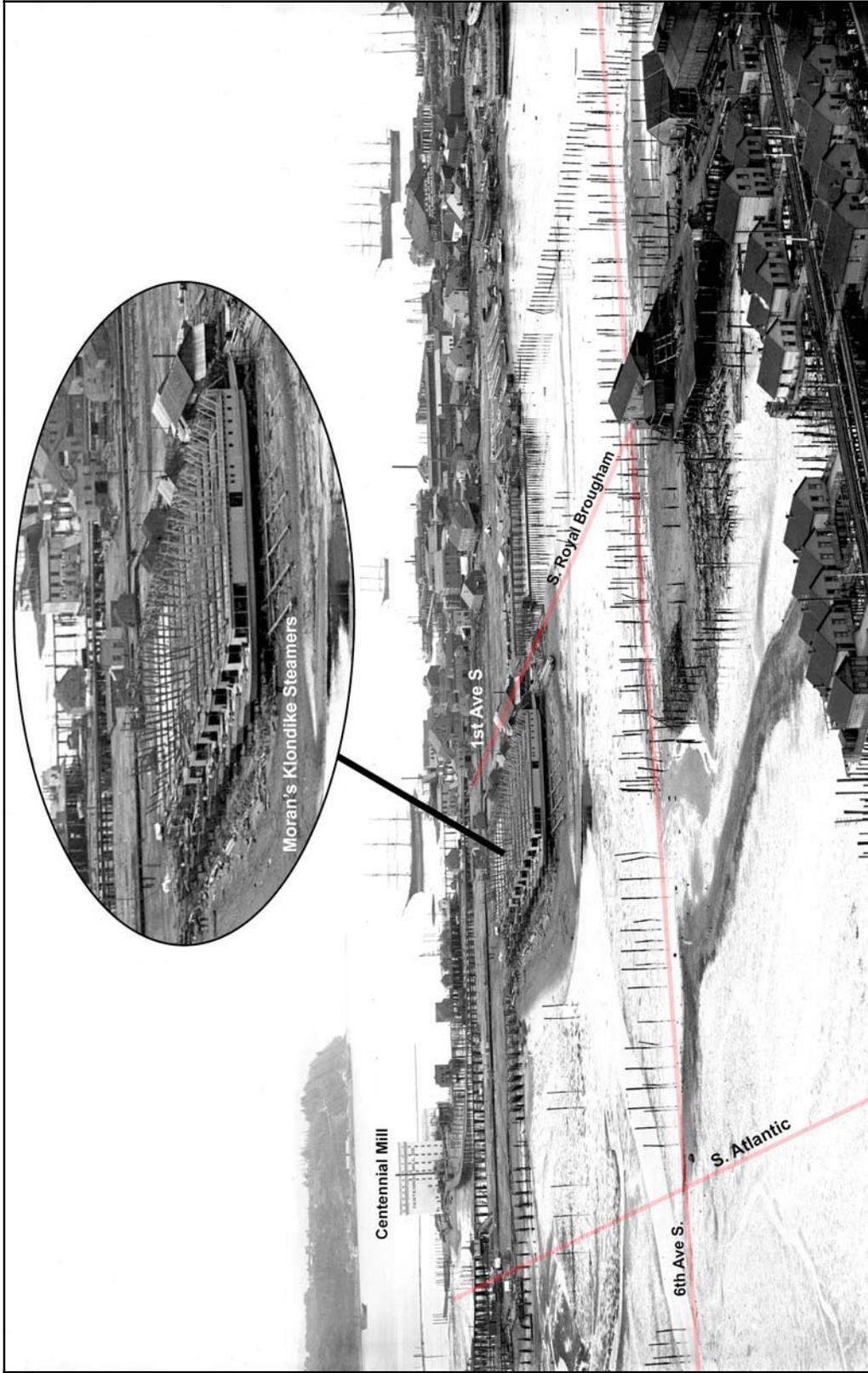
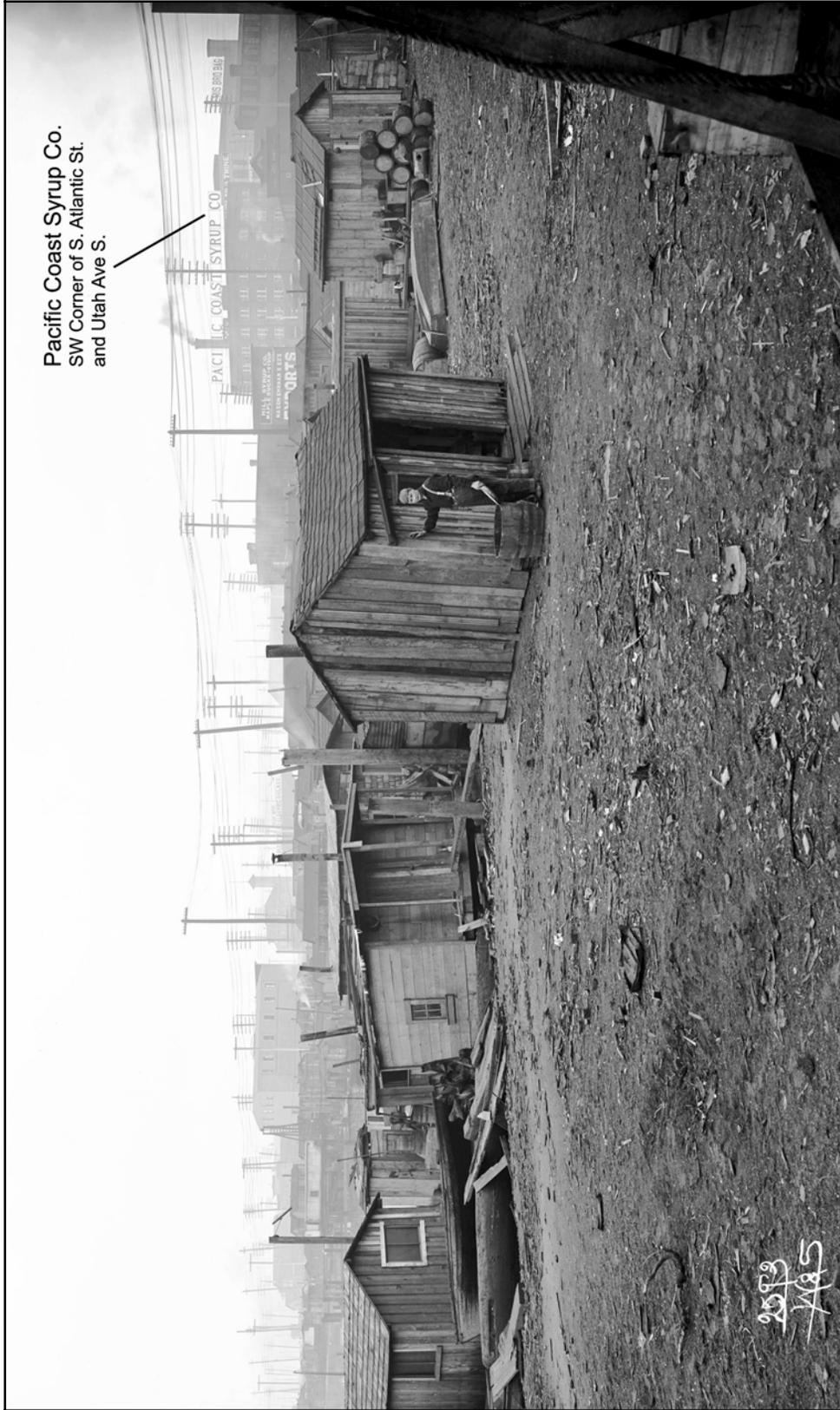


EXHIBIT 4-11. OVERVIEW OF TIDEFLATS IN 1898 SHOWING CONSTRUCTION OF MORAN'S KLONDIKE STEAMERS (MOHAI Photo Collection, SHS 835; photograph by Anders Wilse).



Pacific Coast Syrup Co.
SW Corner of S. Atlantic St.
and Utah Ave S.

EXHIBIT 4-12. "SHACKTOWN" IN 1910 (MOHAI Photo Collection, Image 1983.10.6956; photo by Webster and Stevens).

SR 519 Phase 2 APE

By the mid-1890s, material from the canal through Beacon Hill and the East and West Waterways was being used to fill the tideflats in the vicinity of the APE. In 1899, the area of South Royal Brougham Way (historically Connecticut Street) and west of Third Avenue South was filled. This arm of land was the location for the construction of Moran's Yukon-bound steamers (Exhibit 4-11 and 4-13). Fill also extended as far as the current intersection of South First Avenue and Atlantic Street South. East of this filled area was McDonald's and Rice's Planing Mill wharf which extended west from the railroad trestles to the future intersection of South Royal Brougham Way and Sixth Avenue South (Exhibit 4-13).

The 1904 Sanborn Fire Insurance Company records development along First Avenue South and Occidental Avenue South, but little else to the west until the McDonald and Rice wharf is noted as "Vacant, Old and Dilapidated." While there may have been some development and people living in this area, it was not of interest to the insurance company and therefore not mapped. The area along First Avenue South was primarily industrial and commercial including the Western Iron Works, a brass foundry, smelting and refining works, transfer (dray) business with stables, and the Gray Brothers – hardware storage and wagon parts. There were a few houses along the east side of First Avenue South, but most of the residential units were "Squatter's Shanties" on the tideflats along South Atlantic Street, Occidental Avenue South, and north of South Royal Brougham Way in the vicinity of Qwest Field (Sanborn 1904:Sheet 14, 16, 47, 59) (Appendix B).

