

CULTURAL RESOURCES REPORT COVER SHEET

DAHP Project Number: 2026-02-01125 (Please contact the lead agency for the project number. If associated to SEPA, please contact SEPA@dahp.wa.gov to obtain the project number before creating a new project.)

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Title of Report: Cultural Resources Services for the Neptune Development Project and Mitigation Project – Port Parcel 12, Tacoma, Pierce County, Washington

Date of Report: 4/15/26

County(ies): Pierce Section(s): 1 Township: 20N Range: 03E
Quad: Poverty Bay, WA Acres: 5

PDF of Report uploaded to WISAARD report module (REQUIRED) ☒ Yes

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

Archaeological Site(s)/Isolate(s) found or amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

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

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

DAHP Archaeological Site #:

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- Please be sure that any PDF submitted to WISAARD has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into a single PDF file.
- Please check that the PDF displays correctly when opened.

**Cultural Resources Assessment
for the
Neptune Development Project and Mitigation Project –
Port Parcel 12
Tacoma, Pierce County, Washington**



ATCRC Report # PI-11-25
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Cultural Resources Assessment for the Neptune Development Project and Mitigation Project – Port Parcel 12 Tacoma, Pierce County, Washington

INTRODUCTION

On behalf of the United States Army Corps of Engineers (USACE), Aqua Terra Cultural Resource Consultants (ATCRC) was contracted by the Port of Tacoma to provide a cultural resource assessment for Port Parcel 12, located in Tacoma, Pierce County, Washington (USACE number NWS-2025-34-WRD). The project intent is wetland enhancement and establishment will be done. The project is subject to Section 106 of the National Historic Preservation Act (NHPA). Section 106 requires that federal agencies account for the effects of their undertakings on historic properties.

ATCRC's cultural resources assessment for this project consisted of background review, field investigation, and production of this report. A background review determined that Port Parcel 12 is located in a very high-probability area for the presence of precontact archaeological sites. No historic properties were identified in the Port Parcel 12 project area, and, as such, ATCRC recommends a finding of No Historic Properties Affected in this project area. ATCRC also recommends that an Inadvertent Discovery Plan (IDP) be implemented during project ground disturbance; the Port of Tacoma IDP is provided in Appendix A.

REGULATORY

Section 106

This project is subject to Section 106 of the National Historic Preservation Act (NHPA), as amended, and its implementing regulations described in 36 Code of Federal Regulations (CFR) Part 800. The Washington State Department of Archaeology and Historic Preservation ([DAHP] 2023) advises that “any agency issuing a federal permit or license, providing federal funds or otherwise providing assistance or approval” must comply with Section 106. Section 106 requires that federal agencies account for the effects of their undertakings on historic properties. A historic property is typically aged 50 years or older and is defined in 36 CFR Part 800.16(l)(1) as follows:

... any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places [NRHP] maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet [... NRHP] criteria.

The procedures under Section 106 require the federal lead agency for the undertaking to identify the Area of Potential Effects (APE), conduct an inventory of historic properties that may be located

within the APE, and determine whether any of the identified properties are eligible for listing in the NRHP. An APE is defined in 36 CFR 800.16(d) as follows:

... the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The [APE] is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

According to 36 CFR § 800.4(c)(1), the National Register criteria (36 CFR part 63) must be applied to historic properties identified within the APE that “have not been previously evaluated for National Register eligibility.” The National Register criteria guidelines (National Park Service [NPS] 1995), state that to be eligible for listing in the NRHP, a property must be significant in American history, architecture, archaeology, engineering, or culture and must meet one or more of the four NRHP criteria:

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

Additionally, to be eligible for the NRHP a resource must retain integrity. According to NPS (1995), integrity is the ability of a historic property to convey its significance. Integrity must be evident through historic qualities, which may include location, design, setting, materials, workmanship, feeling, and association.

The State of Washington also requires compliance with cultural resources management laws and regulations under the Revised Code of Washington (RCW) 27.44 Indian Graves and Records, RCW 27.53 Archaeological Sites and Resources, and RCW 68.50.645 Skeletal Human Remains—Duty to Notify. The Indian Graves and Records Act (RCW 27.44) prohibit knowingly disturbing Native American or historic graves. The Archaeological Sites and Resources Act (RCW 27.53) prohibits knowingly disturbing archaeological sites without a permit from the DAHP. RCW 68.50.645 provides a strict process for notification of law enforcement and other interested parties in the event of discovering any human remains, regardless of inferred cultural affiliation.

PROJECT LOCATION AND DESCRIPTION

Port Parcel 12 is located at 3802 Taylor Way (Tax Parcel Number [TPN]: 0320011091 in Tacoma, Pierce County, Washington, within a portion of Section 1 of Township 20 North, Range 3 East (Figure 1 - Figure 2). According to the Pierce County Assessor, Port Parcel 12 is 5 acres.

The greater project intends to combine undeveloped and underdeveloped land at the Port of Tacoma on the Blair-Hylebos Peninsula. At Port Parcel 12, work will include reestablishing and

enhancing wetlands (Figure 3). Ground disturbance at Port Parcel 12 includes excavating to reestablish wetlands, with depth to be determined by hydrology, approximately 5 feet below ground surface.

AREA OF POTENTIAL EFFECTS

ATCRC defined the APE for this project on behalf of USACE based on the project plans. For Port Parcel 12, the APE encompasses the entire 5 acre parcel.

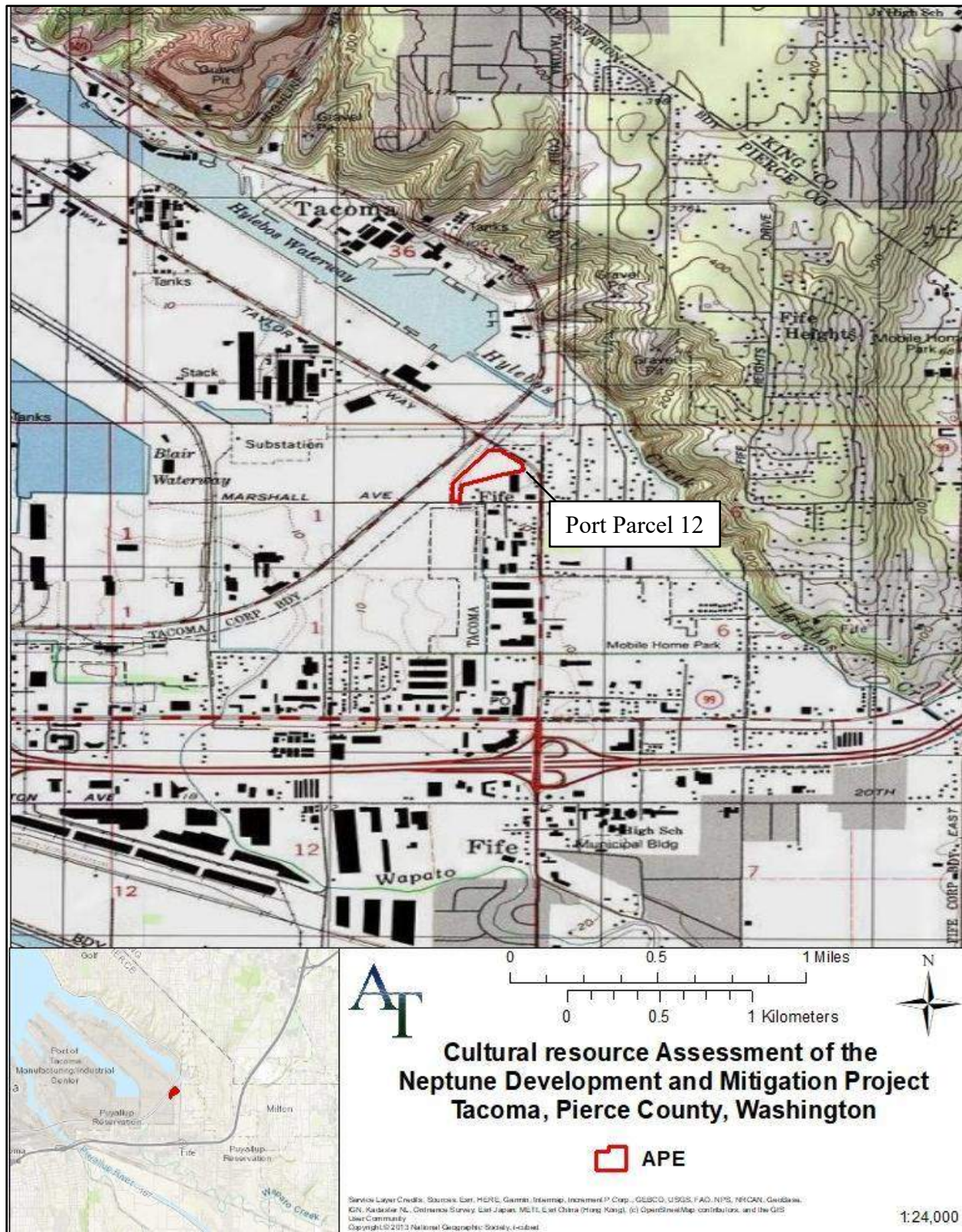


Figure 1. Location of the APEs on a portion of the United States Geological Survey ([USGS] 1991) Tacoma, Washington topographic map.

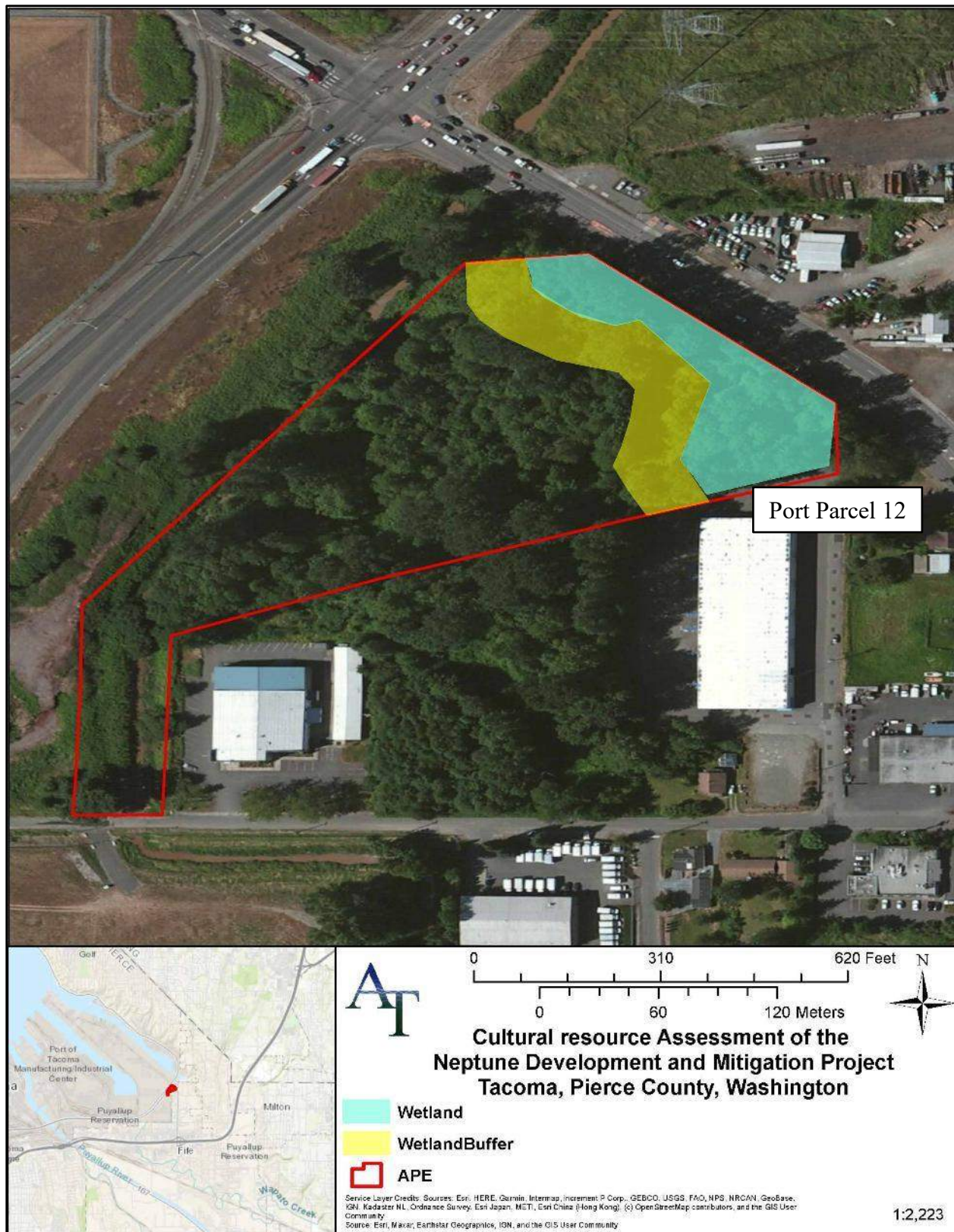


Figure 2. ca. 2023 satellite imagery highlighting the location of the Port Parcel 12 portion of the project.



Figure 3. Project plans for the Parcel 12 portion of the APE, as provided by the Port of Tacoma.

CORRESPONDENCE

As part of the Section 106 process, the federal lead for the project, or their delegate, is responsible for consultation and project undertaking notifications with affiliated tribe(s), and interested parties as determined by the federal lead to solicit for specific areas of interest or concern regarding the project.

The Port requested ATCRC conduct a meeting with the Puyallup Tribe of Indians (PTOI) to discuss methodology for this entire project. ATCRC requested a meeting with the Tribe and conducted a phone call with Mike Shong, PTOI Archaeologist, about the project the week of May 6, 2025. ATCRC and Mike Shong then corresponded on the proposed methodology, and he shared that Port Parcel 12 would be a very high risk site with 10 meter probe spacing with augers required, if not 5 meter due to the proximity to a deep archaeological site nearby. Following informal conversations, Mark Retmann (Port Environmental Manager) contacted Brandon Reynon, PTOI Tribal Historic Preservation Officer (THPO), to address methodology concerns at Port Parcel 12 and requested the use of backhoe trenches at 20 m intervals. Mike Shong (PTOI Archaeologist) replied on May 23, stressing a “thoughtful and adaptable field methodology is required to adequately sample Port Parcel 12,” and suggested 10-meter intervals with the understanding that the vegetation and terrain may inhibit some trenches, and asked to participate in the field survey at Port Parcel 12.

In addition, on behalf of the Port, on August 20, 2025 an informal notification of fieldwork for the final Port Parcel 12 fieldwork was provided by ATCRC electronically to all tribes with an area of interest in the project based on DAHP’s data: the PTOI, the Nisqually Indian Tribe, the Muckleshoot Indian Tribe, the Snoqualmie Tribe, the Squaxin Island Tribe, the Suquamish Tribe, and the Yakama Nation. The Suquamish Tribe responded on August 20, 2025, that they did not have additional information beyond what is available in published sources. As of the date in which this report was prepared, ATCRC has not received a response in regard to fieldwork at Port Parcel 12 from the Nisqually Indian Tribe, the Muckleshoot Indian Tribe, the Snoqualmie Tribe, the Squaxin Island Tribe, or the Yakama Nation. A copy of this correspondence is provided in Appendix B.

BACKGROUND REVIEW

Determining the probability for cultural resources to be located within the APE was based largely upon review and analysis of past environmental and cultural contexts and previous cultural resource studies and sites. Consulted sources included project files; local geologic data; archaeological, historic, and ethnographic records; selected published local historic records, and assessor’s records. Archaeological, historic, and ethnographic records were reviewed from the DAHP’s Washington Information System for Architectural and Archaeological Records Data (WISAARD) database.

Environmental Setting

Geology

The APE is located on Commencement Bay in the Puget Lowland physiographic province, which extends from the Washington Cascade Mountains to the Washington coastal ranges (the Willapa Hills and Olympic Mountains) between the Canadian border to the north and the Cowlitz River to the south. The Puget Lowland is a section of seismically active forearc basin created by the Cascadia Subduction Zone (CSZ) off the coast of Washington and first appeared approximately 51-49 million years before present (YBP), when the Siletzia large igneous province accreted to the edge of the North American Plate (Anderson et al. 2011; Schmandt and Humphreys 2011).

The majority of surface geology in the Puget Lowland reflects the repeated glacial intervals of the Pleistocene, in which large continental ice sheets and smaller alpine glaciers flowed into the basin. These ice sheets scoured and redeposited materials over the course of 2.6 million years, leaving a layer of widespread but largely discontinuous glacial, fluvial, and marine deposits sometimes exceeding 100 meters (m) in depth (Easterbrook 2003; Troost 2016). The most recent glaciation of the Puget Lowland was during the Vashon State of the Fraser Glaciation, between approximately 19 and 11 thousand YBP, when the Cordilleran Ice Sheet (CIS) covered the northern and central regions of the basin with up to 1.8 kilometers (km) of ice (Easterbrook 2003; Troost 2016). This period is responsible for many of the most prominent features of the modern Puget Lowland, including the split channels of Puget Sound, the region's ubiquitous north-south ridgelines, its more limited plains, many of its lakes, and several of its larger river valleys, which were formed by glacial scour and deposition and subglacial or proglacial/ice-marginal meltwater runoff. The CIS reached its maximum Vashon extent, 25 km south of Olympia, by around 16.9 thousand YBP before retreating northwards, allowing marine waters to enter the Puget Sound around 14.8 thousand YBP and rapidly disintegrating into a collection of floating bergs and stagnant, grounded ice (Easterbrook 1992, 2003; Thorson 1980; Troost 2016). Prior to the unblocking of the Strait of Juan de Fuca and connection of Puget Sound to the Pacific Ocean (14.8 thousand YBP), meltwater was forced to pool in the southern basin to create large proglacial lakes within the channels of Puget Sound and partially abandoned river valleys, ultimately draining south through the ancestral Chehalis River. Subsequent glacial stades of the Fraser Glaciation contributed several beds of glaciomarine sediment to the regional stratigraphic record but did not involve glacial intrusion into the lowlands (Easterbrook 1969, 1992; Thorson 1980).

The retreat of the CIS and contemporary alpine glaciers at the end of the Vashon Stade ended glacial landscape evolution in the Puget Lowland but had long-term implications for the province that continued through the early Holocene. The loss of ice mass permitted isostatic rebound across the province, causing differential uplift roughly proportional to the thickness of the ice sheet (Thorson 1980, 1981). Uplift since the end of the Vashon Stade varies from near-zero at the southernmost extent of the CIS (near Black Lake in Olympia) to 140 m near the Skagit River, and possibly up to 350 m further north in Canada; rebound in the Tacoma area is estimated at 20-30 m. The majority of isostatic recovery appears to have completed by 6 thousand YBP and the rate of associated uplift reduced to negligible levels, although accumulated stress from the uneven recovery likely contributes to ongoing seismic activity in the region (Thorson 1981). Simultaneously, the release of water previously impounded in ice sheets produced approximately

150 meters of eustatic sea level rise from the end of the Vashon Stade until approximately 7 thousand YBP, when sea level change slowed (Lambeck et al. 2014; Thorson 1981). While an end-Pleistocene eustatic datum has not been determined for the Puget Lowland, this rise combined with isostatic rebound to produce a complex pattern of terrestrial and marine deposits around Puget Sound and establish the baseline conditions for more localized Holocene evolutions (Easterbrook 1992; Thorson 1981).

The Puyallup River began as a subglacial meltwater channel during the Vashon Stade glaciation which drained the Puyallup and Tahoma Glaciers on Tahoma (Mt Rainier). At the end of the Vashon Stade, the river flowed east through glacial valleys in the South Cascades, then turned north to follow a glacial scour lineament and meltwater channel in the Puget Lowland before splitting near Sumner to drain both north, into the Duwamish Valley, and west, into the Lower Puyallup River Valley along a fault trace associated with the Tacoma Fault Zone (Palmer 1997; Sherrod et al. 2004). At the end of the Pleistocene, the floor of the valley was more than 80 meters below modern mean sea level; however, lower relative and eustatic sea levels placed the Puyallup River's delta west of its modern position near Browns Point and Point Defiance (Barnhardt et al. 2018[CH1] [CH2]; Dragovich et al. 1994). The rapid sea level rise between the retreat of the CIS and 7 thousand YBP flooded the lower valley and most of the upper valley, transforming it into an embayment of Puget Sound which stretched from modern-day Kenmore, Seattle, and Tacoma to near Orting (Barnhardt et al. 2018). The river delta did not regain its present position until ca. 4,200 YBP, when sediment from a series of mudflows off of Mount Rainier (starting with the Osceola Mudflow ca. 5,600 YBP, and continuing through 800 YBP) caused the lower valley to fill in (Dragovich et al. 1994; Palmer 1997; Rinck 2014). Development of the valley during the later Holocene can be broadly characterized by slow deltaic deposition interrupted by pulses of rapid deposition following mudflows and earthquakes on the Tacoma Fault Zone. When first surveyed, the deltaic area consisted of an approximately 3 kilometers wide band of tidal marshes and 2.5 kilometers of intertidal mudflats (Hart Crowser & Associates [HC&A] 1983; Pierce County 2023). Since then, many projects have been undertaken to straighten and contain the Puyallup River, reduce flooding, and reclaim wetland and tide flat areas for development; the Puyallup River was confined to its current channel in the 1930s and almost all of the coastal wetlands native to the historic delta (slightly more than 17 square kilometers) have been destroyed, while smaller channels have been cut off by systems of levees (Crandell 1963; United States Geological Survey 1941).

Soils

Sections of Port Parcel 12 may have been covered in up to 10 feet of fill materials from a documented fill event in 1963, using soils from the base of the nearby slope, although other sections may retain native Sultan silt loam with pockets of Puget silty clay loam from historic deposition by the creek (HC&A 1983; Port of Tacoma 1982; United States Department of Agriculture, Natural Resource Conservation Service [USDA NRCS] 2025).

Table 1. Soils expected to be present within the APE (USDA NRCS 2023).

NAME	SLOPE %	LANDFORM	PARENT MATERIAL	TYPICAL PROFILE	PORTION OF APE (ACRES)
Puget silty clay loam	0-2	Flood plains	Alluvium	<i>H1 - 0 to 11 inches: silty clay loam</i> <i>H2 - 11 to 24 inches: silty clay loam</i> <i>H3 - 24 to 60 inches: silty clay loam</i>	23.6
Sultan silt loam	0-2	Flood plains	Alluvium	<i>H1 - 0 to 14 inches: ashy silt loam</i> <i>H2 - 14 to 23 inches: silt loam</i> <i>H3 - 23 to 60 inches: stratified sand to silty clay loam</i>	70.8
Urban land	0-5	n/a	n/a	n/a	5.6

Flora and Fauna

The APE is located in the Puget Sound Area of the Western Hemlock (*Tsuga heterophylla*) Zone of Washington (Franklin and Dyrness 1973). The Western Hemlock Zone is sheltered from maritime airmasses by the coastal Olympic range to the west and continental air masses by the Cascade Range to the east. As a result, the zone is slightly drier than the Washington coastline and has less extreme temperature variations than the continental interior. The rain shadow of the Olympic Mountains causes drier and warmer summers than in other areas of the Puget Sound lowlands. Annual rainfall is limited to 800-900 millimeters (mm), compared to 1500-3000 mm occurring in other portions of the zone. Over 75% of precipitation is rain between October 1 and March 31, and June to August see long periods of little to no rainfall (Franklin and Dyrness 1973).

The Western Hemlock Zone climate regime is considered neither dry or prone to extreme cold. While the zone produces the highest biomass accumulations recorded in global temperate zones, moisture stress during the summer prevents the hardwood growth that dominates most other temperate regions, and mild winters accommodate the year-long growth patterns of coniferous species (Franklin and Dyrness 1973). Mature forests in the Puget Sound Area are dominated by Douglas fir, western hemlock, and western red cedar while younger forests and riparian areas are characterized by bigleaf maple, black cottonwood, red alder, and willow. Understories will generally transition from salmonberry (with a large variety of accompanying species) in young stands to a mixture of sword fern, red huckleberry, vine maple, Oregon grape, and salal (Franklin and Dyrness 1973).

Historically, most of the APE consisted of deltaic marshes (David Evans & Associates 1991). Typical west coast salt marshes have two distinct typologies, depending on elevation (Faber 1982). Low salt marshes, occurring above intertidal mudflats between +1.2 and +2.8 meters; they are flooded by the daily tide cycle and are populated by more salt-tolerant species including pickleweed (*Salicornia spp.*), arrowgrass (*Triglochin maritimum*), and saltgrass (*Distichlis spp.*). High salt marshes, between +2.8 and +3.7 meters are characterized by brackish conditions, and support bulrush or tule (*Scirpus spp.*), sedges (*Carex spp.*), and jaumea (*Jaumea carnosa*). Cattails (*Typha spp.*) may also grow around higher and more isolated channels (Faber 1982). Other plant species, as described by Cooper (1860) include Pacific silverweed (*Potentilla/Argentina anserina var. pacifica*), Pacific water parsley (*Oenanthe sarmentosa*), slender glasswort (*Salicornia herbacea*), willow dock (*Rumex salicifolius*) and golden dock (*Rumex persicarioides*), baltic rush (*Juncus balticus*) and toad rush (*Juncus bufonius*), softstem bulrush (*Scirpus lacustris*) and saltmarsh bulrush (*Scirpus maritimus*), and hairgrass (*Aira elongata*).

Cultural Setting

Precontact

Human occupation in the Northwest Coast is believed to have begun following the retreat of glacial ice across the landscape in the Late Pleistocene. The earliest cultures in the region are thought to have resided in the area beginning approximately 14,000 Years Before Present (YBP) (Matson and Coupland 2009). Subsistence strategies included an adaptation to highly variable climates and a changing environment (Matson and Coupland 2009). Currently, archaeological evidence indicates patterns of high mobility and small groups reliant on large game and seasonably available resources (Ames and Maschner 1999; Matson and Coupland 2009). The earliest known culture sequence in the Pacific Northwest is the Clovis culture dated to 12,000 to 11,000 YBP. This culture, named for its distinctive fluted projectile points, was highly mobile and left little evidence of permanent base camps. These large fluted projectile points have been observed on the surface, distributed throughout the Puget Sound (Croes et al. 2008). The Manis site provides archaeological evidence that humans in the region were hunting mastodon as early as 13,800 years before present (YBP) (Waters et al. 2011). The Bear Creek site (45KI839) in Redmond, Washington, has been essential in providing calibrated radiocarbon dates for in situ archeological soils and has been dated to ca. 12,000 to 9,000 cal YBP (Kopperl et al. 2015; Northwest Anthropological Associates 2008).

Between 12,000 to 7,000 years ago, foraging strategies changed to include the smaller inland game, aquatic animals, and various plants. Sites from this period are typically encountered on high marine and river terraces (current and abandoned), subalpine meadows, and saltwater shores (Kirk and Daugherty 2007:84). These site types indicate a continued high mobility pattern, subsisted by terrestrial game (Angelbeck 2024). While megafauna, such as mammoth, is the most commonly evidenced food source, people also hunted smaller mammals and birds (Angelbeck 2024). This period also provides the first indication of plant processing and the use of aquatic environments (Ames and Maschner 1999). The artifact assemblage from this period is distinguishable by large leaf-shaped and stemmed points, scrapers, flake tools, and blade cores (Carlson 1990). In the Puget Sound region, as well as regions along the Columbia, the introduction of larger laurel-leaf projectile points indicates a tradition that is part of the Cascade Phase (Matson and Coupland

2009). Information about this period originates from sites in British Columbia, the Dalles on the Columbia River, and Western Washington, among others (e.g., the Manis Mastodon Site, Yukon Harbor, and Orcas Island Ayer's Pond [Angelbeck 2024]).