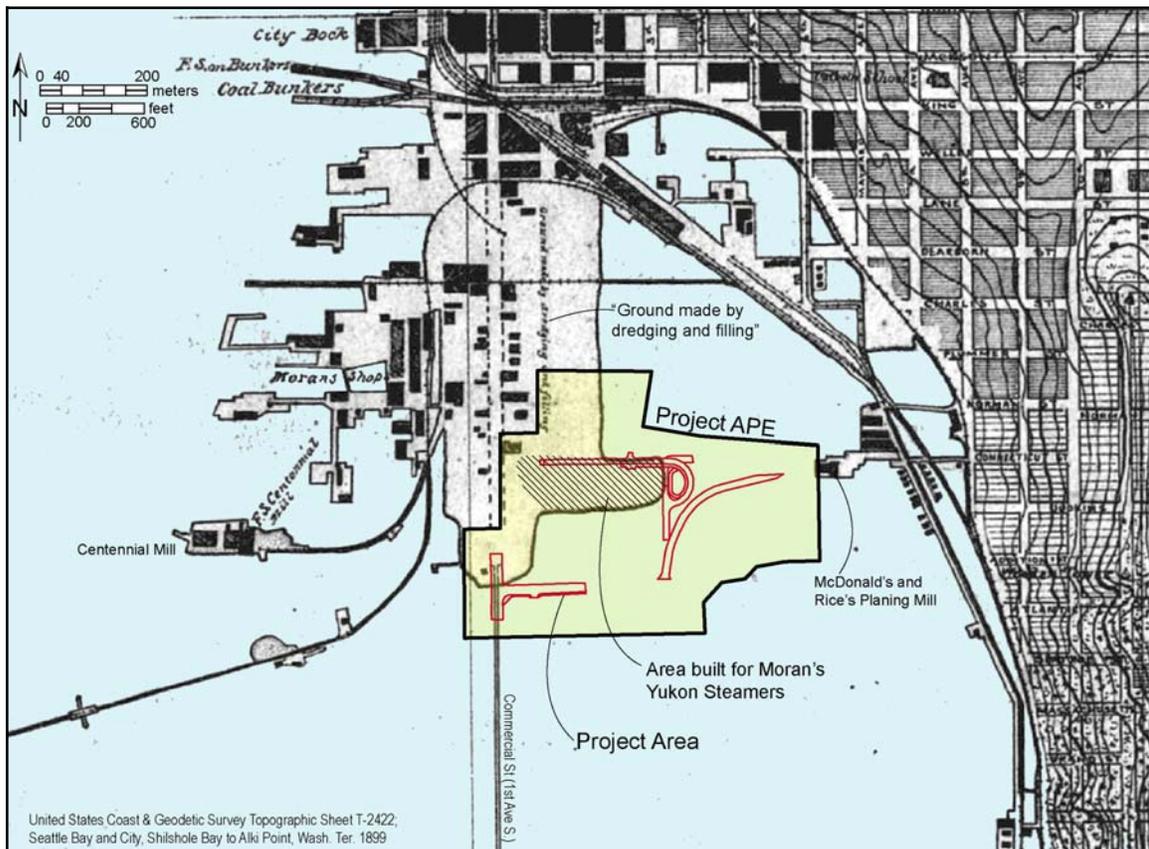


EXHIBIT 4-13. USCGS MAP SHOWING TIDELAND DEVELOPMENT BY 1899 IN THE PROJECT VICINITY.

Much of the project was on solid ground by 1916 (Appendix B). Areas north and south of South Royal Brougham Way and west of Third Avenue South were the location of tracks and buildings of the Great Northern Railway. Fifth Avenue South (the E3 Busway) was the route of the Oregon Washington Railroad and Navigation Company which was undoubtedly elevated above the tideflats on trestles. The southwest corner of South First Avenue and Atlantic Street South was the location of the Chicago, Milwaukee and St. Paul Railway tracks and freight depot (Appendix B). The shanties and houses of 1904 were gone, but First Avenue South still hosted industrial and commercial enterprises, primarily junk businesses, but also machine shops, storage, and the Gray Brothers carriage and wagon parts. Railroad related buildings and structures, such as the commissary, storage and offices, lined the west side of Third Avenue South (historically Oriental Avenue). Significant development had occurred east of Fourth Avenue South with construction of facilities for United States Steel Products, Vulcan Manufacturing and the Pacific Coast Biscuit Company (Sanborn 1916:36, 38, 57, 58) (Exhibit 4-14) (Appendix B).

Modernization 1920-1960

The huge mobilization for World War I came to a swift end with the Armistice in November 1918. During the war years, Seattle had become the principal port on the West Coast, with 47 piers and wharves and an annual trade of 5.7 million tons, valued at more than \$650 million. With the peace, the city lost much of its military business, but with the help of the Panama Canal, new markets around the world were open to Seattle shipping (Berner 1991:180; Dorpat 2006:201; Berner 1992:4, 151, 154, 198). Yet this seeming prosperity could not be sustained



EXHIBIT 4-14. THE VULCAN IRON WORKS IN 1910; VIEW TO THE NORTH WITH 4TH AVE S TRESTLE AT LEFT (University of Washington Libraries, Special Collections, Image A.Curtis 19270; photo by Asahel Curtis).

and by the time of the Great Depression, hopes that Seattle's position as a major port could prop up the local economy faded. Seattle continued its role as an important regional distribution and service center and the value of its trade with Alaska, in particular, was fairly steady, but throughout the decade shipping remained fairly stagnant (Berner 1992:153, 155).

In terms of transportation-related industries, the most precipitous decline after the war was in shipbuilding and led to the closure of many of Seattle's shipyards, which had numbered as many as 20 during the height of the conflict. Even the large Skinner and Eddy Company, which had inherited leadership of the local industry from the Moran Brothers, eventually sold their site (Berner 1992:153). World War II changed the economic outlook once more, and initially regenerated the shipbuilding industry, as the military scrambled to find yards capable of producing an array of auxiliary craft as well as a number of destroyers. The country needed ships quickly and "anything that could float was called into service," so repair work also became a mainstay of the local shipbuilding companies (Hershman et al 1981:29). Seattle soon had more shipyards than it did during the World War I era.

The Depression and World War II brought dramatic changes to Seattle's political, economic, and social climate—changes that ultimately shaped the city's future development. When the nationwide economic downturn reached Seattle, the city was hard-hit, losing population and experiencing a sharp decline in the value of its manufactures that lasted for several decades. Then in the years prior to the attack on Pearl Harbor, the country began to build up its defenses, as hostilities in Europe moved the world toward war. Seattle, which had been an important shipbuilding center during World War I, quickly geared up again to produce military vessels, and soon expanded output of other war-related products, including trucks and lumber. Besides its advantages as a port city, Seattle was also extremely well located to profit from the growing importance of the aircraft industry. The presence of the Boeing Airplane plant in the city led to millions of dollars in contracts and thousands of new jobs. Depression worries disappeared with unemployment lines, and thousands of newcomers flocked to Seattle to join the city's booming industrial labor force, which doubled between 1939 and 1941. This huge population influx brought unprecedented racial and ethnic diversity but also created social challenges and severely taxed city services and facilities. In the post-World War II era, the focus of the transportation industry changed, and while the central waterfront no longer served as the city's primary railroad and shipping hub, it continued its importance as a freight terminal and increasingly expanded facilities for new commercial and recreational needs (Sales 1976:137; Berner 1999:3, 45-46).

Railroads

Competition among the railroads that served Seattle had created a maze of freight yards and tracks with overlapping and sometimes conflicting services. During World War I, the huge increase in the use of the railroads for both freight and troop movement kept King Street and Union Stations so busy that a bottleneck was created, and the government was forced to step in and consolidate city terminals as well as regulate rail service. After the war, however, the rise of trucking and automobile travel limited the importance of rail lines, although they continued to play a necessary role in transcontinental and intra-state shipping. Passenger traffic began to decline sharply—in the Northwest it dropped 40 percent between 1920 and 1929—and by 1935

the overall decrease from pre-World War I numbers was 70 percent (Crowley and MacIntosh 1999:31-33).

In the post-World War I era, much of Seattle's industrial core had moved to the tideland areas south of the city, and the railroads also relocated many of their yards and other facilities there. In an attempt to revive passenger interest, the Milwaukee Road began to utilize some electric locomotives, emphasizing their contributions to a "smokeless Seattle" (Crowley and MacIntosh 1999:35-36).

World War II once again boosted the railroads, and freight traffic reached record heights. The railroads responded by ordering new cars and engines and upgrading key sections of track. Raw materials needed for wartime production were shipped over the mountains on large new freight cars called drags, and rail yards around Union Station, which had seen little use during the Depression years, were revamped and kept busy day and night. As soon as the war ended, however, the rail lines faced competition from both the automobile and the airplane. An array of new civilian aircraft soon made traveling by air both economical and comfortable, and railroad passenger service dropped off so dramatically that the federal government stepped in to subsidize a basic level of passenger service through the creation of Amtrak in 1970. In Seattle, King Street Station became the Amtrak terminal, leaving Union Station virtually empty. Union Pacific passenger service ended in April 1971 and Union Station closed (Crowley and MacIntosh 1999:43, 45, 47).

The railroads continued to play a role in freight shipments from Seattle throughout this period. During the heyday of the railroads Seattle had been served by as many as five transcontinental lines, but with mergers and consolidations, by 1970 it had only two. The Burlington Northern and the Union Pacific continued to operate in the city, although the number of trains along the central waterfront had diminished to a very few (Hershman et al 1981:51).

SR 519 Phase 2 APE

Gas stations, the International Harvester Company, BF Goodrich and several warehouses along First Avenue South, a gas station on Fourth Avenue South, and warehouses along Sixth Avenue South reflected the changes in industry and a shift to the automobile era (Sanborn 1950:36, 51, 57, 58) (Appendix B). Seattle Steel Company, operating at the former location of Vulcan Manufacturing between Fourth Avenue South and the E-3 Busway was a third smaller than its predecessor. One of the most notable changes in the APE, east of Third Avenue South, was the increase in food related businesses including Arden Farms and their ice cream factory, several grocery distributors and warehouses, three sausage and meat manufacturers and cold storage for beer. National Biscuit Company continued to operate in the same location at the southwest corner of South Royal Brougham Way and Sixth Avenue South (Sanborn 1950:36, 51, 57, 58).

Railroads continued to be a constant in the project, although the number of tracks between Occidental Avenue South and Fourth Avenue was greatly reduced by the late 1960s, paving the way for construction of the Kingdome, predecessor to Qwest Stadium. In 1979, South Connecticut Street was renamed in honor of Royal Brougham, a long-time sportswriter and editor for the *Seattle Post Intelligencer*.