After 5000 YBP, populations appear to become larger and more complex as groups utilized a more extensive range of resources, including salmon and shellfish, land mammals, and plant resources such as berries, roots, and bulbs. Subsistence and settlement patterns are archaeologically evidenced to be distinct from those of earlier cultural adaptations (Kopperl et al. 2016). Settlements represent residential base camps with year-round re-occupation and access to multiple environments (Kopperl et al. 2016). Short-term base camps for smaller hunting or gathering groups, concentrating on specialized seasonally available resources, were introduced into the settlement pattern (Thomson 1978 in Kopperl et al. 2016). Between 6,000 and 5,000 YBP, these predominantly sedentary lifestyles produced the first evidence of mass processing and storage of salmon and plants (Kopperl et al. 2016). By approximately 3,000 to 2,000 YBP, hunter-gatherer subsistence settlement patterns became focused on salmon fishing throughout the Puget Sound region and along the Columbia (Blukis Onat 1987; Burtchard 1998; Kinkade 1997; Kopperl et al. 2016). Additionally, ground stone tools, microblades, and cores appear at this time as well as bone and antler tools, ground shells, and harpoons. Canoe technology most likely developed around 2,000 to 3,000 YBP with the construction of large plank houses (Hebda and Mathewes 1984; Donald 2003; Matson and Coupland 2009). Shell middens are also prevalent in this period and continued into the ethnohistoric period (Ames and Maschner 1999:89).

Ethnohistoric

Based on archaeological evidence, the ethnohistoric period closely resembles what European explorers encountered when they first arrived in the eighteenth century (Nelson 1990); however, non-Native contact rapidly altered lifeways in the region (Cole and Darling 1990). Village sites are commonly present during this period and are placed at the mouth and the confluence of rivers (Smith 1940). Seasonal camps were revisited yearly, producing an archaeological record of changing technologies and massive shell middens (Nelson 1990). Faunal remains of large and small sea mammals, including whales, indicate an increased ability to hunt at sea (Ames and Maschner 1999; Matson and Coupland 2009). This is also evidenced by the introduction of compound harpoons made of three pieces bound together for more versatile individual pieces (Ames and Maschner 1999). During this time, a notable shift in the abundance of gathered plants and roots indicates selective management of the naturally available seasonal resources (Deur and Turner 2005). With this, an intensification in a storage-based economy where plant and animal resources contributed to community subsistence year-round, including the least productive months (Ames and Maschner 1999; Deur and Turner 2005).

Ethnographic Placenames

According to T.T. Waterman (Hilbert et al. 2001), numerous placenames have been previously recorded in the immediate vicinity of the APE (Table 2); these generally include names of what is today known as Commencement Bay and associated drainages.

Table 2. Ethnographic locations previously recorded in, and within a one-mile radius of the APE.

LOCATION	WATERMAN ORTHOGRAPHY	WATERMAN TRANSLATION/ DESCRIPTION	LUSHOOTSEED	APPROXIMATE DISTANCE FROM APE
Hylebos Creek (Hilbert et al. 2001:248[16])	<i>XaxtL!</i>	“brushy”	<i>xaxx</i>	0.4 mile E of Port Parcel 12
Wapato Creek (Hilbert et al. 2001:248[15])	<i>Qa'iqalEqw</i>	“making many turns”	<i>qal'qaləqw</i>	0.9 mile SW of Port Parcel 12

Tribal Areas of Interest

Almost the entire APE is located within the modern boundaries of the PTOI reservation. In addition to the PTOI, the APE is in the Tribal Areas of Interest for the following federally-recognized Tribes (DAHP 2025):

Muckleshoot Indian Tribe

The Muckleshoot Indian Tribe are a group of Southern Lushootseed speaking Southern Coast Salish people (Suttles and Lane 1990). The Muckleshoot Tribe is comprised of many traditional groups including the Upper Puyallup, Upper Duwamish, and other inland groups, such as the Dothliuk of South Prairie Creek, the Sitkamish, the Smulkamish of the Upper White River reaches, and the Yilalkoamish and Skopamish of the Upper Green River reaches (Muckleshoot Indian Tribe 2025; Noel 1980; Smith 1940; Suttles and Lane 1990: 488).

The following short description of traditional lifeways is from Muckleshoot Indian Tribe (2025):

Our ancestors fished for salmon, trout, and steelhead all along the rivers and the Sound, collected shellfish on Puget Sound, hunted for game, harvested huckleberries and other resources throughout their traditional use areas of the Cascade Mountains, and weaved baskets out of the sacred cedar trees that were once plentiful in the lush forests of the Pacific Northwest.

Nisqually Indian Tribe

The traditional territory of the Nisqually Indian Tribe is documented as extending along both sides of the Nisqually River from its delta to Mount Rainier and generally includes the present-day towns of Olympia, Tenino, and Dupont (Nisqually Indian Tribe 2025; Ruby et al. 2010: 213; Suttles and Lane 1990: 486). Major Nisqually village sites have been identified at the Nisqually River delta, Nisqually Lake, and confluences of Muck Creek, Clear Creek, and Mashel Creek, and at the towns of Roy, Rainier, and Tenino (Ragsdale et al. 2012; Smith 1940).

The Nisqually are fishing people and speak the southern dialect of Lushootseed (Ruby et al. 2010: 213). Unique facets of Nisqually culture include their connection to Sahaptian-speaking people east of the Cascades and their building techniques (Smith 1940). Their cedar longhouses were gable-roofed and sided with vertical planks, unlike the shed-type roofs and vertical plank walls used by other Coastal Salish groups such as the Squaxin Island Tribe (Ragsdale et al. 2012).

Puyallup Tribe of Indians

The Puyallup Tribe of Indians are a Southern Coast Salish group and speak the Southern Lushootseed language (Suttles and Lane 1990). In their own language, they are known as “*puyaləpabš*,” which translates to “people from the bend at the bottom of the river” (PTOI 2025a) and is also associated with the “welcoming and generous behavior” of the Tribe.

The traditional territory of the Puyallup ranges from the foothills of *təqʷuʔmaʔ/təqʷuʔbəd* (Mt. Rainier) to Commencement Bay (PTOI 2025a; Suttles and Lane 1990; Smith 1940). The primary village was located at the mouth of the Puyallup River. The Tribe describes that villages were the “heart of social, economic, and political networks, connecting us with the people and villages upriver and along the Sound” (PTOI et al. 2021). Traditionally, Puyallups were piscatory people, eating mostly resources from the ocean and rivers. They supplemented this diet with roots and berries (Ruby et al. 2010: 237). Cedar was an important resource, providing material to create homes, clothing, canoes, and more. Traditionally, the PTOI “lived in long houses along the rivers and creeks and traveled primarily by canoe along the vast waterways” (PTOI et al. 2021).

Snoqualmie Indian Tribe

The Snoqualmie are considered by anthropologists to be part of the Southern Coast Salish culture area and are speakers of Southern Lushootseed (Suttles and Lane 1990). The Tribe’s name in Lushootseed is *sdukʷalbixʷ* (Minella 2019). Their traditional territory is within the southern Salish Sea region (Minella 2019). Some released village sites were located along the shores of Lake Sammamish in areas such as contemporary Redmond, North Issaquah, and within the alignment of modern Interstate 90 (I-90) (Ruby et al. 2010: 306; Snoqualmie Tribe of Indians [Snoqualmie Tribe] 2021).

Traditionally, the Snoqualmie “hunted deer and elk, fished for salmon, and gathered berries and wild plants for food and medicine” (Snoqualmie Tribe 2020). Of particular significance is “the little red salmon” *sʔilas* (Kokanee), a unique, landlocked species native to Lake Sammamish (Minella 2019). In accordance with Snoqualmie teachings of living with the land, longhouses were integrated into the landscape based on positioning of lakes and rivers (Minella 2019).

Squaxin Island Tribe

The Squaxin Island Tribe’s ancestral homelands are along the seven southern-most inlets of the Salish Sea (Squaxin Island Tribe Museum, Library and Research Center [SITMLRC] 2018; Squaxin Island Museum and Tourism Department Staff [SIMTDS] 2015). Each inlet has an ancestral name and associated band: the S’Hotl-Ma-Mish (Carr Inlet), the Squaksin (Case Inlet), Sa-Heh-Wa-Mish (Hammersley Inlet), T’Peeksin (Totten Inlet), Squi-Aitl (Eld inlet), Steh-Chass (Budd Inlet), and Noo-She-Chatl (Henderson inlet). Known as the “People of the Water” (SITMLRC 2018:14), the Squaxin Island Tribe’s traditional territory includes overland trails, rivers, and lakes, in addition to the seawater they are known for traversing. While permanent villages are known to be located near the Seven Inlets, the trails the Tribe utilized ranged from “thousands of miles beyond the Rocky Mountains, north to Alaska, and up and down the western Pacific coastal sea” (SITMLRC 2018:14).

Anthropologists commonly note the Squaxin Island Tribe as primarily being Lushootseed speakers (Suttles and Lane 1990); however, they were historically versed in several Native languages, in addition to using Chinook Jargon and sign language (SITMLRC 2018). The geographically diverse traditional territory of the Squaxin yielded a number of food sources such as terrestrial mammals including elk, and aquatic animals like the Olympia oyster (SITMLRC 2018). Use of the Olympia oyster is demonstrated by the Mud Bay site (45TN240), *Qwu?gwes*, on Eld Inlet, a shell midden and wet site dating to 200 -1000 YBP (Foster et al. 2013). The site has thermally altered rock, which Squaxin tribal members “intentionally placed to encourage oyster production” (Crowes and Foster 2003:2). Permanent homes were cedar plank longhouses, where families resided with their own separated living quarters (Foster et al. 2013). Longhouses were typically situated on flat terraces close to salt water, or fresh water, where canoe travel was easy (Foster et al. 2013).

Suquamish Tribe

The Suquamish name, *dx^wsəq^wəbš*, comes from Lushootseed, meaning “people of the clear salt water” (Suquamish Tribe 2024). The Suquamish Tribe had traditional territories within Central Puget Sound, in areas stretching between Gig Harbor and Appletree Cove, Admiralty Inlet and Hood Canal, between Case Inlet and Carr Inlet, and on Bainbridge, Blake, and Whidbey Islands (Ruby et al. 2010: 326; Suquamish Tribe 2024). Occupation varied seasonally, traditionally Suquamish members lived in permanent winter houses made of cedar planks and logs (Suquamish Tribe 2024). These winter houses, or longhouses, varied in size between 200 feet and 600 feet in length (Suquamish Tribe 2024). Traditional winter village locations were at “Suquamish, Point Bolin, Poulsbo, Silverdale, Chico, Colby, Olalla, Point White, Lynwood Center, Eagle Harbor, Port Madison, and Battle Point” (Ruby et al. 2010: 326; Suquamish Tribe 2024). The winter village site at present-day Seattle is known as “Dzidzilalich,” or “Little Crossing – Over Place,” and was a major meeting place for tribes like the Suquamish, ancestors of the contemporary Muckleshoot Indian Tribe, and the ancestors of the contemporary Duwamish Tribe (Ott 2014; Suquamish Tribe 2024).

When spring arrived, they would leave the winter villages in family canoes and travel to temporary camps for resource-gathering (Suquamish Tribe 2024). Food sources included the seasonal harvests of fish, shellfish, waterfowl, land game (deer, elk, etc.) roots, and berries (Suquamish Tribe 2024). The temporary summer camps were constructed of portable frames made of tree saplings and covered with woven cattail mats (Suquamish Tribe 2024). The Tribe emphasizes the place *dx^wsəq^wəb*, “has been the primary home of the Suquamish people since time immemorial. It is the ancient place on Agate Passage, the site of Old-Man-House Village, the winter home of Chief Seattle and the heart of the Suquamish people. It is here- past, present and future that the Suquamish people live on the land of our ancestors and our great-grandchildren” (Suquamish Tribe 2024).

Confederated Tribes and Bands of the Yakama Nation

The Confederated Tribes and Bands of the Yakama Indian Nation are a Southern Coast Salish group and speak the Southern Lushootseed language. The traditional territory of the Yakama extends the course of the Yakima River from the Cascade Mountains to modern-day Pasco and encompasses the interconnecting streams along the way (Ruby et al. 2010: 388). Ceded lands of

the Yakama also include the lowlands near the Columbia River up to Glacier Peak in the Cascade Mountains (Confederated Tribes and Bands of the Yakama Indian Nation [CTBYN] 2021).

Groups lived on the valley floor during the winter months, where the climate was relatively moderate, in villages generally near waterways (CTBYN 2021; Schuster 1998: 335). During the spring and summer months, people spread throughout the landscape, hunting, fishing, gathering, and processing plants and roots (CTBYN 2021). Mat houses, which also served as drying areas for fish, were erected near fishing sites during these months (Schuster 1998: 335). The most valuable food source was salmon and steelhead obtained from the Columbia River (Ruby et al. 2010: 389). Fish was eaten fresh during the warmer months and smoked for winter use. Fish was supplemented with game, including deer and elk, and plant foods such as biscuitroot and camas (Ruby et al. 2010: 389; Schuster 1998: 331).

Historic

Before the late 1700s, multiple expeditions were made by non-Natives to chart the Pacific Northwest, including a 1513 expedition by the Spanish explorer Vasco Nunez de Balboa, two Russian-backed journeys led by Captain Vitus Bering in 1728 and 1741, Spanish expeditions in 1774 and 1775, and English captain James Cook's 1778 voyage to Cape Flattery (Oldham 2003; Rochester 2003). In 1792, English explorer Captain George Vancouver, who had sailed on Cook's 1778 trip, returned to the Puget Sound for a significant survey of the Puget Sound. Vancouver sent Lieutenant Peter Puget and Master Joseph Whidbey on a six-day tour beginning on May 20, 1792. The pair mapped and gave English names to various landmarks, including Whidbey Island, Puget Sound, Mount Rainier [*təqʷuʔmaʔ/təqʷuʔbəd*], and Hood Canal (Crowley 2003a; Oldham 2003).

After Vancouver's exploration of Puget Sound, dozens of merchant ships came to the area to trade with Native Americans (Morgan and Morgan 1984). Interior exploration by non-Natives was fronted by the Lewis and Clark expedition, which entered present-day Washington on October 10, 1805, and reached the Pacific Ocean near Long Beach in November 1805 (Crowley 2003b). In 1825, the Hudson's Bay Company (HBC), a partnership between the Bay Company and the Northwest Company, established fur trade posts in today's Washington state when Chief Factor John McLoughlin moved his operation at Fort George north of the Columbia River to Fort Vancouver. From there, Captain Vancouver oversaw expansion into the Puget Sound region, where his staff traveled, trapping and trading with local tribes until they returned south to Fort Vancouver in the fall (Crowley 2003b; Nisbet and Nisbet 2011). In 1833, the HBC further expanded its operations by founding Fort Nisqually on a flat expanse of land midway between Vancouver, British Columbia, and the Columbia River. Fort Nisqually was the first permanent non-Native settlement in the area and acted as a local hub for traders and new Euro-American settlers (Crowley 2003b). In 1840, Captain Vancouver established the Puget Sound Agricultural Company at Nisqually to provide crops and livestock to an increasing number of Russian American fur traders from Alaska (Crowley 2003b; Nisbet and Nisbet 2011). While farming at Fort Vancouver and Fort Nisqually, HBC cultivated cattle, hogs, goats, apple trees, grapevines, potato patches, and other crop gardens, among other locations. Fort Vancouver's wheat harvest alone supplied the company throughout the Northwest (Rowe 2018).

Development of the Oregon Trail in the 1830s led to a steady increase in immigration to the Puget Sound region, further spurred by the Distributive Presumption Act of 1841, which recognized squatters' rights and allowed settlers to buy up to 160 acres for \$1.25 an acre after 14 months of residence (Nisbet and Nisbet 2011). In 1843, the provisional government in Oregon was offering 640-acre claims to new settlers, partly to assist the United States in establishing control of the region, which it shared with Great Britain. Political struggles over control of the Pacific Northwest continued between Britain and the United States until 1846, when a boundary settlement was signed under which Britain relinquished claims to lands north of the 49th parallel in the Oregon Territory (Morgan and Morgan 1984). Washington Territory was then carved from Oregon Territory in 1853 (Crowley 2003b). The 1850 Donation Land Claims Act, which granted 320 acres to white male United States citizens who had occupied their land for four years, spurred a further influx of homesteaders (Riddle 2010). The first white settler at Commencement Bay is said to have been Nicholas Delin, who arrived in 1852 (Morgan and Morgan 1984; Wilma 2002). The Swedish-born carpenter built a small mill at the confluence of two streams (presently the intersection of Dock Street and Puyallup Avenue), which attracted several workers and a commercial ship to load lumber for sale to San Francisco (Magden 2008). Delin then sold lumber to local manufacturers (Morgan and Morgan 1984). The next family to arrive was Peter and Anna Judson, who bought a cabin near today's Pacific Avenue and South Seventh Street.

Disagreements over land use and ways of life led to disputes between Native Americans and non-Natives throughout Washington Territory in the mid-1800s (Oldham 2022; PTOI 2025a; Rowe 2018). As settlement increased, new agricultural and ranching practices introduced plant and animal species, which suppressed native species. Euro-American culture overtook traditional lifeways, including the late-summer controlled burns that Native American tribes used to prepare the land for new crops of camas and berries (Rowe 2018). On December 26, 1854, members of the contemporary Puyallup, Nisqually, Steilacoom, and Squaxin Island tribes were pressured by Governor Isaac Stevens to sign the Treaty of Medicine Creek. The treaty stipulated that tribes would cede 2.2 million acres of their lands in exchange for occupancy rights at one of three guaranteed reservations (the Puyallup, Nisqually, or Squaxin Island Reservation), limited rights to fish, hunt, forage, and otherwise collect resources on unoccupied lands in their traditional territories, and \$32,500 to be paid over a period of 20 years (Oldham 2022).

For the ancestral groups of the Muckleshoot tribe, the Treaty of Medicine Creek and the Treaty of Point Elliott both established rights to hunting, fishing, and resources as well as delegation to small reservations (Muckleshoot Tribe 2025). The Treaty of Point Elliott also established these rights and regulations to the Suquamish and Snoqualmie tribes as well as many others (Muckleshoot Tribe 2025; Snoqualmie Tribe 2020; Suquamish 2024). By 1856, after war and strife due to the first treaties, the Fox Island Council meeting occurred and aimed to address dissatisfaction with the established reservations from the treaties (Muckleshoot Tribe 2025). Within this meeting, the agreement to develop the Muckleshoot Reservation was made (Muckleshoot Tribe 2025). Similarly, for the Confederated Tribes and Bands of the Yakama Nation, the Treaty of 1855 established a reservation and certain rights for the tribes and bands under the one term "Yakama" but also raised opposition due to Governor Stevens declaring their land open to white settlers only twelve days after the signing of the treaty (CTBYN 2021).

For the Treaty of Medicine Creek and others, many of the 62 tribal leaders asserted that their signatures were either coerced or forged, conditions on the reservations were poor as they were generally situated on the least desirable areas, and the conditions of the treaty were quickly violated by Euro-American settlers. Several tribes revolted against the treaty conditions in the Puget Sound Indian and Yakama Wars between 1855 and 1858. Conflict began in the eastern portion of the territory and quickly spread west to the Puget Sound area (Oldham 2022). The uprising was suppressed by the United States Army and the Treaty Wars were declared over on May 19, 1856 (Gatto 1964). Following the end of the war, the Puyallup, Nisqually, and other tribes met with a United States delegation to renegotiate the treaty's terms. Renegotiations resulted in the expansion or improvement of the Puyallup, Nisqually, and Squaxin Island Reservations and the creation of the Muckleshoot Reservation for groups associated with inland territories (Ruby et al. 2010).

The removal of American Indians from their homelands opened the way for non-Native settlement across Washington, further aided by the passage of the Homestead Act in 1862 (Riddle 2010). Tacoma, not far from Steilacoom, was one of the earliest cities in the state. The original city was founded along the western shore of Commencement Bay, north of the deltaic wetland areas where ship access was easier (Morgan and Morgan 1984). “Old Town” is nestled along Ruston Way, centered along McCarver Street. On the shoreline, at a place Native Americans called *shubahlup*, prominent Tacoma pioneer Job Carr built a cabin in 1864 (Morgan and Morgan 1984). This area is approximately three miles to the northwest of the Gog-le-hi-te and three miles east of Neptune Development. Shortly after, developer Morton McCarver came to Tacoma seeking a great city in the west. He purchased land from Carr and platted Tacoma in 1868 (Morgan and Morgan 1984; Wilma and Crowley 2003). Attracted by the economic potential of the area, Charles Hanson built a steam sawmill and the Starr Street Wharf in 1868 at *shubahlup* (Morgan and Morgan 1984).

Development in the greater Tacoma area spread from several discrete loci: the largest settlement bordered the waterfront, on the slopes overlooking the historic mudflats around the mouth of the Puyallup River, but smaller satellite communities developed nearby (USGS 1897). Settlement was facilitated by a series of railroad projects, which turned Tacoma into an important transit hub. In 1864, a land grant was awarded for the construction of the Northern Pacific Railroad (then the Milwaukee and Union Pacific), and cities along Puget Sound competed to be selected as the terminus of the new line by offering incentives and financial advantages. In July 1873, Northern Pacific executives announced that Tacoma’s Commencement Bay would be the railroad’s new terminus. It was undeveloped and closer to the rail line’s route along the Columbia River than Seattle. The decision set off a bitter rivalry between the two cities and kicked off decades of rail expansion in the area, thrilling entrepreneurs like Tacoma’s first promoter, Matthew McCarver, who had located the city on Commencement Bay, hoping to attract the railroad to its deep-water port (MacIntosh and Wilma 1999). The railroad purchased Hanson’s mill, an additional two miles of waterfront, and 600 acres of tideflats for development (Morgan and Morgan 1984; Wilma and Crowley 2003). The company went bankrupt during the “Great Panic” of 1873, but reorganized and completed construction in 1883 (Morgan and Morgan 1984). Numerous smaller stub lines were built out from the main rail hub at Commencement Bay and operated through the end of the 19th century and into the early 20th century.

Development also continued along the waterfront. City Waterway (now Thea Foss Waterway) was dredged between 1880 and 1889 to serve as Tacoma's primary waterfront, and the spoils were used to build up the areas around Dock Street and St Paul Tacoma Mill (David Evans & Associates [DE&A] 1991; Magden 2008). Tacoma sought trade with Asia, and in 1887 became the permanent receiving port for the Japanese tea fleet. With the success of the tea trade, imports expanded to other items, including straw goods, rice, and silk (Wilma and Crowley 2003).

A significant portion of the labor force in the Pacific Northwest during the latter half of the 19th century was composed of young Chinese immigrants who came to the United States to take advantage of the opportunities in a young and rapidly expanding market, often with the intent of returning to China after earning enough money to secure a comfortable lifestyle at home (University of Puget Sound 2018). Many found work in railroad construction projects and mining enterprises or formed communities in cities where they worked in laundries, groceries, and domestic fields. As the population of Chinese Americans grew, they established mutual aid societies to support one another and to provide new immigrants with a safe start upon arrival. The success and visibility of the Chinese American population was opposed by steadily increasing nativist sentiment by other groups, particularly Euro-American workers. Anti-Chinese sentiment was ingrained in federal law with the 1882 Chinese Exclusion Act and 1892 Geary Act, prohibiting Chinese immigration, and manifested with protests and outbursts of violence against Chinese workers throughout the western states. On November 3, 1885, the approximately 1,000 members of the Chinese American community in Tacoma were forcibly expelled, their supporters intimidated, and their neighborhood later burned by a mob of 500 white residents who forced them to buy train tickets south to Portland or to simply start walking and not stop (University of Puget Sound 2018). The event, named "The Tacoma Method," was applauded locally and in numerous other western cities, but was widely condemned by the rest of the nation and the international community. Twenty-seven white residents and one remaining Chinese resident, Ah Chung Charley, were arrested for the incident. Ah Chung Charley was soon acquitted, having had nothing to do with the mob or the following arson. The 27 white residents, including several prominent public figures such as the mayor of Tacoma, were indicted but never convicted of a crime and continued to be influential in state and local politics. The United States government under President Cleveland offered a formal apology to China in 1886. It paid \$276,619.75 in damages to the Qing government over anti-Chinese violence. Still, it maintained the ban on Chinese immigration until the repeal of the Geary Act in 1943 (University of Puget Sound 2018).

As commercial and residential development in and around Tacoma expanded, non-Native citizens requested that restrictions on allotted reservation lands be removed to accommodate further urban and industrial growth. In 1887, the General Allotment Act, or Dawes Act, authorized President Grover Cleveland to survey tribal-held lands and divide them into individual allotments for tribal members. The Puyallup Indian Reservation was separated into 178 allotments and assigned to individual families (Ruby et al. 2010). Many tribal landowners eventually sold their lots after being pressured to do so, after their property was auctioned, or after it was automatically approved for inclusion in railroad rights-of-way. By the end of the 19th century, over half of the former reservation land had been purchased by non-Natives for a variety of industrial and commercial purposes (PTOI 2025a).

Entering the 20th century, Tacoma entered a pattern of financial ruin followed by periods of economic expansion, driven mainly by wartime demand for shipyards and timber or agricultural products (Pierce County 2023). During the first three decades of the 20th century, Tacoma experienced rapid expansion and a boom of public spending programs. A large portion of Tacoma's economy was provided by the 22 sawmills operating around Commencement Bay by 1907, earning Tacoma the moniker of "Lumber Capitol of the World" (Magden 2008). The lumber industry was well supported by the excellent transport capabilities of the local and regional railroads and the potential of the Tacoma waterfront. By 1907, several privately owned docks extended over the tideflats to reach the deeper waters further into Commencement Bay and Tacoma was served by both large trade vessels and a collection of small passenger and small freight steamers operating under private companies (dubbed the "Mosquito Fleet"), but further development was repeatedly hindered by recessions, floods, concerns over the stability of the tideflats, and the scale of labor required to build significant improvements (Gallacci 2006; Magden 2008; Pierce County 2023; Tacoma Daily Ledger 16 May 1901:2; The News Tribune 21 Nov 1903:11; White 1907). Flooding was addressed in 1913, when King County and Pierce County agreed to jointly fund a system of levees and revetments to straighten and contain the Puyallup and White Rivers (Pierce County 2023). In 1918, Pierce County citizens voted to establish a public port district with elected commissioners to provide "modern facilities and equipment to handle shipping" (Fairbanks and Martinez 1981:1) and eliminate shipping and cargo restrictions enforced by private docks. The first public pier finished construction in 1921, and a second began operations two years later. As both population and industry skyrocketed, Tacoma funneled its revenue into expanded and improved public education programs to serve the needs of the growing economy (Pierce County 2023; Historic Tacoma 2010).

The Great Depression of the 1930s caused major disruptions in Tacoma's economy. A series of strikes in 1934 by local unions shut down the port for months, and wages decreased in many industries. The economy eventually began to recover with the creation of a new industrial district in 1939 and the onset of World War II. While the war seriously impacted businesses and many Japanese residents in Washington were removed to internment camps, the Port and associated industries were kept active, supporting military manufacturing and deployment (Magden 2008; Historic Tacoma 2010). Following the war, the city was affected by the increasing dominance of personal automobiles and the expansion of suburban areas, with railways and streetcar lines phasing out operations as neighborhoods became more dispersed (Pierce County 2023).