4 Previous Cultural Resources Studies

Several major cultural resources studies have occurred within the project vicinity in the past 25 years (Exhibit 4-15). Most applicable to the SR 519 Phase 2 study area are those studies conducted in the last 11 years, including the Major League Baseball Stadium, the Football/Soccer Stadium and Exhibition Center, SR 519 Phase 1, Sound Transit Central Link Light Rail, and the Atlantic/Central Bus Base Expansion. Together these projects overlap the entire SR 519 Phase 2 APE. They also were charged with the identification of archaeological sites where access to subsurface deposits was severely limited or non-existent. Archaeological monitoring was typically recommended, after areas of high, moderate, and low probability for archaeological resources were identified based on review of previous archaeological, ethnographic and ethnohistoric studies, maps, historical documents and geotechnical bore logs. A brief discussion of these projects follows Exhibit 4-15. Buildings recorded during these surveys are discussed in Section 4.7 - Historical Resources.

EXHIBIT 4-15. SELECTED CULTURAL RESOURCES STUDIES IN THE PROJECT VICINITY.

Author	Date	Project¹	Relation to APE	Results²
Earth Technology Company	1984	Downtown Seattle Transit Tunnel	Outside; north in vicinity of Pioneer Square	None
Hart Crowser	1986	Identification of Archaeological Research Topics and Questions for the Downtown Seattle Transit Project.	Outside; north in vicinity of Pioneer Square and Union Station	N/A
Hart Crowser	1996	Washington State Major League Baseball Stadium Project	Within; included most of the current APE	Assessed probability for archaeological resources; recorded 98 buildings
Holstine	1996	SR 519, Intermodal Access Project [Phase 1]	Within; included most of current APE	Brief mention of archaeological resources; recorded 7 building
Hart Crowser	1998	Football/Soccer Stadium and Exhibition Center (Qwest Field)	Within; north of S. Royal Brougham between Occidental and S. Fourth Ave.	Assessed probability for archaeological resources and recorded 49 buildings
Miss	1998	King Street Center Archaeological Assessment and Monitoring	Outside; Block between S. Jackson and S. King, and between Second Avenue S. and Third Avenue S.	Foundation remains and historical artifacts dating between 1870s and 1910s
Nelson	1998	King County Administration Building, Excavation for Seismic Retrofitting	Outside; Fourth Avenue and Jefferson Street	Fill deposits with historical artifacts and recent debris
Hart-Crowser	1999	Draft Cultural Resource Research Design Waterfront South Master Plan and Programmatic EIS	Outside; Alaskan Way and Seattle waterfront between Madison Street and S. Royal Brougham Way	Assessed probability for archaeological resources
Courtois et al.	1999	Central Link Rail Transit Project	Within; along Sixth Avenue South. Project extended between Northgate and SeaTac	No sites identified, areas identified for monitoring
Cole	2002	Spokane Street Viaduct, Utility Relocation, Monitoring	Outside; one mile south along South Spokane Street	Two historical sites identified, 45-KI-529 and 45-KI-530
Maass	2002	Atlantic/Central Bus Base Expansion, Technical Memorandum	Within; south of S. Royal Brougham Way and east of E3 Bus Way	Assessed potential for archaeological resources.
Ballantyne and Goetz	2003	Atlantic/Central Base Expansion Archaeological Monitoring Protocol	Within; south of S. Royal Brougham Way and east of E3 Bus Way	Recommended areas for archaeological monitoring

EXHIBIT 4-15. SELECTED CULTURAL RESOURCES STUDIES IN THE PROJECT VICINITY.

Author	Date	Project¹	Relation to APE	Results²
Morgenstern and Blukis Onat	2003	Geoarchaeological Resources Assessment, Central Link Light Rail Transit Project	Within, along E3 Busway; report covered wider area	Project corridor along Sixth Avenue South identified as high probability for precontact sites
Bennett	2003	Historic Archaeological Resources Assessment, Central Link Light Rail.	Within; along Sixth Avenue South	Recommended areas for archeological monitoring
LeTourneau	2003	Archaeological Monitoring of Demolition Phase Excavations Central Link Light Rail Maintenance Base	Outside; just under 1 mile southeast, east of Sixth Avenue South and south of South Forest Street.	Identified historical site 45-KI-688
Roedel et al.	2003	SR 99; Alaskan Way Viaduct & Seawall Replacement Project, Final Archaeological Resources Monitoring and Review of Geotechnical Borings	Outside; Seattle waterfront between Denny Way and S. Spokane Street	Assessed probability for archaeological resources
LAAS	2004	SR 99: Alaskan Way Viaduct & Seawall Replacement Project, Archaeological Resources and Traditional Cultural Places Technical Memorandum	Outside; Seattle waterfront, SR 99 between Ward Street and S. Spokane Street	Assessed probability for archaeological resources
Gillis et al.	2005	Archaeological Monitoring and Review of Borings from South Spokane Street to Battery Street Tunnel, Alaskan Way Viaduct and Seawall Replacement Project	Outside; along the corridor of the Alaskan Way Viaduct	No significant archaeological resources identified
Lewarch et al.	2005	Seattle Monorail – Green Line, Archaeological Resources	Within; followed Third Avenue South within SR 519 APE	Third Avenue assessed was high probability area for archaeological resources
Fallon et al.	2007	Cultural Resources Monitoring, Atlantic/Central Bus Base	Within; included area between Sixth Avenue South and E3 Busway; also Sixth Avenue South between South Royal Brougham Way and South Atlantic	Identified one historic archaeological site, 45-KI-765 - Sixth Avenue South Refuse Deposit
NWAA/EHC (Miss and Hodges; Miss et al.)	2007	SR 99; Alaskan Way Viaduct & Seawall Replacement Project, Research Design for Identification of Archaeological Properties; Part I: Native American Properties; Part II: Historical Properties	Outside: just north and west of SR 519 APE	Refined previous probability assessments and recommended solid-core testing program

¹ Complete citation is in References;

² Results within 0.5 miles of the SR 519, Phase 2 APE or on the tidelands.

The SR 519 Phase 1 project addressed primarily historical resources but did provide a brief discussion of archaeological resources which was taken from the Baseball Stadium Draft EIS (Holstine 1996; Hart Crowser 1996). Specific boundaries for the project were not established at the time of the study but in general included most of the Phase 2 APE. The probability of intact archaeological resources related to the Moran Brothers shipyard was noted in the “vicinity of Royal Brougham Way and Occidental Avenue South” at a depth of 10 to 15 feet below the current ground surface (Holstine 1996:5).

The football and baseball stadium studies encompassed a large part of the SR 519 Phase 2 APE including areas north and south of South Royal Brougham Way, as well as the street itself.

South Royal Brougham Way and an area from First Avenue South to approximately Second Avenue South and north of South Atlantic Street were the only areas considered to have the potential to yield significant archaeological resources. Remains of the Moran Brothers shipyard were estimated to be approximately 15 to 25 feet below ground surface “just above the former tide flats pre-fill contact zone” (Hart Crowser 1996:H-11). No recommendations were made for archaeological monitoring in areas that overlap the SR 519 Phase 2 APE, but mitigation measures included provisions for inadvertent archaeological discoveries and in the case of the football stadium, preparation of a Cultural Resources Management Plan (Hart Crowser 1996:Appendix H; 1998:Appendix K). No inadvertent discoveries were made during the construction of either stadium.

Sound Transit’s Central Link Light Rail Transit Project (Central Link) intersects the SR 519 Phase 2 APE along Fifth Avenue South (the E3 busway) and South Royal Brougham Way east of Fourth Avenue South. The earliest Central Link cultural resources report identified South Royal Brougham Way east of the E3 bus way and Fifth Avenue South as moderate probability areas for archaeological resources. The report also suggested that additional research might be necessary to assess affects and recommended archaeological monitoring (Courtois 1999:149, 152, 178-179). An Archaeological Resources Treatment and Monitoring Plan was completed several years later after additional geoarchaeological, historic archaeological resources, and traditional cultural properties/ethnographic studies were conducted (Bennett 2004; Blukis Onat et al. 2004; Miller and Blukis Onat 2004; Morgenstern and Blukis Onat 2003).

The Central Link geoarchaeological study designated Fifth Avenue South a high probability area for pre-contact archaeological resources because it was in an intertidal zone and near a former shoreline. These high probability locations were likely “land use areas for economic resource acquisition” by Indian people (Morgenstein and Blukis Onat 2003:17). Such resources might include fish, shellfish, birds, mammals, and plants. Indian people continued to use these resources into historic times, ascribing names to places along the shoreline and intertidal zone south of downtown Seattle. An ethnographic study of the Central Link project placed named locations north and south of the SR 519 Phase 2 APE and designated the intertidal area south of downtown as a high probability area for finding ethnohistoric archaeological resources (Blukis Onat et al. 2004:8-16; Miller and Blukis Onat 2004).

The historic archaeological assessment of the Central Link included a historic context with themes and time periods to be used in assessing the significance of sites. Fifth Avenue South was designated high probability, defined as “relatively undisturbed areas where historic archaeological remains may be present in a condition that clearly conveys the importance of the research domain represented by the remains” (Bennett 2003:11, 32). Archaeological material from this area was expected to address such research domains as commerce and trade, domestic living, engineering, ethnic heritage, industry, social/civic, and transportation from 1850 to 1940 (Bennett 2003:23).

The archaeological monitoring plan for the Central Link project called for monitoring “during all construction-related ground disturbing activity at all locations determined to have moderate or high probability for archaeological resources” (Blukis Onat 2004:28). One historical site, the Seattle Industrial District Landfill (45-KI-688), was identified during the monitoring phase

(LeTourneau et al. 2003). This site is about 0.75 miles south of the SR 519 Phase 2 APE at the location of Sound Transit's Operations and Maintenance Facility Base (Maintenance Base) in the intertidal zone. Monitoring at Maintenance Base also allowed archaeologists to characterize the fill and develop a general sequence of strata (LeTourneau et al. 2003:39):

- 0-6 feet Brown-gray sand and gravel (construction fill)
- 6-12 feet Dark brown to gray silty sand where 45-KI-688 was identified
- 12-17 feet Gray clay, likely hydraulic fill (varied from 1 to 5 feet-thick)
- 13-19 feet Dark gray sand, possibly from dredging events (generally less than 2 feet-thick)
- 15-19 feet Very dark gray sand, original tideland sediments

A report on the archaeological monitoring of the Central Link project along the E3 Busway is currently in production (Lucy Zuccotti, personnel communication 2007).