Today, Tacoma is the second largest city in Washington with a commercial section centered around the Port of Tacoma and Commencement Bay. The city center is surrounded by extensive neighborhoods of more diffuse suburban developments. Many neighborhoods show the lingering effects of historic policies, including the marginalization of the Puyallup Tribe of Indians, annexation of reservation land, and redlining, but also investments into public infrastructure, transportation, and education (Egan 1988; City of Tacoma 2015, 2023; Oldham 2008; University of Puget Sound 2023; Wilma and Crowley 2003).

Land Use History

To identify the land use history of the APE, ATCRC reviewed archival records, including, but not limited to, local histories, historic maps and photographs, municipal Assessor’s records, and newspapers (Table 3).

Table 3. Archival records reviewed to establish land use history of Port Parcel 12.

DATE	TITLE (SCALE)	SOURCE	INFORMATION
1873a, 1873b	General Lands Office: Puyallup Indian Reservation	Bureau of Land Management-General Lands Office (BLM GLO); Puget Sound River History (PSRHP 2023a).	No physical or cultural features mapped at APE; within NENE of Section 1. Field notes along E survey line in Section 1 through APE describe conditions from “thick crabapple & young alder. Salmon-brush. Vine maple & briars – good soil” to a swamp with willow, alder, and small cottonwood, and hardhack.
1877	T-Sheet 1453	Puget Sound River History ([PSRHP] 2025b)	APE just outside of mapped mudflats/wetlands
1892	T-Sheet 2262	PSRHP (2025b)	No major changes
1892	Map of the Puyallup Indian Reservation	Washington State University Digital Collections (WSU 2025)	Owned by “Elizabeth Kirshner”
1897	Tacoma, WA, 1897 ed (1:125,000)	United States Geological Service (USGS)	The area east of APE is shown as adjacent to the King County/Pierce County line. A road with approximately six to eight structures along it is located adjacent to the APE on the south and east. Directly north of the APE is marked as water/wetland.
1900	Tacoma, WA, 1900 ed (1:125,000)	USGS Topoview (2025)	No major changes from 1897 map
1900 (1902 ed)	Tacoma, WA, 1902 ed (1:125,000)	USGS Topoview (2025)	No major changes
1900 (1906 ed)	Tacoma, WA, 1906 ed (1:125,000)	USGS Topoview (2025)	No major changes
1900 (1909 ed)	Tacoma, WA, 1909 ed (1:125,000)	USGS Topoview (2025)	No major changes
1900 (1913 ed)	Tacoma, WA, 1913 ed (1:125,000)	USGS Topoview (2025)	No major changes
1900 (1924 ed)	Tacoma, WA, 1924 ed (1:125,000)	USGS Topoview (2025)	No major changes
1900 (1940 ed)	Tacoma, WA, 1940 ed (1:125,000)	USGS Topoview (2025)	No major changes
1900 (1945 ed)	Tacoma, WA, 1945 ed (1:125,000)	USGS Topoview (2025)	No major changes
1931	1931 Aerial Imagery	TacomaMaps Portal	The APE is within an open plot of land adjacent to the southwest of contemporary Taylor Way E, with the roadway appearing partially within the APE. A few

DATE	TITLE (SCALE)	SOURCE	INFORMATION
			clusters of large trees appear within the APE, with the open land characterized as cultivated farmland. Adjacent to the APE to the southeast and northwest appear to be a few developed residential lots.
1940	Poverty Bay SW	Nationwide Environmental Title Research Online – Historic Aerials (NETROnline); PSRHP (2025c)	The area of APE was in the area of cleared-out and cultivated farmland. Some larger trees were visible and some roads as well. Major road located north/northeast of the APE. Around 5 structures were located near the APE.
1940	1940 Aerial Imagery	TacomaMaps Portal	The APE remains within an area of cleared-out and cultivated farmland with clusters of large trees visible, situated just southwest of Taylor Way E. A small residential structure with an associated driveway is depicted partially within the Northeast corner of the APE, and area adjacent. Small-scale residential development surrounding the APE to the west, south, east, and northeast is depicted.
1941	Aerial Imagery	NETROnline (2025)	No major changes. The farmland area was more cleared of trees and vegetation. Road along the western and southern sides of the APE.
1945	Aerial Imagery	Pierce County (2025) PublicGIS	The entire area of APE was large farmland pastures with some structures nearby to the south and east outside of the APE. Large swathes of vegetation and cleared out pastureland. One large road visible to the northeast and two smaller roads to the south and west.
1949 (1956 ed)	Poverty Bay, WA, 1956 ed (1:24,000)	USGS Topoview (2025)	Approximately 6-8 structures marked within the APE. Roads marked to the west, south, and northeast of the APE as well. Road to the northeast of the APE is marked as 4 lanes.
1950	1950 Aerial Imagery	TacomaMaps Portal	No major changes.
1955	Aerial Imagery	NETROnline (2025)	No major changes
1960	Metsker's Atlas of Pierce County pages 55, 64, 63	Historic Map Works	Owned by Port of Tacoma
1961 (1962 ed)	Poverty Bay, WA, 1962 ed (1:24,000)	USGS Topoview (2025)	No major marks within the APE. Nine structures marked outside of the APE to the east and southeast.
1961 (1969 ed)	Poverty Bay, WA, 1969 ed (1:24,000)	USGS Topoview (2025)	No major changes within the APE. 15 structures marked outside of the APE to the east and south. Major multi-lane road marked to the west/northwest of the APE.
1961 (1976 ed)	Poverty Bay, WA, 1976 photo revised ed (1:24,000)	USGS Topoview (2025)	No major changes
1961 (1981 ed)	Poverty Bay, WA, 1981 ed (1:24,000)	USGS Topoview (2025)	No major changes. Some additional roads and driveways marked to the west of APE.

DATE	TITLE (SCALE)	SOURCE	INFORMATION
1961 (1995 ed)	Poverty Bay, WA, 1995 ed (1:24,000)	USGS Topoview (2025)	No major changes
1965	Metsker's Atlas of Pierce County (V.1)	Historic Map Works	No changes from 1960 atlas.
1968	Aerial Imagery	NETROnline (2025)	Large road to the west of the APE. Much of the APE itself was vegetation/wetland/undeveloped land. Some houses/structures to the south and east.
1969	Aerial Imagery	NETROnline (2025)	APE: No major changes
1970	Aerial Imagery	Pierce County (2025) PublicGIS	No major changes. No structures within the APE. Large areas of wetland and vegetation.
1973	1973 Aerial Imagery	TacomaMaps Portal	Much less of the APE is cleared farmland, with the majority of it characterized by small-large tree/brush coverage, while the eastern section of the APE remains to be a cleared farmland with a small structure. In the southwestern section of the APE, cultivated rows of agriculture appear running North/South into the adjacent parcel to the south, where associated structures are located. A portion of the structures and undeveloped road/trails associated with the agricultural plot are within the APE.
1973	Aerial Imagery	Pierce County (2025) PublicGIS	No major changes to APE
1975 (1977 ed)	Tacoma, WA, 1977 ed (1:100,000)	USGS Topoview (2025)	Large road marked to all sides of the APE. No marks within the APE itself. "Substation" marked over the whole area of the APE.
1990	1990 Aerial Imagery	TacomaMaps Portal	The APE is almost entirely covered with a dense tree canopy, with the southwest pan-handle portion containing a cleared grassy area and a gravel area. The adjacent area east of the panhandle contains an open gravel lot with 2 small structures within. East of this area, there is a large warehouse structure and another small commercial structure with associated parking lots. Nearby, adjacent to these commercial structures are two separate residential structures. Development in the surrounding area is has substantially increased, with numerous commercial and residential structures being depicted.
1996	1996 Aerial Imagery	TacomaMaps Portal	No major changes.
1997	USGS Topographic Basemap (Poverty Bay 1:24,000).	ArcGIS Pro software	Same as present-day.
1998	1998 Aerial Imagery	TacomaMaps Portal	No major changes.

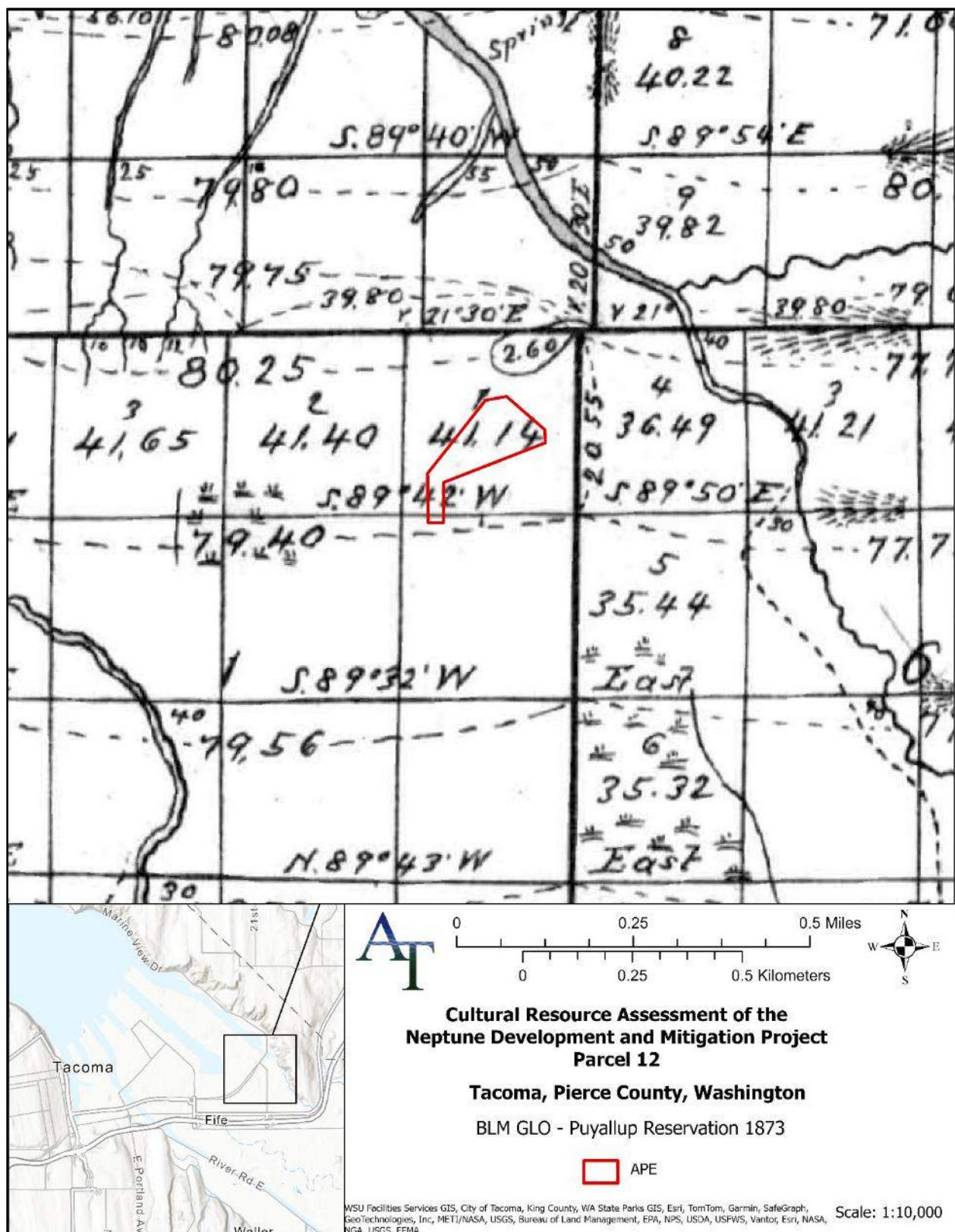


Figure 4. BLM GLO (1873) map of Puyallup Reservation, annotated with APE.

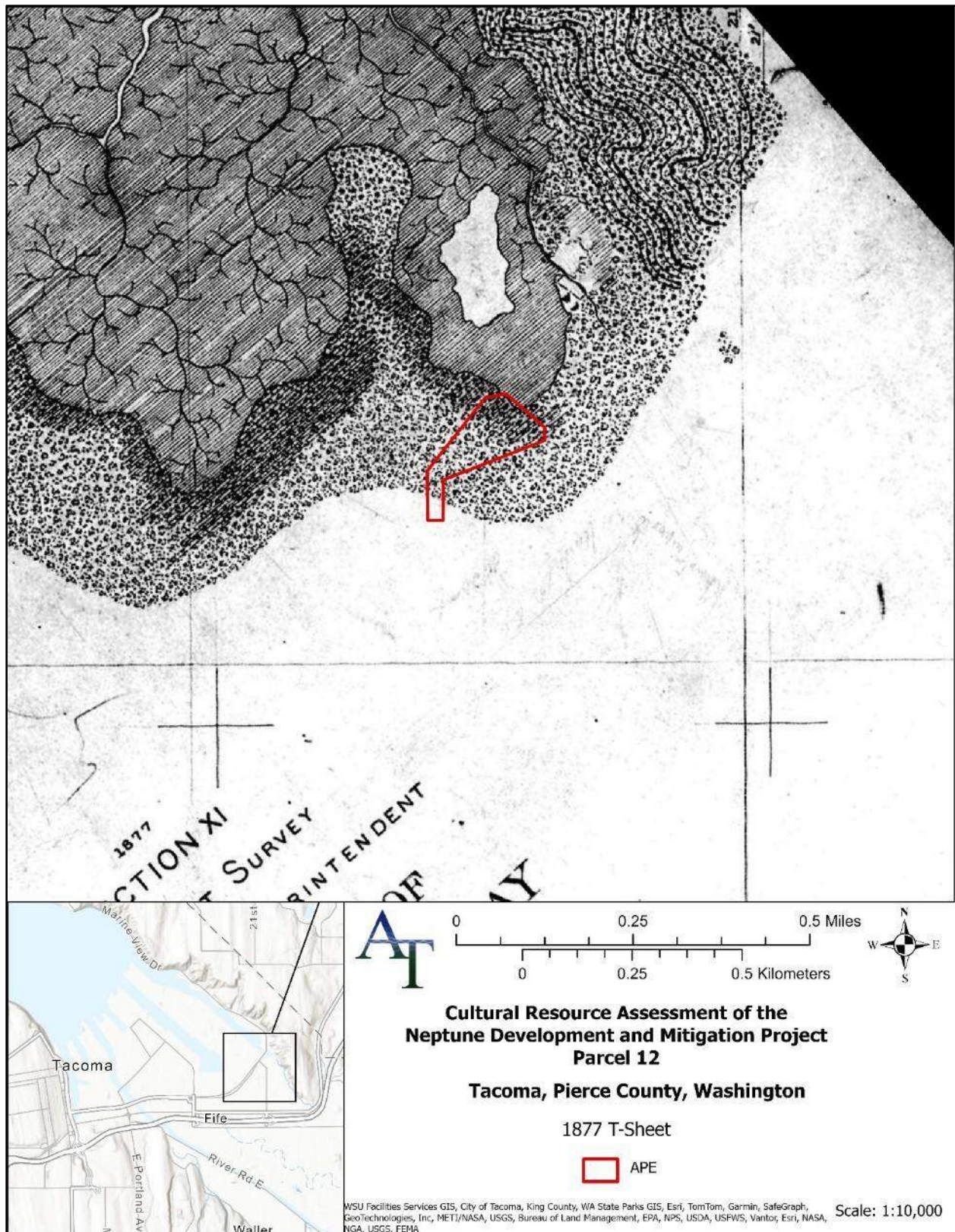


Figure 5. United States Coast and Geodetic Survey (1877) map (T-1453), annotated with the APE. The shaded area of the APE is wooded marsh and unshaded is forest.

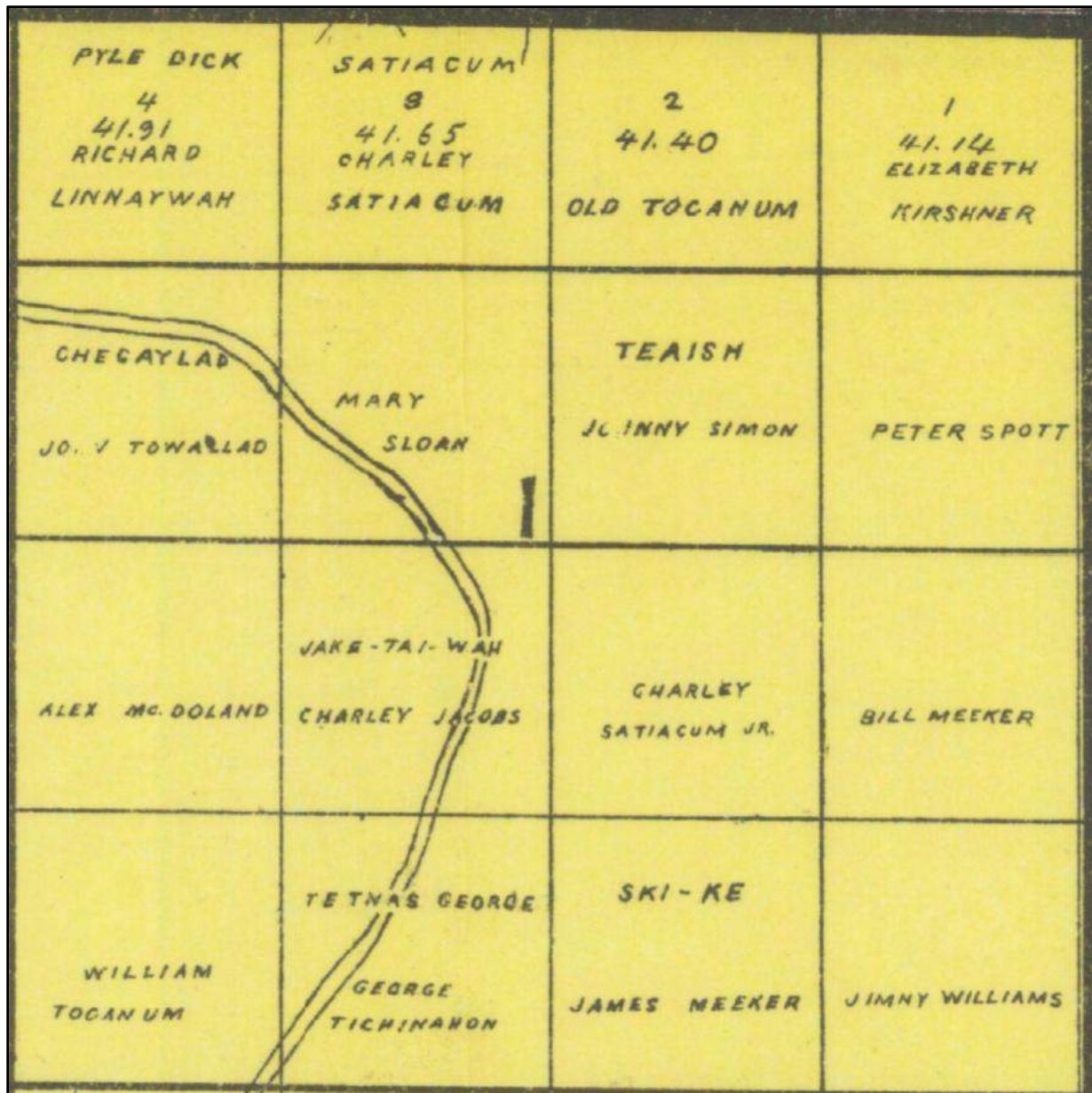


Figure 6. Portion of 1892 Map of the Puyallup Indian Reservation Washington (WSU 2025) showing Section 1 of T20N R03E. The APE is within the NENE, owned by Elizabeth Kirshner (Lot 1 at the top right).

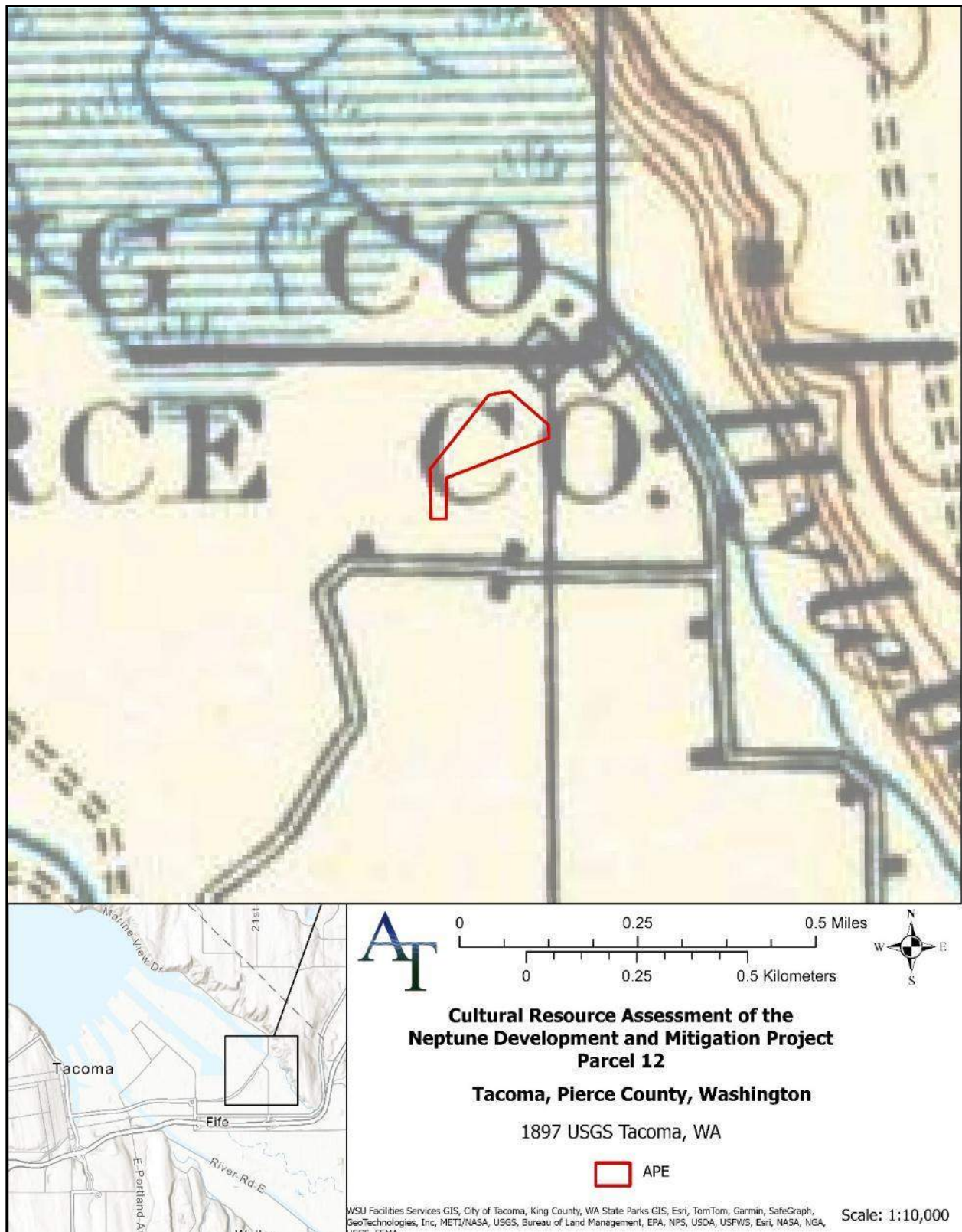


Figure 7. Portion of the USGS (1897) topographic map detailing the location of the APE.

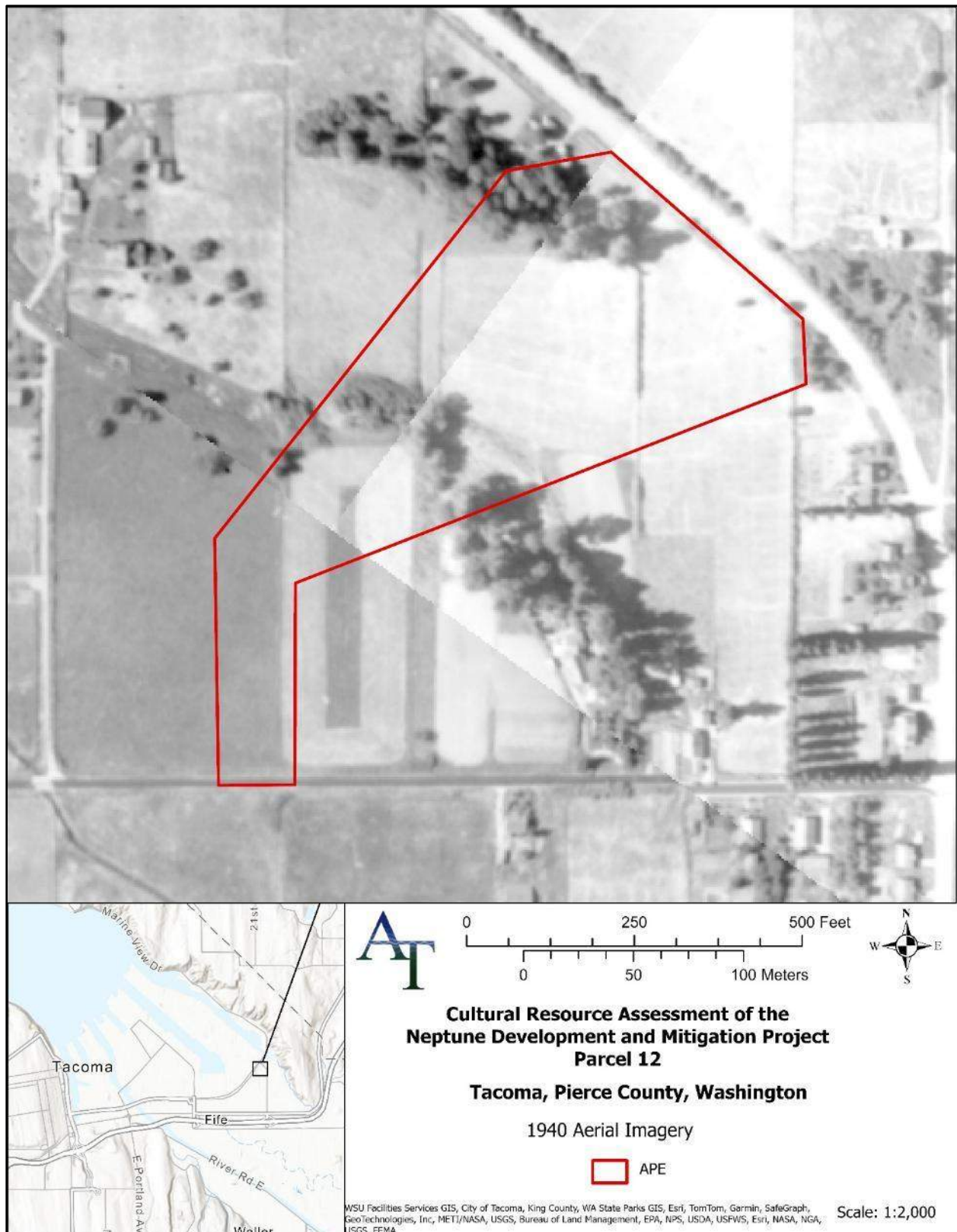


Figure 8. Puget Sound River History (PSRHP) 1940s aerial imagery detailing the location of the APE.