While cultural resources studies were being completed for Sound Transit's Central Link, similar investigations were being conducted for the expansion of King County Metro's Atlantic/Central Bus Base (Ballantyne and Goetz 2003; Fallon et al. 2007; Maass 2002). The latter project overlapped the east edge of the SR 519 Phase 2 APE, extending east from the E3 Bus / Rail Way to Airport Way South and south from South Royal Brougham Way to South Massachusetts Street. Initial studies for the Bus Base found a relatively low potential for encountering pre-contact "archeological resources below the surface due to... historical period ground disturbance activities" (Maass 2002:1). The potential for historical period sites, however was considered high and monitoring by a professional archaeologist was recommended (Maass 2002:6). A wharf at what is currently the intersection of South Royal Brougham Way and Sixth Avenue South was of particular interest.

A project monitoring protocol further defined six work areas as high, moderate, and low probability for historical resources and assigned a moderate probability for pre-contact and ethnohistoric resources for all six (Ballantyne and Goetz 2003). High probability Areas 1 and the north half of 2 were located west of Sixth Avenue South and south of South Royal Brougham Way, within the SR 519 Phase 2 APE. Fill depths in these Areas ranged between 2.5 feet and 18 feet and were underlain by estuarine deposits. Pre-contact and ethnohistoric resources were expected at a depth of 2.5 feet and below. Expected site types included tideland occupation, shell middens, fishing weir features, charcoal, fire broken rock, hearths, stone and bone tools, fishing gear, and habitation structures. Expected historical material included remains of transportation and commercial structures, as well as metal, wood, glass, ceramic, leather, and rubber artifacts (Goetz 2005:1-2). No artifacts were observed and no historic properties were identified while monitoring of Areas 1 and 2 (Fallon et al. 2007:10). Artifacts and one archaeological site were, however observed along and east of Six Avenue South, outside the SR 519 Phase 2 APE. The Sixth Avenue South Refuse Deposit, 45-KI-765, was identified between South Royal Brougham Way and South Atlantic Street and several piles of brick and a small number of other historical artifacts were observed near South Royal Brougham Way and Airport Way South. These discoveries are discussed in more detail in the following section.

The Seattle Monorail Project Green Line overlapped the SR 519 Phase 2 APE along Third Avenue South. Archaeological deposits associated with buried tideflat beaches and use of the tideflats were likely to occur in this corridor. These included wood stakes, matting, basketry, or rock alignments associated with fish weirs and concentrations of shell and rock from shellfish gathering and processing (Lewarch et al. 2005:16, 20). Deposits of an historical nature were expected to be associated with the railroads, the development of business and industry on the tideflats, and worker or transient occupation (Lewarch et al. 2005:31-31). The Seattle Monorail Project was not built.

The SR 99, Alaskan Way Viaduct and Seawall Replacement Program is the most recent large-scale project in the vicinity of the APE. Only a small portion of the SR 519 Phase 2 APE, west of Occidental Avenue South, overlaps the Alaskan Way Viaduct APE. Cultural resources studies for the Alaskan Way Viaduct project include detailed and useful discussions about pre-contact, ethnohistoric, and historic use of Elliott Bay, the Duwamish River delta and of particular interest to the SR 519 study area, the intertidal zone (LAAS 2004; Miss and Hodges 2007; Miss et al. 2007). Each of these studies examined geotechnical bore hole logs and in many cases monitored their excavation, to develop an understanding of the sub-surface stratigraphy. The usefulness of the geotechnical bore log data is limited because the sample is small, usually a 2.5 inch diameter core and the core is not continuous. Within the last few months, WSDOT has pursued a program of continuous bores along the Alaskan Way Viaduct APE which should increase the probability of identifying archaeological sites within this urban setting.

The South Spokane Street Viaduct Widening Project (SSSV) is one mile south of the SR 519 Phase 2 APE and although it does not overlap the current study area, the SSSV is in a similar setting and provides useful data about cultural resources along tideland roadways. During the SSSV Section 106 consultation process, the Muckleshoot Tribe requested that ground disturbing activities be monitored by a professional archaeologist in order to identify pre-contact or historical cultural resources (Cole 2001:1). This request resulted in preparation of a cultural resources monitoring and treatment plan for underground utilities relocation work along South Spokane Street. The probability of pre-contact archaeological sites, such as summer camps and winter villages, occurring in the project was considered low because these type of sites were not likely to be located on intertidal mud flats, low islands, or in small salt marshes (Cole 2002:19). However, the probability of discovering artifacts associated with the exploitation of estuarine, tideflats, and saltwater marsh resources, in recent pre-contact, ethnohistoric, and historic times was recognized. These artifacts included bone, or stone projectile points, harpoon parts, fish hooks, fish weirs, clam digging sticks, baskets, bird nets, and possibly canoes.

The probability that historical archaeological resources would be found in the fill along South Spokane Street was high, and expected to include remnants of trestle pilings, wooden planks, bricks, glass, ceramics, and abandoned utility lines dating before 1920. Monitoring resulted in the identification of two historical archeological sites, 45-KI-529 and 45-KI-530, both dense concentrations of historical artifacts. Site 45-KI-529 was first observed 8 feet below the surface of the street in fill deposits that were 14 feet deep. The lower extent of the site was not determined because utility excavations did not extend beyond 12 feet below the street surface. Site 45-KI-530 was observed about 14 feet below the street at the interface of fill deposits and native sediments. Other historical material noted during monitoring included vertical wood piles

ranging in diameter from 12 inches to 24 inches and from 10 feet to 25 feet in length, wooden planks, and isolated bottles (Cole 2002).

Sediments observed during the SSSV monitoring project were characterized as fill or native sediment. Fill was “brown sand with some silt, very little clay, and some gravel”, that contained scattered historical debris.” Native sediment, “was a very dark grey silt with clay, interbedded with thin...lenses of very fine grey sand” (Cole 2002:26-27). Native sediment was water saturated and sticky and in places there were .25 inch to 12 inch-thick organic lenses with macroscopic fragments of plants. Shell was rare and occurred in small pockets that appeared to be of natural origin. The contact between fill and native sediment was obvious and observed at various depths from 8 feet to 14 feet below surface (Cole 2002:27). The SSSV widening project has yet to be constructed.

5 Traditional Cultural Properties

Ethnographic, ethnohistoric, historical, and recent studies have discussed the occupation and use of the tidelands and surrounding area by Indian peoples. No traditional cultural properties have been identified in or adjacent to the SR 519 Phase 2 APE.

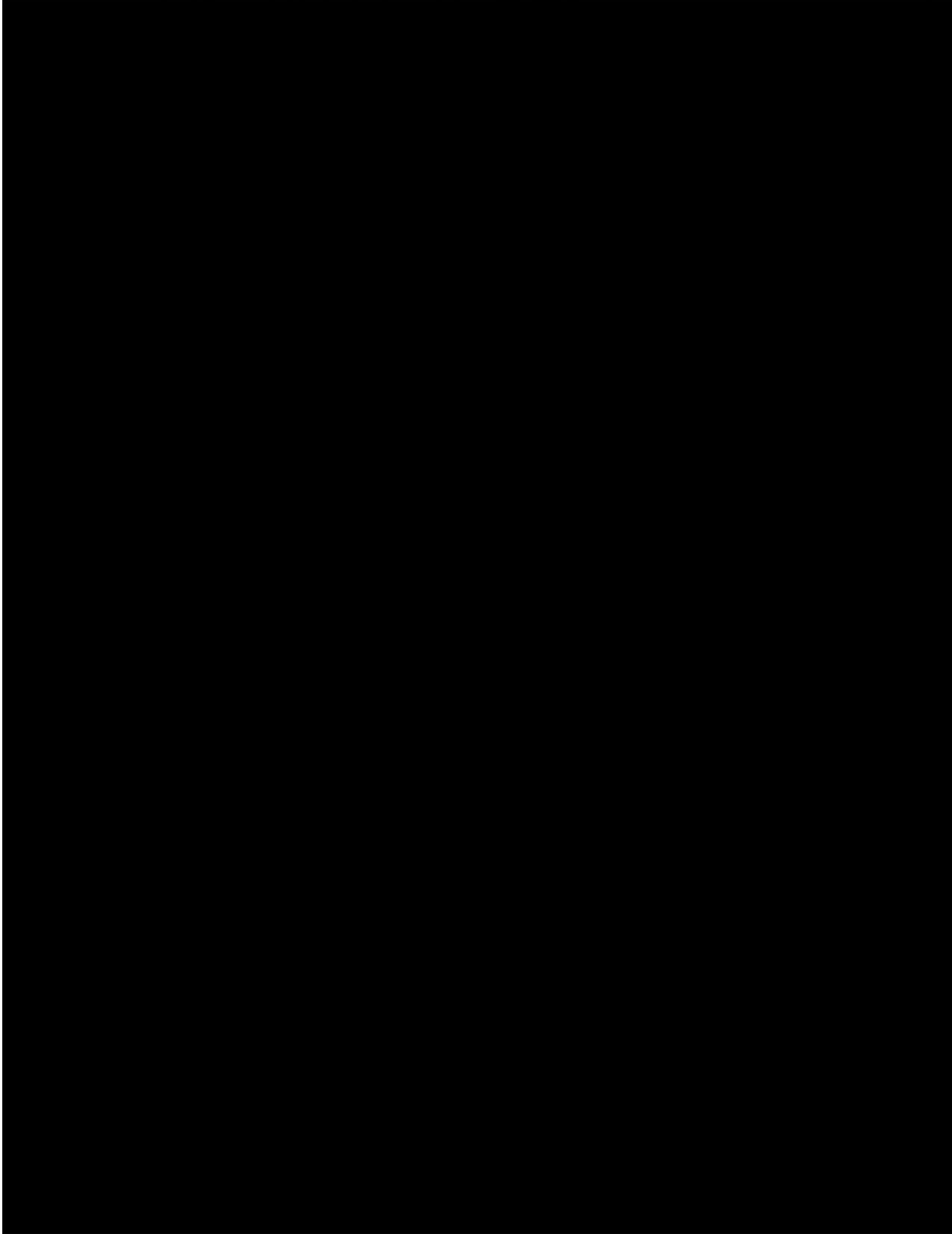
6 Previously Recorded Archaeological Sites

There are five previously recorded archaeological sites in the vicinity of the APE (Exhibits 4-16 and 4-17). All were exposed during demolition or construction activities and four while being monitored by professional archaeologists. Four of the sites are historical and were found 4 feet to 14 feet below the ground or street surface in tidelands fill. These four sites represent the common practice of using the tidelands for waste disposal and at the same time using waste disposal as a method for tidelands reclamation. A discussion of each site follows Exhibit 4-16.

EXHIBIT 4-16. PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES IN VICINITY OF APE.

No. (45-KI-)	Recorder/ Date	Type	Location	Relation to APE	NRHP Status
18	Deane/1966	Pre-contact	[REDACTED]	Outside; 0.3 mi SW	N/A
529	Cole/2002	Historical debris concentration, ca. 1910-1920	[REDACTED]	Outside; 1.2 mi S	DNE*
530	Cole/2002	Historical debris concentration, 1880s-1902	[REDACTED]	Outside; 1.2 mi S SW	DNE
688	Zuccotti and LeTourneau/ 2002	Historical -sanitary landfill, ca. 1920-1955	[REDACTED]	Outside; 0.75 mi SE	DNE
765	Fallon/2002-2006	Historical debris concentrations and roadway trestle, 1890-1923	[REDACTED]	Adjacent; approx. 65 ft. E	DNE

*DNE - Determined not eligible for listing in the NRHP.



45-KI-18 was a “cache of six similar [pre-contact] artifacts” discovered by workers in the I-5 construction corridor near [REDACTED] Street (Deane 1966). Very little is known about this site other than its location near the base of the hillside near the old shoreline. No detailed descriptions or photographs of the artifacts are known and the artifacts were either taken by the workers or purchased by an interested party. There were several other areas along the I-5 construction corridor where pre-contact artifacts were discovered but these discoveries were never documented (Deane 1966).

45-KI-529, South Spokane Street Historical Dump #2, was a concentration of historical artifacts observed along South Spokane Street, [REDACTED]. The site included glass, ceramic, fabric, wood, paper, and metal artifacts, as well as large horse clam shells (*Saxidomus giganteus*) and Japanese oyster shells (*Crassostrea gigas*), in a sandy matrix about 8 feet below street surface. The cultural deposit is 4 feet-thick and extended at least 210 feet east-west and 65 feet north-south. The base of the cultural deposit was not determined because trench excavation only extended to 12 feet below the street surface. The historical midden developed between 1895 and 1920, before the tidelands reclamation was completed. Fill in the site area was 14 feet deep and was likely from the Jackson Street regrade (1909 to 1910) and dredging of the Duwamish waterway (1895, 1913 to 1920s). Artifacts were produced locally, as well as in the midwest and eastern United States, Europe, and Asia. On the basis of the quality and diversity of the artifacts, the intact nature of the historical midden, and the potential to provide information important to local history, the site was recommended eligible for the NRHP (Cole 2002). However, SHPO determined the site not eligible (Matthew Sterner, personal communication 2007).

45-KI-530, South Spokane Street Historical Dump #1, was a concentration of historical artifacts identified along the west-bound lanes of South Spokane Street near its intersection with [REDACTED]. The glass, ceramic, leather, fabric, wood, and metal artifacts were discovered about 14 feet below ground surface in native sediment of homogeneous black clay interbedded with lenses of silt containing numerous plant remains, including stems and leaves (Cole 2002). The thickness of the historical midden and its length and width could not be determined due to the method of excavation and trench shoring. It appeared the artifacts were dropped onto the tideflats, sinking a few inches below the fill/native sediment interface. This occurred sometime between 1880 and 1910, but prior to the tide flats reclamation in this area. While this may be one of the oldest historical archaeological sites recorded in Seattle, it was unlikely to provide important information to contribute to our understanding of local history and was not recommended eligible for the NRHP (Cole 2002). SHPO concurred (Matthew Sterner, personal communication 2007).

45-KI-688, the Seattle Industrial District Landfill, was identified between Airport Way South and [REDACTED]. The site was discovered under six feet of brown-gray sand and gravel construction fill and consisted of a six foot-thick layer of historical artifacts dating from about 1920 to 1955. Over 3,000 artifacts were collected and analyzed, most representing the themes of commerce and trade, engineering, and health care (Bennett 2003; LeTourneau et al. 2003:64). The site was recommended eligible for the NRHP, but determined not eligible by SHPO (LeTourneau and Zuccotti 2003; LeTourneau et al. 2003).

45-KI-765, the Sixth Avenue South Refuse Deposit, was recorded in 2002, but the inventory form was only recently available for study. The site was three major and several minor concentrations of historical artifacts and the remains of the Sixth Avenue South trestle. These features were identified while archaeologists were monitoring an 8 foot-deep trench excavation along Sixth Avenue South between [REDACTED]. Cultural deposits were primarily between 4 and 8 feet below the surface and included 41 wooden pilings that were 1 to 2 feet in diameter, at least 10 feet-tall, and spaced about 16 feet apart, and 269 glass, ceramic, faunal, and miscellaneous (wood, bone, tin, leather, cork, metal) items. The artifact collection contained a high percentage of alcoholic beverage bottles and few domestic items, suggesting the site represented commercial operations in and around the tidelands from 1895 to 1925 (Fallon 2002/2006; Fallon et al. 2007). This site was determined not eligible for the NRHP, by SHPO, because it “did not represent a significant archaeological resource” (Fallon et al. 2007:9).

Archaeological discoveries not recorded. The following briefly describes historical archaeological materials near the project APE that were noted during archaeological monitoring, but not recorded as sites:

- Granite and brick foundation remnants, pilings, and historical artifacts dating from the 1870s to 1910s were observed during archeological monitoring of construction activities at [REDACTED] (Miss 1998)
- Four bottles and one jar found by construction workers just below the ground surface, about 40 feet from the western edge of [REDACTED] halfway between [REDACTED]. The bottles have a wide range of dates from 1903 to 1964 (Fallon et al. 2007; 33-34, 36-37).
- Several piles of brick and a small number of ceramic tiles, and flat glass were noted during excavation of a fuel lane near the southwest corner of [REDACTED] (Rooke 2005:2).

7 Recorded Historical Resources

There are three recorded buildings and one preservation district within the SR 519 Phase 2 APE (Exhibits 4-18 and 4-19). Only one building, the Frederick and Nelson Warehouse (No. 1518), is eligible for the NRHP (Griffith 2006). The other two buildings are recommended not eligible for the NRHP and neither appears to meet City of Seattle Landmark criteria. A discussion of these buildings and the Pioneer Square Preservation District follows; Historic Property Inventory Forms are in Appendix C.

The **Pioneer Square Preservation District (PSPD)** is a local special review district established by city ordinance (Seattle Municipal Code 23.66.100) to preserve the historical and architectural character of the Pioneer Square area. The PSPD extends south from Cherry Street to South Royal Brougham Way and west from Alaskan Way to Fourth Avenue South and includes most of the Pioneer Square Historic District, a NRHP property, as well as areas outside the National

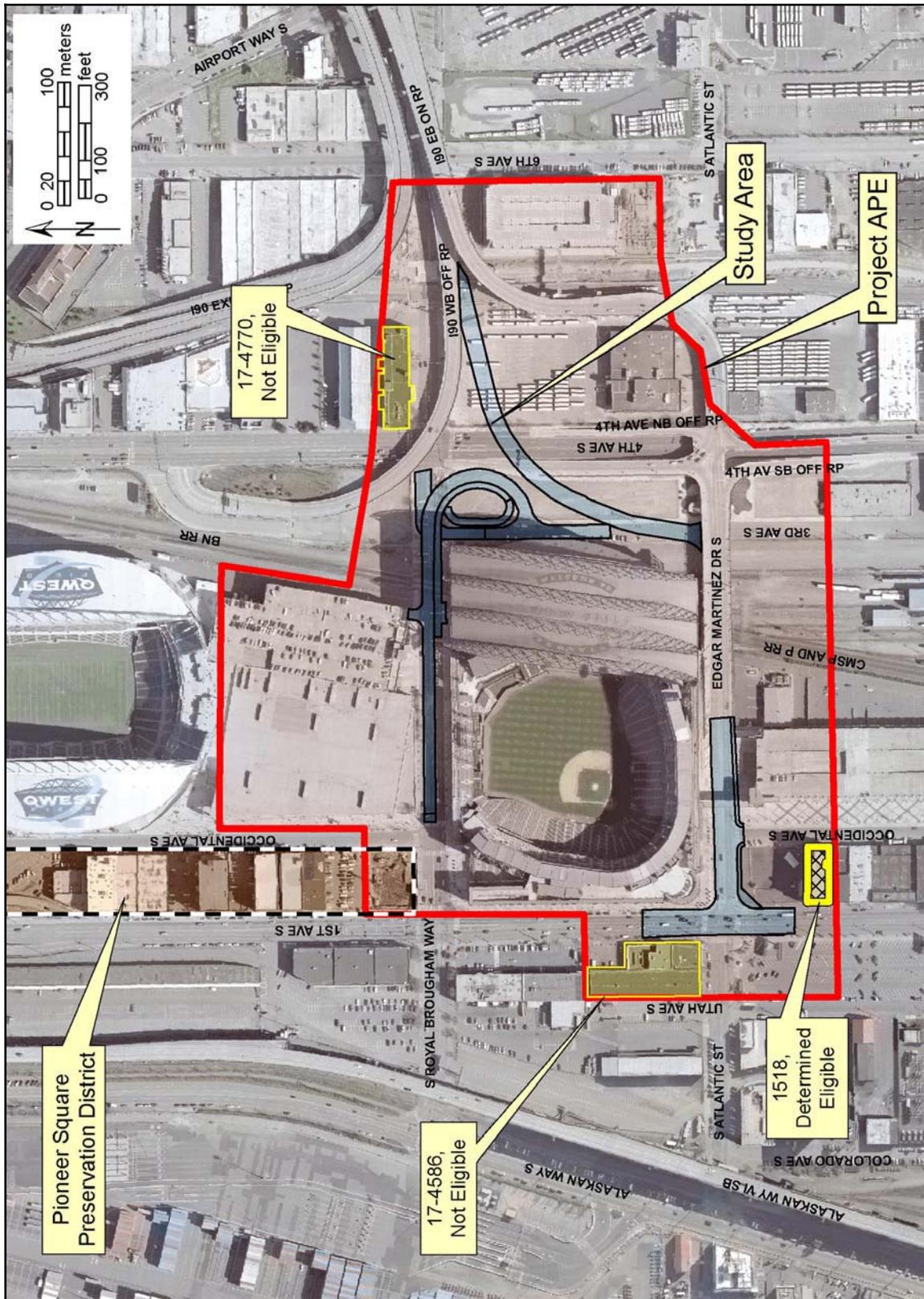


EXHIBIT 4-18. MAP SHOWING HISTORICAL RESOURCES WITHIN THE APE, INCLUDING THE PIONEER SQUARE PRESERVATION DISTRICT.