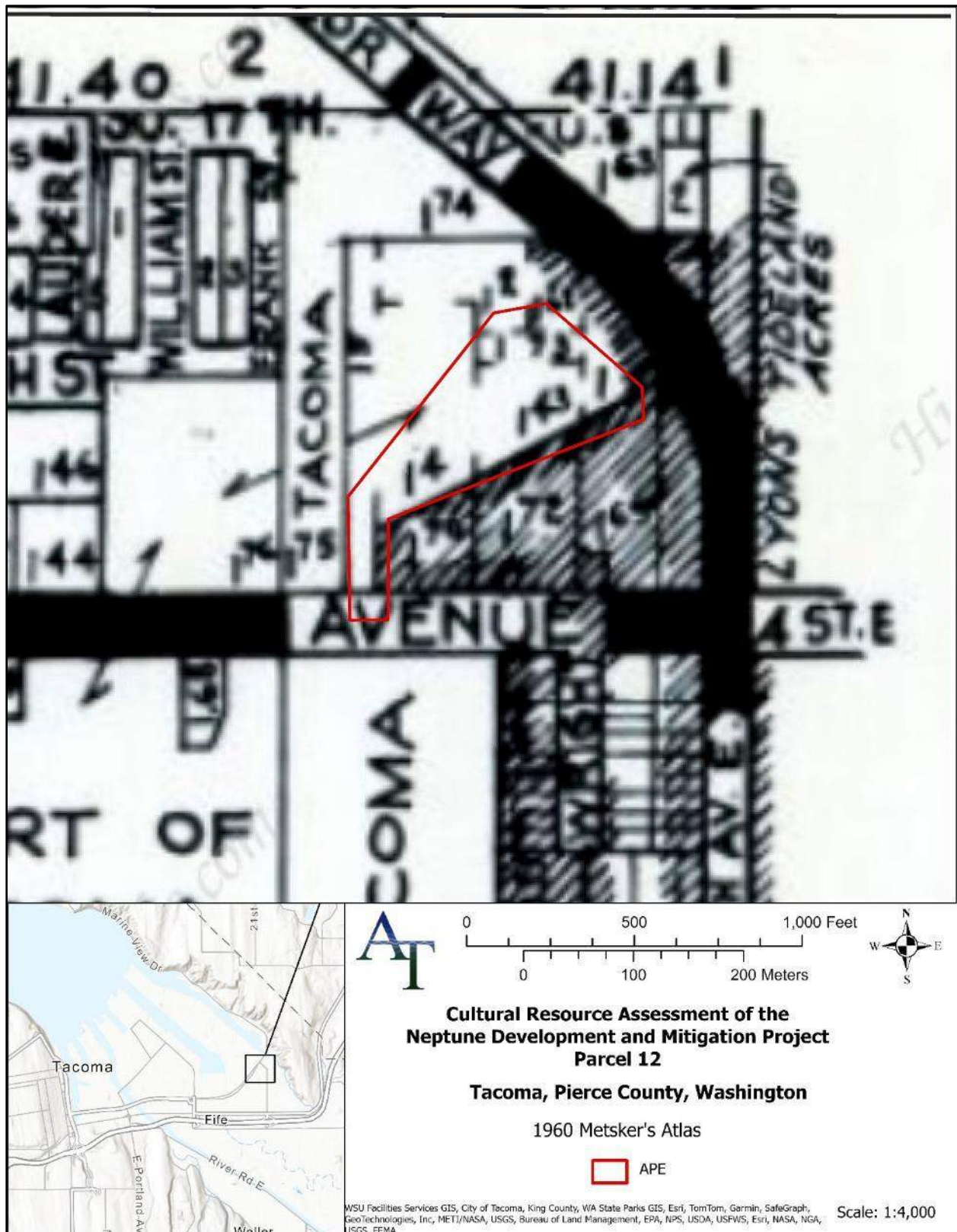


Figure 9. Metsker Map Company (1960) map annotated with the APE.

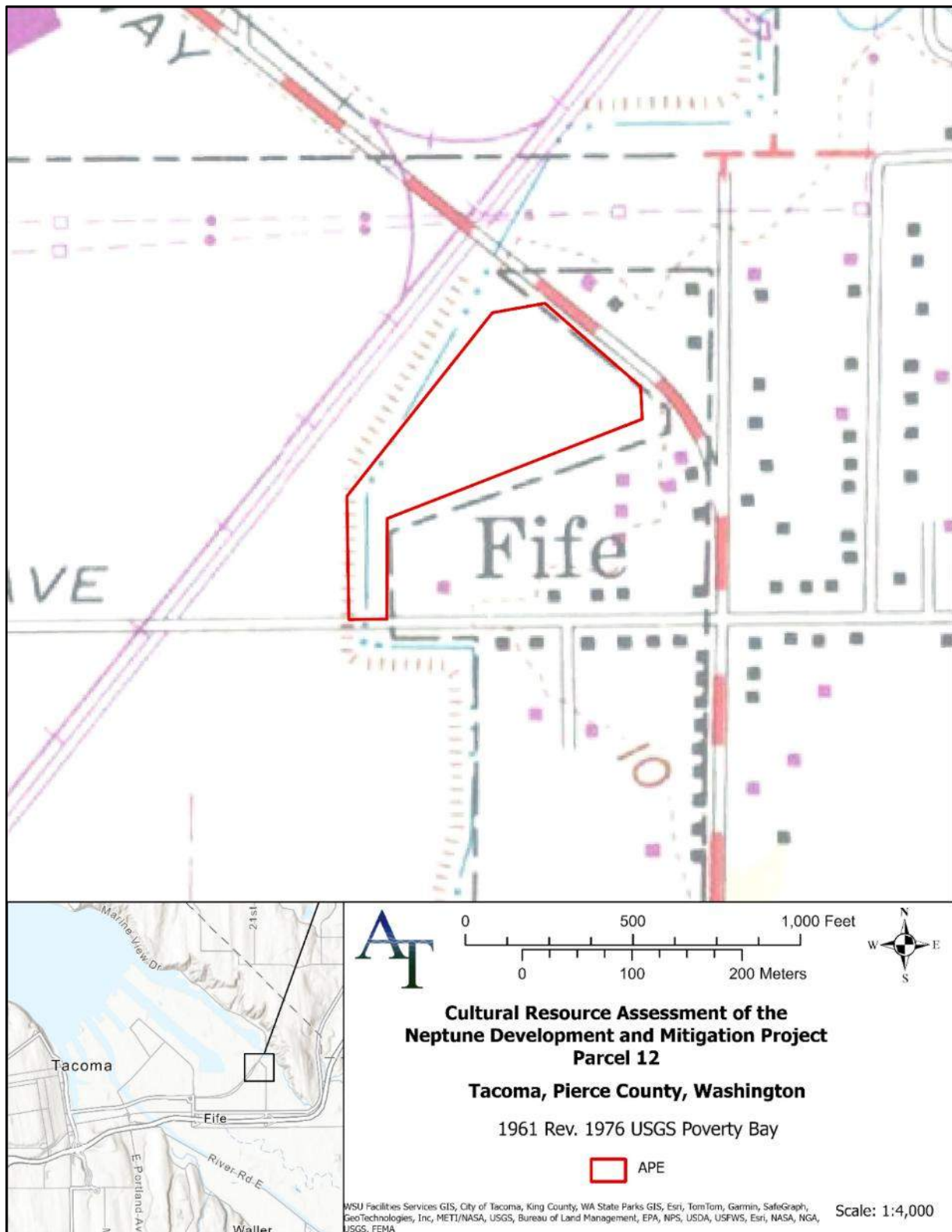


Figure 10. USGS (1961 [photo revised 1976 edition]) map annotated with the APE. Pink symbology indicates additions new to the 1976 edition.

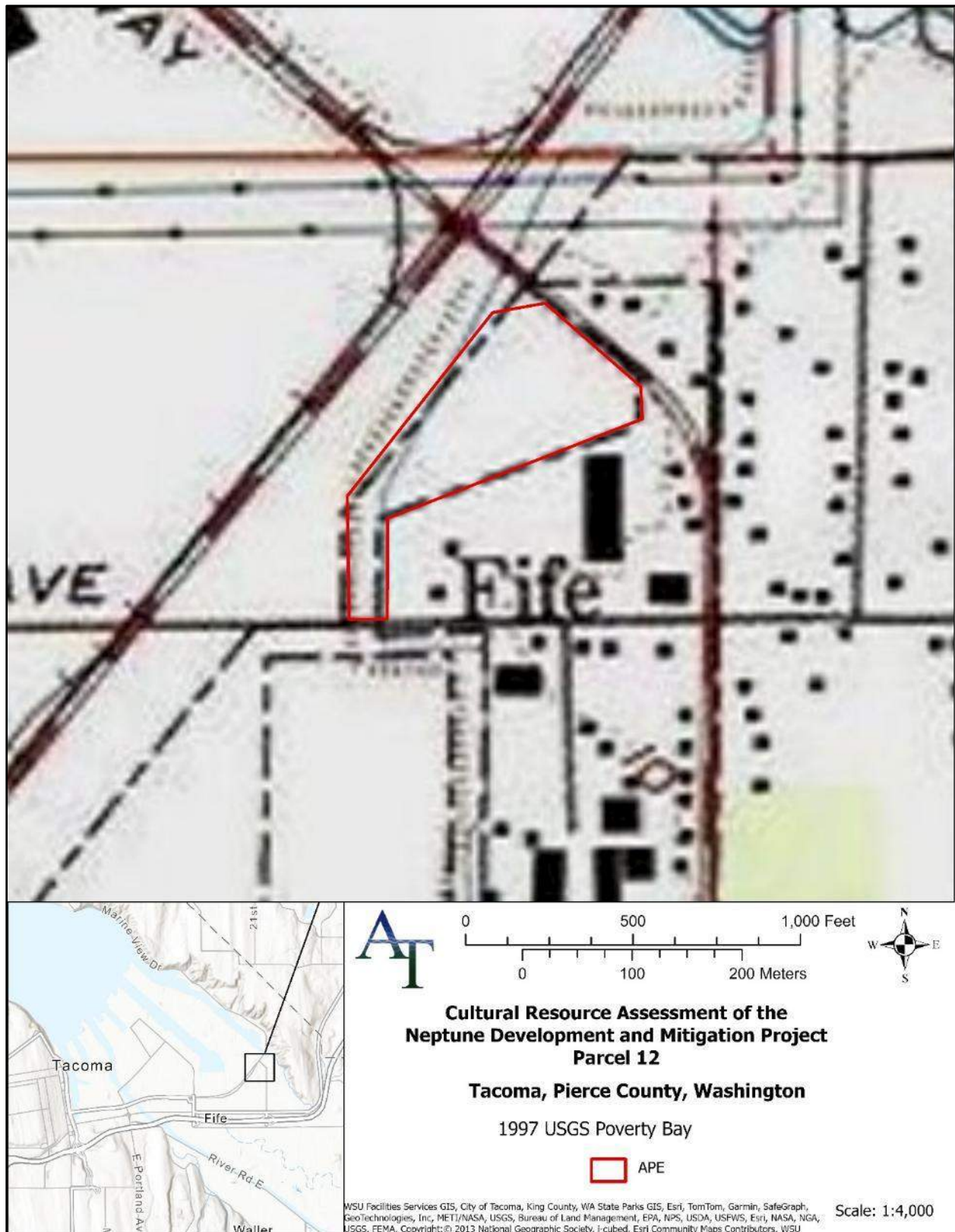


Figure 11. USGS (1997) map detailing the location of the APE.

In 1873, the Puyallup Indian Reservation was mapped by the BLM GLO (1873a, 1873b; Puget Sound River History 2023a) (Figure 4). At this time, the north bank of Puyallup River was within the APE. In 1877, a topographic sheet (T-Sheet 1453) was produced showing greater detail of the natural environment (PSRHP 2025b; Figure 5). The north area was wooded marsh and the rest was forested.

The 1892 Map of the Puyallup Indian Reservation shows the APE as owned by “Elizabeth Kirshner” (WSU 2025; Figure 6). In 1888, US Indian Agent Edwin Eells reported on the status of land patent holders within the Reservation (S. Exec. Doc. No. 274, 50th Cong., 1st Sess. [1888]). Elizabeth Kirshner was described as having “died about two years ago. The place has been continuously occupied and cultivated since patent issued. Her husband, a white man, adopted into the tribe, now lives on and cultivates it.” There was 1 box-house, and 9 acres cultivated including oats, potatoes, hay, and fruit (S. Exec. Doc. No. 274, 50th Cong., 1st Sess. [1888]).

No changes were visualized on the 1897 Tacoma, WA map in the APE proper (USGS 1897; Figure 7). However, it was adjacent to some developing roads and structures. The earliest aerial viewed, taken in 1940, demonstrates the APE was by that time cleared and cultivated. Some larger trees were visible and some roads as well. A major road was located north/northeast of the APE. Around five structures were located near the APE (PSRHP 2025c; Figure 8 Figure 10).

By 1956, a USGS topographic map illustrates that approximately 6-8 structures were adjacent to the APE. Roads marked to the west, south, and northeast (4-lane) of the APE as well. Road to the northeast of the APE is marked as four lanes. Metsker Map Company (1960) map indicates the land was owned by the Port of Tacoma (Figure 9). The area apparently lacked any structures by the end of the historic era and has remained largely unchanged, except for a border fence installation, in the modern era (USGS 1961 [rev. 1976]; Figure 10).

WISAARD

DAHP’s WISAARD database was reviewed to identify cultural resource studies, archaeological sites, registered properties, properties, cemeteries, and Traditional Cultural Places (TCPs) that have been previously recorded in, and within a 0.25-mile radius of, the APE.

Cultural Resources Studies

According to WISAARD, since 1995, the APE has not been previously surveyed for cultural resources and, within a 0.25-mile radius, nine cultural resource studies have been previously conducted (Table 4); these projects were generally conducted prior to large-scale infrastructure improvements.

The nearest previously conducted cultural resources studies were conducted immediately adjacent to the APE. In 2015, a cultural resources study was completed adjacent to the APE (Berger 2015). Berger (2015) recorded one historic-era structure, which they recommended not eligible for listing; no other resources were found. Geotechnical studies indicated fill in the area between 5 and 10 ft bgs (HC&A 1984:26 [1973-1-1], 40). In 2018, a cultural resources study was conducted along Taylor Way at the NE side of the APE (Chambers and Amell 2018). The study included

background review and visual reconnaissance; no significant cultural resources were identified (Chambers and Amell 2018).