EXHIBIT 4-19. HISTORICAL RESOURCES WITHIN THE APE.

State No.	Address	Common Name (Historic Name)	Build Date	NRHP & SL STATUS
1518*	1518 First Avenue South	Bogart Golf (Frederick & Nelson Warehouse)	1907	Determined eligible NRHP; likely eligible SL
17-4586	1251 First Avenue South	Great Floors or Carpet Exchange (International Harvester Motor Truck Branch)	1949	Not eligible NRHP; not likely eligible SL
17-4770	1054-1064 Fourth Avenue South	Pacific Office or Romac Industries (United States Steel)	1910	Not eligible NRHP; Determined not to meet SL criteria
N/A	Block between First Avenue South and Occidental Avenue South, north of South Royal Brougham Way	The Pioneer Square Preservation District	n/A	Pioneer Square Preservation District (City of Seattle)

*No state number given, street address used instead.

Register District. The section of PSPD within the APE falls into the latter category, and includes a recently built hotel on the southern most parcel in the district, just north of South Royal Brougham Way, between First Avenue South and Occidental Avenue.

The **Frederick and Nelson Warehouse** (No. 1518) is on the east side of First Avenue South just south of Safeco Field and at six stories stands out among the buildings along this block (Exhibit 4-20). Designed by William Doty Van Siclén and built in 1907, the building is directly associated with the period of Seattle’s “massive railroad improvements, tidelands development and commercial expansion between 1900 and 1910” (Gray 1996a). The building was originally owned by Judge A.L. Palmer and in the late 1930s was owned by the A.L. Palmer Investment Company (King County Property Card). The west-facing main facade of this rectangular, brick clad building stands three bays wide, and the fenestration is delineated by three slightly recessed wall arches. These arches terminate at the fifth story with applied drip moldings beneath the impost on each pilaster. A long sill runs beneath the smaller sixth floor windows with a geometrical string course with dentils above. The building is crowned by an ornate metal cornice with a dentil course and modillion blocks. The building functioned primarily as a warehouse, first for



EXHIBIT 4-20. FACADE OF THE FREDERICK AND NELSON WAREHOUSE, NUMBER 1518).

the Western Electric Company (Baist 1908), and later for Sears Roebuck and Company (Kroll 1920), the Taylor- Edwards Warehouse and Transfer Company (Kroll 1928; King County Property Card), and the Frederick and Nelson Department Store (Polk Directories 1948-1959).

It is unclear if the original windows were in the building when it was recorded in 1996, but most have been replaced, although the openings remain unchanged. Most of the brick has been painted a brick color, but the painted “Western Electric Company” on the south side of the building remains. The store front remains largely intact as do the character defining features described above. SHPO determined the Frederick and Nelson Warehouse eligible for the NRHP in 1996 (Griffith). Although there have been changes to this property since that time, the building continues to retain its integrity of location, setting, design, materials, workmanship, and feeling.

The **Great Floors or Carpet Exchange**, 17-4586, building at the northwest corner of First Avenue South and South Atlantic Street was built in 1949 as the warehouse and truck sales building for the International Harvester Company (Exhibit 4-21). The building has been a carpet store and warehouse since the 1970s. The originally-designed Streamline Moderne building retains some of these lines but has been changed considerably including filling in the main entrance with concrete block and replacing most of the original metal sash windows. The rear portion of the warehouse was rebuilt in 1984 using tilt-up concrete construction and over 3,000 square feet of office space was also added. This building was recommended not eligible for the NRHP because it lacked historical significance and architectural integrity (Sheridan 2004).



EXHIBIT 4-21. OVERVIEW OF GREAT FLOORS, 17-4586.

Pacific Office Automation or Romac Industries, 17-04770, is a rectangular reinforced concrete building at the northeast corner of Fourth Avenue South and South Royal Brougham Way (Exhibit 4-22). Designed by the American Bridge Company Engineering Department in Chicago and built in 1910, the building's first tenant was probably the U.S. Steel Products Company who used it as a wire warehouse (Gray 1996b; Sanborn 1912). The building is three stories with prominent window sills on the first and third stories. In recent years, all of the windows on the second and third stories along the west, south, and east sides have been replaced. Several of the larger third story windows were replaced by two small windows. Other changes include removal of rusticated piers between third story windows, in-fill of doors and windows on the first floor (south side), addition of a large decorative feature on the northwest corner (second and third stories) of the building, and a new main entrance on the north side of the building. The new entrance is modern in design and materials and extends above the roof and protrudes from the building.

The Pacific Office/Romac Industries building was part of the historic resources inventory for the Baseball Stadium and Football/Soccer Stadium EIS studies and although it was "significant for its continuous use as an industrial warehouse as well as its general good physical integrity" (Gray 1996b), the building was not included in discussions of impacts or effects (Hart Crowser 1996:Appendix I; Shapiro and Associates, Inc. 1998:Appendix L). Presumably the building was not considered eligible for the NRHP, although no documentation of this recommendation or decision is available. This building also did not meet Seattle Landmark criteria (Shapiro and Associates, Inc. 1998:L-4, L-5). The current study noted significant changes in window and door openings, removal of architectural features, and additions which have continued to degrade the historic fabric of this property. The Pacific Office/Romac Industries building lacks integrity of



EXHIBIT 4-22. OVERVIEW OF PACIFIC OFFICE AUTOMATION OR ROMAC INDUSTRIES, 17-04770.

design, materials, workmanship, and feeling and is not recommended eligible for the NRHP by NWAA/EHC.

8 Archaeological Expectations

Pre-contact Archaeological Resources

Geologic research has shown the tidelands and estuarine system of the Duwamish River to be late Holocene in age, and the tideflats probably did not begin to emerge until sometime after 1500 B.P. (Zehfuss et al. 2003). As landforms, deltas are intricately organized and biologically productive ecosystems which would have attracted pre-contact people by providing saltwater and freshwater fish, shellfish, waterfowl, terrestrial mammals, and a range of plant species useful for tools, food, and medicinal purposes. Intertidal zones in the lower delta plain (the area of the delta between the upper tide limit and the underwater portion of the delta) are often characterized by distributary channels and extensive tidal channel networks which subdivide the delta into finer-grained subenvironments such as natural levees along channels, sandy areas where fluvial floodwaters have spilled out of distributary channels onto adjoining tideflats, and extensive inter-channel wetlands or mudflats. Tidal channels, for example, are amenable to harvesting bottom and anadromous fish using weirs and traps (Byram 1998; Lewarch et al. 1996; Stanley and Warne 1997; Waters 1992).

The former tideflats and distributary channels of the Duwamish River delta could harbor pre-contact and ethnohistoric archaeological materials represented by artifacts and features such as wood stakes, matting, basketry, rock alignments associated with fish weirs, and concentrations of shell or rock from shellfish gathering and processing. These resources are expected to occur along the former tideflats, beneath fill, at 10 to 32 feet below surface. Human remains, however, are not expected within the APE.

Historic Archaeological Resources

Historical archaeological material likely to occur on the tidelands and in fill throughout the APE will relate to the primary themes of residential use, transportation, and industrial and commercial development. The earliest residential material will date prior to fill episodes, occur on native sediments, and be unlocalized glass or ceramic artifacts subject to tides. By 1898, limited fill along First Avenue South hosted a few residences on pilings near the Moran Shipyard. Similar residences continued to appear intermittently along with shanties on emerging tidelands along [REDACTED] and on the filled flats now covered by the stadiums until 1916. After 1916, residential structures no longer occurred, probably as a result of extensive hydraulic fill. Glass vessels, ceramic dinnerware and other objects, toys, gender-related artifacts, fabric, leather, and faunal remains are likely to represent these occupations.

The earliest transportation feature in the APE is First Avenue South, which developed as a planked roadway extending from Denny Island. Railroads built on trestles occupied the eastern APE, along Fifth Avenue South, and between Third Avenue South and Occidental Avenue South by 1916. Opportunistic disposal of individual or groups of artifacts from railroad and street

trestles created linear patterns adjacent to and under these structures, both within and on increasing amounts of fill. Pilings, bents, tracks, spikes and other hardware would represent the actual engineered alignments. Railroad buildings were constructed along the west side of Third Avenue South by 1916 and were used for a variety of purposes including commissary, shops, and freight storage. Artifacts other than building materials of wood, glass, nails, and perhaps brick would be directly related to the activities in and around the buildings.

The earliest industrial remains that may be detected are woodwaste, planks, and pilings of the McDonald's and Rice's planing mill built on a wharf at [REDACTED] at the east edge of the APE. Moran Brothers' shipyard occupied tideflats beneath the present-day stadiums and other industrial development occupied First Avenue South by 1904. Metal working and smelting by these industries may have left deposits of slag, miscellaneous metal, molds, and other discarded metalworking tools. By 1916, hydraulic filling was nearly complete in the west half of the APE, but industrial development was absent. Metal working shifted to the east side of the APE where elevated roadways above partially filled tideflats provided access. The Vulcan Manufacturing Company and US Steel Products Company were built between Fourth Avenue South and Sixth Avenue South on either side of South Royal Brougham Way before 1916. By the 1950s, manufacturing businesses were being replaced by warehouses.

Early evidence of commercial uses of the APE are limited to possible remains of a hardware and wagon parts store and a syrup company business along First Avenue South before 1916. After 1916, there is a shift from industrial to commercial use along First Avenue South including junk stores, laundry, restaurant, and a warehouse. Industries and the railroads continue to occupy the east half of the APE with addition of a biscuit factory on the southwest corner of [REDACTED] [REDACTED]. By 1950, miscellaneous businesses and warehouses occupy First Avenue South including four automobile related enterprises. The east half of the area is occupied mainly by warehouses.

Historic archaeological resources are expected to occur on, within, and beneath the fill that covers the former tidelands. The thickness of fill varies throughout the APE, but is as deep as 32 feet.

Summary

Expectations for discovery of any of these archaeological remains are tempered by the small area of subsurface disturbance associated with the construction of the project and by knowledge of previous disturbance in areas where this will take place. Construction excavation with potential to extend to native sediments would be limited to excavation of support column shafts, soil improvement to support the east end of the South Royal Brougham Way railroad overpass. A signal standard at the southeast corner of First Avenue South and South Atlantic Street will extend 12 feet to 16 feet below the surface, within historic fill. Other excavation for road improvement and the elevator shaft pit are relatively shallow, five feet or less, and are unlikely to reach beneath modern fill. On South Royal Brougham Way extending east from First Avenue South a 96-inch diameter and a 72-inch diameter sewer pipelines are buried from 12 feet to 14 feet below the surface. In addition fill and native sediments east of and including the E3 Busway

to Sixth Avenue South have been excavated for recent transportation related projects. This information focuses concern for damage to potential archaeological properties on excavation for the support column shafts for the I-90 off ramp to Atlantic Street South, the soil improvements to South Royal Brougham Way railroad overpass, and excavation for the signal standard at the southeast corner of First Avenue South and South Atlantic Street.

Chapter 5 Environmental Consequences

1 Proposed Action

Methods Used to Evaluate the Project's Potential Effects

Under Section 106 of the NHPA, significant cultural resources are subject to additional determination of effects and design of mitigation measures. The Criteria of Adverse Effects was used to determine whether the proposed project would affect a historic property and whether those effects would be considered adverse. The proposed project would have an effect if it changed the characteristics that qualify a historic property for inclusion in the NRHP. The effect is adverse if it diminishes the integrity of such characteristics. If the project adversely affects a historic property, then it may significantly affect the quality of the human environment under NEPA unless the effects can be reduced below the level of significance through mitigation measures. SEPA applies the same criteria to properties listed as local landmarks. These potential adverse effects include:

- Physical destruction of an entire historic property;
- Damage or alteration of a portion of an historic property, or removal of a portion of the property;
- Introduction of audible, visible, or atmospheric elements that are out of character with the historic property or alter its setting.

Effects that may be introduced by this project include alteration of the physical setting by adding new traffic lanes, off-ramp, overpass, and stormwater facilities. These project elements may alter the setting of an historic building or district if they degrade the characteristics of integrity of that property. There is one NRHP eligible property, the Frederick and Nelson Warehouse at 1518 South First Avenue, within the APE. Although the City of Seattle Pioneer Square Preservation District overlaps the project, none of the district's historic properties are within the APE.

Effects During Construction

Direct Effects

Construction in the vicinity of the Frederick and Nelson Warehouse includes surface improvements and installation of stormwater facilities and a signal standard. Surface improvements include reconfiguring the north and south bound lanes on First Avenue South by replacing the parking lane along the west side of the street with a thru/turn lane for general purpose traffic and widening the north-bound lanes by five feet to create a right-hand turn pocket at South Atlantic Street. Parking north of the Frederick and Nelson Warehouse will also be removed to accommodate the turn pocket. These changes will occur within WSDOT right of

way. Installation of the signal standard and changes in stormwater facilities are 150 feet of the north of the Frederick and Nelson Warehouse at the southeast corner First Avenue South and South Atlantic Street. Vibrations from surface improvements and installation of stormwater facilities and a signal standard would not be severe enough to affect the Frederick and Nelson Warehouse.

Pre-contact, ethnohistoric, and historical archaeological resources, if identified and not avoided, may be directly affected by construction activities related to support column shafts, foundations, signal standards, soil stabilization, and stormwater facilities. Only support column shafts and soil stabilization would extend below historic fill and into sediments with potential for pre-contact material. These actions would occur only along the alignment of the I-90 to South Atlantic Street ramp and the Royal Brougham Way railroad overpass. Pre-contact and ethnohistoric archaeological resources would likely occur on the former tideflats, beneath fill, at 10 to 32 feet below surface. Historic archaeological resources would likely occur on, within, and beneath the fill covering the former tidelands. The thickness of the fill varies throughout the APE, but is as deep as 32 feet.

Indirect Effects

Project studies indicate that noise and vibrations from construction activities and traffic would not be severe enough to affect the Frederick and Nelson Warehouse. Construction activities would alter traffic and pedestrian patterns during the six to nine month construction period, but this would not adversely affect the Frederick and Nelson Warehouse.

Pre-contact, ethnohistoric, and historical archaeological resources, if identified, would not be indirectly affected by construction activities.

Mitigation

Significant archeological sites discovered during construction would be mitigated through scientific data recovery or other suitable measures determined in consultation with the SHPO, affected Indian Tribes, and other concerned parties. In order to minimize damage, construction would be conducted under the auspices of a monitoring and discovery plan that would include provision for inadvertent discovery of cultural material or human remains.

Effects During Operation

Direct Effects

Operation of the SR 519 project would improve the movement of vehicles and pedestrians to and from and within the APE. Improved mobility benefits the tenants and customers of the Frederick and Nelson Warehouse and therefore prolongs the viability of the property. Although parking spaces along First Avenue South would be eliminated, additional parking during typical business hours would be available for users of the Frederick and Nelson Warehouse at nearby parking garages and surface streets.

Operation of the SR 519 would not affect significant archaeological resources.

Indirect Effects

No indirect effects on the Frederick and Nelson Warehouse or significant archaeological deposits would occur from the operation of the SR 519 project.

Mitigation

No mitigation is necessary at this time.

2 No Build Alternative

Effects During Construction

Without the proposed action, the construction related effects described above would be avoided. For example, with the no build alternative there would be no potential for harm to archaeological sites or other historic resources.

Effects During Operation

There are no operational effects under the No Build Alternative.

Chapter 6 Cumulative Effects

1 Cumulative Effects

Cumulative effects are impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (Council on Environmental Quality (CEQ)).

2 Identifying Expected Cumulative Effects

The NWAA/ECH team identified expected cumulative effects of the Proposed Action and No Build Alternative by following a process recommended by the President's Council on Environmental Quality (CEQ 1997) and as identified in Chapter 412 of the WSDOT Environmental Procedures Manual. This process considers past and present projects that have already affected archaeological and historical resources. Next, the expected direct and indirect effects discussed in Chapter 5, are added. Finally, the probable effects of other projects that are planned but not yet built are considered. The NWAA/EHC team combined these past, present, and reasonable foreseeable future actions to produce a cumulative picture. This allowed consideration of how the effects of past, present, and future projects might add to, and interact with, the expected effects of the Proposed Action or the No Build Alternative.

Past and Present Actions

While the SR 519 study area remains a hub for transportation, it is no longer the center of manufacturing and warehousing it was 25 years ago. Construction of roads, light rail, bus facilities, stadiums, an exhibition center, and related parking structures have replaced the earlier industrial buildings and warehouses in this section of Seattle. The number of historical resources was greatly reduced as a result of these actions as buildings and structures were razed. Our knowledge of archaeological resources has benefitted from these actions, however. In the past five years, four historic archaeological sites have been identified on the Elliott Bay tideflats as a result of civic funded, transportation related projects. Construction excavation provided the means for identifying these sites which in turn provided data to begin understanding historical site formation on the former tidelands. Research designs and other studies related to past and present projects, most recently the Alaskan Way Viaduct and Seawall Replacement Program, greatly increased our knowledge of past uses of the tideflats, with suggestions for identifying the tangible evidence of this use.

Direct and Indirect Effects of the Proposed Action

As discussed in Chapter 5, the Proposed Action would not effect the Frederick Nelson Warehouse, but could directly effect archaeological resources.

Direct and Indirect Effects of the No Build Action

Under the No Build Alternative, there would be no potential for harm to archaeological sites or other historic resources.

Reasonably Foreseeable Future Actions

Exhibit 6-1 shows approximate locations of some of the larger reasonably foreseeable future actions (RFFAs) that could add to or interact with the Proposed Action to contribute to cumulative effects on archaeological and historical resources. Exhibit 6-2 briefly summarizes information about these projects. They include, but are not limited to:

- The Alaskan Way Viaduct Replacement and Seawall Replacement Program from South Holgate Street to South King Street, and the two-phase Electrical Line Relocation Project, which are Moving Forward projects within the Alaskan Way Viaduct and Seawall Replacement Program
- Reconstruction of Colman Dock
- The South Spokane Street Viaduct project
- Completion of the BNSF Railway tracks
- Closure of the South Holgate Street rail crossing
- Conversion of the Port of Seattle's Terminal 30 to a container terminal
- The City of Seattle's Central Waterfront Plan
- The City of Seattle's Bridging the Gap paving projects
- Several utility pipeline projects.

Urban development is increasing in portions of the South Downtown area immediately north of the study area. This area, which includes Seattle's International District/Chinatown/Little Saigon neighborhood, is currently the subject of Livable South Downtown, a major planning effort by the City of Seattle's Department of Planning and Development. In November 2007, the City of Seattle released the *Draft EIS for Livable South Downtown Planning*, a SEPA programmatic EIS evaluates options for a comprehensive neighborhood plan for the South Downtown area.

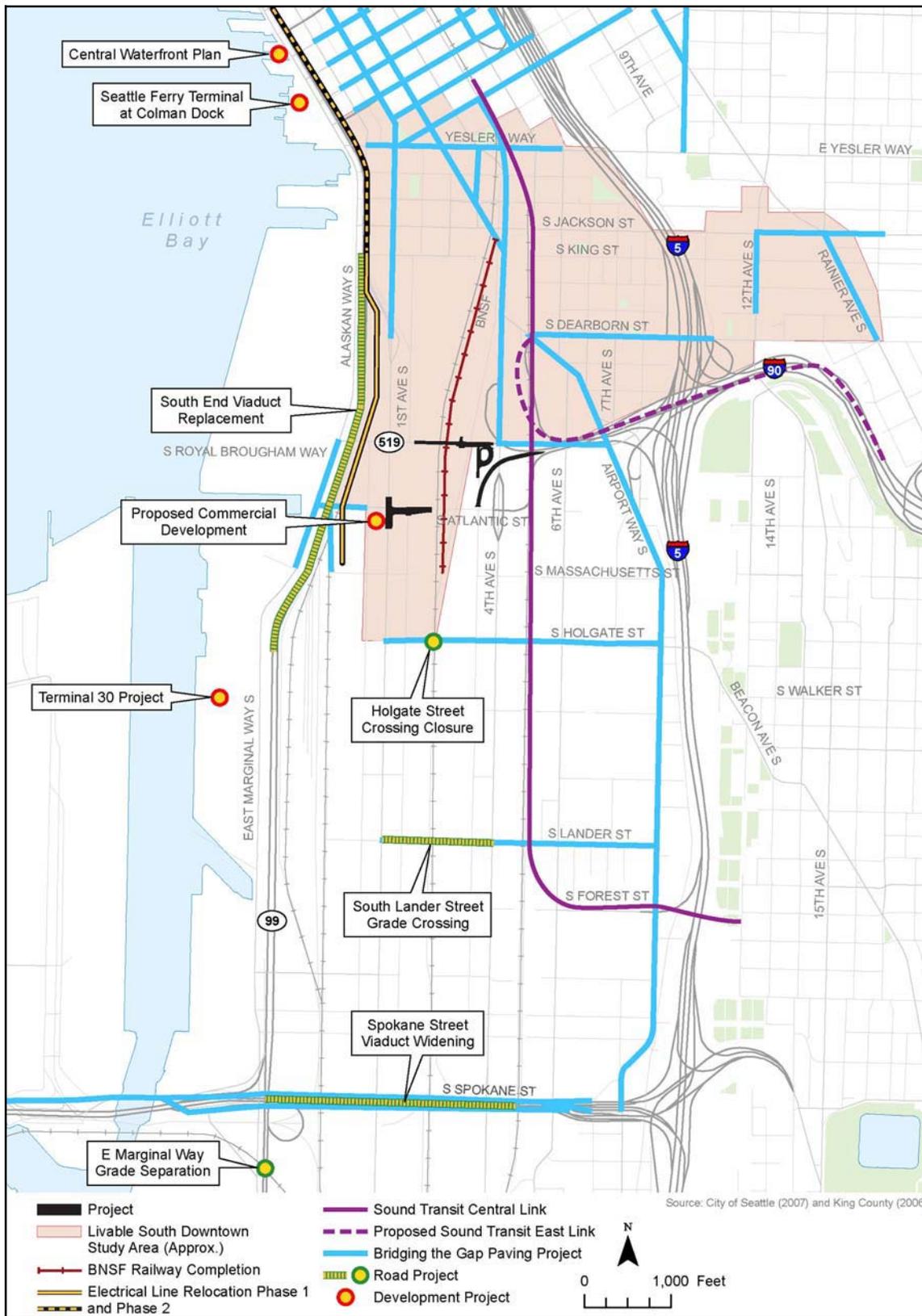


EXHIBIT 6-1. REASONABLY FORESEEABLE FUTURE ACTIONS.

Exhibit 6-2. REASONABLY FORESEEABLE FUTURE ACTIONS IN OR NEAR THE STUDY AREA.

Project^a	Location	Purpose	Proponent	Expected Construction Time Frame^b
Alaskan Way Viaduct and Seawall Replacement Program from South Holgate Street to South King Street	SR 99 from South Holgate Street to South King Street	Build new SR 99 between South Holgate Street and South Royal Brougham Way. Includes South Atlantic Street and South Royal Brougham Way grade separation, detour routes, and temporary connections.	Washington State Department of Transportation	2009-2012
Electrical Line Relocation	Phase 1: South Massachusetts Street to South King Street Phase 2: South King Street to Union Street	Remove network distribution lines and transmission lines that are located under the existing Viaduct before it is demolished.	Washington State Department of Transportation	Phase 1: Construction scheduled for 2008-2009. Phase 2: To be determined.
Completion of BNSF Railway Improvements	King Street Station to South Royal Brougham Way	Reduce rail transportation conflicts along the BNSF right-of-way; increase safety at the BNSF crossing of South Royal Brougham Way	BNSF Railway	Improvements at South Royal Brougham Way have been completed; with additional improvements along the BNSF right-of-way currently in progress.
Central Link Light Rail	Downtown Seattle to Sea-Tac Airport	Provide light rail service between downtown Seattle and Sea-Tac Airport	Sound Transit	2008-2009
East Link Light Rail	Downtown Seattle to Redmond	Provide light rail service between downtown Seattle, Mercer Island, Bellevue, and Redmond	Sound Transit	Construction not scheduled. Environmental impact statement scheduled for release in fall 2009.
Proposed Commercial Development	South side of South Atlantic Street between First Avenue South and Utah Avenue South	Provide office and retail uses	Gull Industries	2010-2012
Livable South Downtown Planning Study	The study examines growth and planning issues specific to Pioneer Square, the Chinatown/International District (including the Little Saigon area east of I-5), and the northernmost edges of the Greater Duwamish Manufacturing and Industrial Center.	Stimulate housing and related development consistent with the Mayor's Center City Seattle strategy.	City of Seattle, Department of Planning and Development	Environmental impact statement and legislative proposals in 2008
Closure of South Holgate Street at BNSF Railway Crossing	South Holgate Street at the BNSF Railway crossing	Eliminate conflicts between rail and vehicle traffic.	City of Seattle, Department of Transportation	Construction not scheduled
South Lander Street Grade Separation	South Lander Street between First Avenue South and Fourth Avenue South	Improve safety and traffic flow by constructing a roadway bridge for vehicles, bicycles, and pedestrians over the BNSF Railway tracks.	City of Seattle, Department of Transportation	2009-2011
South Spokane Street Viaduct Widening	South Spokane Street from Sixth Avenue South to West Seattle Bridge	Improve traffic safety and upgrade the structural and seismic performance of the viaduct that connects I-5 to the West Seattle High Level Bridge. Construct a new eastbound loop ramp to Fourth Avenue south of Spokane Street.	City of Seattle, Department of Transportation	Seismic retrofit, median barrier installation, and street-level utility relocations have been completed. Viaduct widening and ramp construction is scheduled to start in 2008 and would be constructed in phases as funds become available, so exact construction range not known.

Exhibit 6-2. REASONABLY FORESEEABLE FUTURE ACTIONS IN OR NEAR THE STUDY AREA.

Project^a	Location	Purpose	Proponent	Expected Construction Time Frame^b
Central Waterfront Plan	South Atlantic Street to West Thomas Street along the shoreline edge of the Center City	Following replacement of the existing Alaskan Way Viaduct, construct new parks and open spaces, shoreline and habitat improvements, improved linkages to the downtown core, and transit connections, and implement land use and regulatory changes.	City of Seattle	Presently in planning process. Construction will begin with the removal of the viaduct, and will then be ongoing for several years.
Bridging the Gap Paving Projects	Seattle arterial streets	As part of a larger program, the paving projects will resurface, restore, or replace approximately 300 lane-miles of arterial streets; rehabilitate or replace 3-5 bridges and seismically retrofit 5 additional bridges; repair or restore approximately 144 blocks of existing sidewalks; build approximately 117 blocks of new sidewalks; rehabilitate approximately 50 stairways; and restripe about 5,000 crosswalks.	City of Seattle, Department of Transportation	2006-2013
Terminal 30 Conversion	East Marginal Way South between approximately South Holgate Street and South Lander Street	Terminal 30 had been used for cruise operations but will be converted back to its original use as a container terminal. This and the adjacent Terminal 25 will provide 70 acres for container use.	Port of Seattle	2007-2009
Washington State Ferries Terminal Improvements at Colman Dock	Pier 54 at Seattle Waterfront on Alaskan Way South	Upgrade structures and facilities and increase capacity.	Washington State Department of Transportation	Construction not scheduled. For 2008-2009, focus will be on system-wide planning and coordination with nearby projects, including the proposed SR 519 Phase 2.

^aOnly major planned projects are listed. Many other projects that could be implemented in the reasonably foreseeable future are not shown.

^bDates are approximate.

Sources: General information from the WSDOT, City of Seattle, and Sound Transit websites.

The study examines growth and planning issues specific to Pioneer Square, the Chinatown/International District (including the Little Saigon area east of I-5), and the northernmost edges of the Greater Duwamish Manufacturing and Industrial Center. Preliminary recommendations were released by the City's Department of Planning and Development in March 2006. Land use zoning changes considered as part of this process will require conducting an environmental review prior to legislative decision-making.

The project most likely to interact with the SR 519 Phase 2 project in the near future is the planned repair and/or replacement of the south portion of the SR 99 Alaskan Way Viaduct and Seawall Replacement Program from South Holgate Street to South Royal Brougham Way, which will replace the south end of the Viaduct. That project is scheduled for construction from 2009 to 2012, the same time frame as the SR 519 Phase 2 project, and it will be located immediately west of the proposed SR 519 improvements.

3 Cumulative Effects

Cumulative effects are produced by the direct and indirect contributions of many different projects and activities managed by governmental agencies, businesses, and private citizens. For that reason, the Proposed Action or No Build Alternative would contribute only a small addition to the short-term and long-term cumulative effects described above.

Historical resources within the APE that are listed in or eligible for listing on the NRHP would not experience any cumulative effects as a result of the Proposed Action or No Build Alternative. Archaeological resources, if present and not avoided, may be harmed. Loss or degradation of non-renewable archaeological resources could constitute a cumulative effect by reducing the finite number of archaeological sites associated with the Elliott Bay tideflats.

No mitigation measures are recommended for the Proposed Action contribution to the cumulative impact as these effects were already accounted for in the Proposed Action analysis for archaeological and historical resources.

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