Table 4. Cultural resource studies previously conducted in, and within a 0.25-mile radius of, the APE.

NADB	AUTHOR (DATE)	TITLE	FINDINGS	DISTANCE FROM APE
1691030	Berger (2015)	Cultural Resources Assessment for the Tacoma LNG Project, Pierce County, WA	One historic structure recorded but recommended not eligible for NRHP. No cultural resources identified.	Directly adjacent to Parcel 12 APE
1692222	Chambers and Amell (2018)	Cultural Resources Assessment for the Taylor Way Rehabilitation Project, Tacoma, Pierce County, Washington	No cultural resources identified. Recommended monitoring.	Along NE and NW sides of Parcel 12 APE
1691715	Yamamoto et al. (2015)	Cultural Resources Investigations for the Washington State Department of Transportation's SR 167 Tacoma to Puyallup New Freeway, Pierce County, Washington: Cultural Resources Investigations to Support NEPA Re-Evaluation of the Washington State Department of Transportation's SR 167 Extension Project – Puyallup to SR 509, Pierce County, Washington	No new cultural resources identified. Identified FMR near 45PI488 site boundary and resulted in shifting the boundary north. 65 historic properties recorded, six of which were recommended eligible for the NRHP.	0.02 mile
1343265	Luttrell (2004)	Discipline Report – Cultural Resource Investigations for the Washington State Department of Transportation's SR 167: Puyallup to SR 509 Project, Pierce County, Washington	Identified precontact site 45PI488 (recommended eligible) and historic sites 45PI490, 45PI661, 45PI664. Inventoried 62 historic structures, re-evaluated eight previously recorded historic structures/objects. Four historic properties are potentially eligible for NRHP.	0.09 mile
1684488	Diedrich (2012)	Archaeological Monitoring for Parcel 14, the East-West Road and Alexander Avenue, Tacoma, Pierce County, Washington	One glass bottle circa 1925-1930 and an undatable nail. No significant cultural resources were identified, and the project will have no effect on cultural resources.	0.12 mile
1352006	Gillespie et al. (2008)	Cultural Resources Assessment of 502 54 th Avenue East and 503 53 rd Avenue East, Fife, Pierce County, Washington	Inventory and evaluation of a building at 503 53 rd Ave and recommended not eligible for NRHP. Archaeological survey and inventory at 502 54 th Ave, no cultural resources identified.	0.13 mile
1352114	Goetz and Rust (2006)	Cultural Resources Report, Wildlands of Washington Hauff Property Tacoma, Washington	No cultural resources identified.	0.16 mile

NADB	AUTHOR (DATE)	TITLE	FINDINGS	DISTANCE FROM APE
1354677	Shantry et al. (2010)	Results of testing at Xaxtl'abish 1 (45PI974), Hylebos Creek, Pierce County, Washington	Testing/data recovery at 45PI974. Identified flaked stone, fire modified rock, faunal remains, and specialized vertebrate and botanical material. Found a date of 1080 to 940 calibrated years before present.	0.17 mile
1681800	Shong (2012)	Letter to Robert Brenner RE: Results of Archaeological Monitoring for the Port Parcel 88 Combined Habitat Project, Port of Tacoma, Pierce County, Washington	Identified an isolated projectile point and a small concentration of fire-modified rock and faunal remains (45PI1188 and 45PI1203). Some modern/late historic materials observed as well.	0.23 mile

Archaeological Sites

No archaeological sites have been previously recorded in the APE, and four have been previously recorded within a 0.25-mile radius (Table 5). The closest is 45PI974, a shell midden, recorded approximately 0.18 miles from the APE.

The midden was identified at a depth of 2.1 -2.8 m (2.3-3 yd.) below the ground surface and below the water table. The midden consisted of highly fragmented shell, including mussel and barnacle, and also consisted of fire-modified rock, bone point, and faunal remains. Shantry (2009:2) described the midden as:

... varies between 4 cm thick at the north end and 78 cm thick at the south end and is buried by fill, alluvium and wetland soil. The graded surface was cut 0.92 cm below the modern surface to create a basin for the wetland restoration project. The midden was identified 1.22 meters below the graded surface, or 2.12 meters below the modern surface. The midden is composed of black, organic-rich, silty fine sand with many shell fragments and common woody debris (twigs and branchwood). There is no visible bedding within the midden, with the exception of a transition to organic-rich fine sandy silt with few shell fragments below 2.52 meters below the surface (Shantry 2009:2).

Also located 0.18 miles from the APE is site 45PI654. It is a mid-twentieth-century domestic deposit that may contain remnants of earlier deposits. A total of 124 artifacts were identified, including ceramics, metal, faunal and floral remains, glass beads, one Bakelite or plastic toothbrush handle, one red brick fragment, one fragment of leather, one plastic comb tooth, and nine pieces of cinder (Carlson 2024). Due to proximity, no previously recorded archaeological site will be impacted by this project.

Table 5. Archaeological sites previously recorded within a 0.25-mile radius of the APE.

SMITHSONIAN	AUTHOR (DATE)	DESCRIPTION	NRHP ELIGIBILITY (DATE)	DISTANCE FROM APE
45PI974	Shantry (2009)	Precontact shell midden including highly fragmented shell, a bone point, mammal and avian bones, and fire-modified rock.	Eligibility Not Determined	0.18 mile
45PI1654	Carlson (2024)	Mid-20 th century domestic deposit and possible earlier deposits. Artifact types included ceramics, glass, metal, faunal and floral remains, glass trade beads, and other artifacts.	Potentially Eligible	0.18 mile
45PI1203	Shong (2010)	Precontact camp including fire-modified rocks, bone fragments, and shell fragments.	Eligibility Not Determined	0.24 mile
45PI1188	Shong (2010)	Small basal-notched red jasper projectile point from the late precontact period.	Eligibility Not Determined	0.25 mile

Registered Properties

No registered properties (i.e., properties that have been listed on the Washington Heritage Register [WHR], the Washington Heritage Barn Register [WHBR], or the NRHP) have been recorded within a 0.25-mile radius of the APE. The nearest register property is the City Waterway Bridge, located more than 3 miles west of the APE.

Properties

No properties (i.e., historic buildings and/or structures aged at least 50 years old) have been previously recorded within the APE, and 20 have been previously recorded within a 0.25-mile radius (Table 6). Due to proximity, no previously recorded property will be impacted by this project.

Table 6. Properties previously recorded in, and within a 0.25-mile radius of, the APE.

PROPERTY ID	COMMON NAME	ADDRESS	NRHP ELIGIBILITY	DISTANCE FROM APE
672769	Tacoma-Covington No. 3 230 kV transmission line	28401 Covington Way SE, Kent, WA	Determined Eligible (2014)	0.05 mile
672770	Tacoma-Covington No. 4 230 kV transmission line	28401 Covington Way SE, Kent, WA	Determined Eligible (2014)	0.05 mile
672768	Tacoma-Covington No. 2 230 kV transmission line	28401 Covington Way SE, Kent, WA	Determined Eligible (2014)	0.08 mile
672766	Tacoma-Raver 1&2 No. 1 500 kV transmission line	30725 SE Retreat Kanasket Rd, Ravensdale, WA	Determined Eligible (2014)	0.08 mile
680313	Residence	5302 4th St E, Fife, WA 98418-1502	Determined Not Eligible (2016)	0.12 mile
680315	Residence	5312 4th St E, Fife, Washington, 98424	Determined Not Eligible (2016)	0.12 mile

PROPERTY ID	COMMON NAME	ADDRESS	NRHP ELIGIBILITY	DISTANCE FROM APE
31447	Tideflats Substation	3702 Taylor Way, Tacoma, WA	Eligibility Not Determined	0.12 mile
88816	N/A	503 53rd Ave E, Fife, WA	Determined Not Eligible (no date)	0.14 mile
680320	Residence	5416 4th St E, Fife, Washington, 98424	Determined Not Eligible (2016)	0.15 mile
680336	Residence	415 54th Ave E, Fife, Washington, 98424	Determined Not Eligible (2016)	0.16 mile
104173	N/A	125 55TH AVE, FIFE, WA	Eligibility Not Determined	0.16 mile
734545	Residence	5420 4th St E, Fife, Washington, 98424	Eligibility Not Determined	0.16 mile
680339	Residence	501 54th Ave E, Fife, Washington, 98424	Determined Not Eligible (2016)	0.18 mile
31884	N/A	5505 4th St E, vicinity of Fife, WA	Eligibility Not Determined	0.18 mile
680343	Residence	602 54th Ave E, Fife, Washington, 98424	Determined Not Eligible (2016)	0.19 mile
680341	Residence	520 54th Ave E, Fife, Washington, 98424	Determined Not Eligible (2016)	0.2 mile
104175	N/A	5505 4TH ST, FIFE, WA	Eligibility Not Determined	0.2 mile
680344	Residence	606 54th Ave E, Fife, Washington, 98424	Determined Not Eligible (2016)	0.22 mile
31920	N/A	515 54th Ave E, Fife, WA	Eligibility Not Determined	0.22 mile
90178	N/A	3 57th Ave E, Tacoma, WA 98424	Determined Not Eligible (2008)	0.23 mile

Cemeteries

No cemeteries (or burials or funerary items) have been previously recorded in, or within a 0.25-mile radius of, the APE. No cemeteries (or burials/funerary items) have been recorded within a 0.25-mile radius of the APE. The nearest previously recorded cemeteries are 45KI866 (Gethsemane Cemetery) and 45KI876 (St. George's Cemetery), located 1.25 miles to the northeast. They are historic, dating to the late 1800s, and associated with Tribal burials. Due to proximity, no previously recorded cemetery will be impacted by this project.

TCPs

No TCPs have been previously recorded in, or within a 0.25-mile radius of, the APE.

Predictive Model

WISAARD's predictive model was developed to help determine the probability for an archaeological site to be present based on environmental factors (i.e., elevation, slope, distance to water, aspect, soils, geology, and landforms), archaeological data, and spatial proximity (GeoEngineers 2009:3-4). The model only determines probability for precontact archaeological

resources, not historic resources (DAHP, personal communication, 2025; GeoEngineers 2009:8). The model ranges from low risk, moderately low risk, moderate risk, high risk, and very high risk (GeoEngineers 2009). According to WISAARD, the APE is located in a very high-probability area for precontact archaeological sites.

OBJECTIVES AND EXPECTATIONS

The objective of this cultural resource assessment was to identify any in situ cultural resources within the APE and, if present, to determine whether they are significant and whether the proposed project would affect them.

Based on ATCRC's background review of environmental and cultural contexts, previously recorded cultural resource studies and sites, and review of the WISAARD state-wide site probability model, the APE is in an area of very high-risk potential for the presence of archaeological resources. There is a shell midden site found in a similar context 0.18 miles away (45PI974).

Although the APE contains some native vegetation due to modern habitat mitigation efforts, it has been modified from its precontact setting by urban development associated with historic dredging and fill in the area. The soil in the APE is classified as urban land and is currently covered with a small amount of vegetation. Previous studies in the vicinity of the APE indicate fill in the area between 1.5-3 m (5 and 10 ft.) bgs (HC&A 1974:26 [1974-1-1], 40).

From an archaeological perspective, precontact and ethnographic site types that could be encountered within the APE include seasonally occupied base camps, short-term field camps, and seasonally utilized resource-procurement and processing loci. Resource procurement and processing loci encompass a wide range of activities that vary with the resource types present and the environmental settings. Activities occurring at such sites were generalized or focused on specific resources such as salmonid procurement, riverine resource procurement and use from the nearby Hylebos Creek, Puyallup River, and Commencement Bay (such as shell middens and fishing structures), game hunting sites, plant gathering areas, felling trees for planks, canoe building, bark removal, and localities where flaked and groundstone material sources exist. In addition, other site types or features may have been present in the precontact and early contact-period cultural landscapes associated with the occupation of upland settings near the APE. These include trails linking villages or accessing resource procurement loci, rock art, culturally modified trees, and burials, among others; however, it is unlikely that the latter set of site types is extant due to historic disturbance and utilization of the project area, which have led to poor surface preservation.

Archaeological sites dating to the historic period result from early/modern Euro-American and native settlement activities, including original homesteading and early urban development infrastructure. In addition, resource exploitation activities that were common to market-driven economies of the mid-to-late 19th century included everyday commercial activities that revolved around things like widespread timber harvesting and delivery to sawmills for processing, early industrial factories and import/export areas, along with harvesting and processing of marine resources in Commencement Bay, as well as riverine resources from the nearby Puyallup River.

Sites of this period include farmsteads clustered around highly productive areas in river valleys, sawmills located along larger watercourses near towns and the ports to facilitate the transport of timber to the mills, large-scale historic period factories and industrial development, large urban residential sites, and road systems linking developing areas to developed areas and areas where resources were being exploited.

FIELD INVESTIGATIONS

Field Methods

Field investigations for this project were completed by Brenna Tennant (ATCRC Cultural Resource Specialist), Colin Higashi (ATCRC Cultural Resource Specialist), Lindsey Holdener (ATCRC Project Archaeologist), Carson Golden (ATCRC Project Archaeologist), and overseen by Sarah Amell (ATCRC Principal Investigator), discontinuously between September 5 and November 3, 2025, during various field conditions.

Investigations included backhoe trenches, push probe core sampling, and monitoring sonicore bore samples. Details for each trench and probe are provided in Appendix C, sonicore bore in Appendix D, and photos of each trench wall profile in Appendix E.

Trenches were excavated with a backhoe. Trenches were sized 1.5 m (5 ft.) wide by 4.5 m (15 ft.) long. Due to the presence of municipal trash/debris from the former homeless encampment, the top (12 in.) of all trenches was removed but not inspected (the side walls of the trenches were examined, but not the back pile, which the Port will later dispose of). Thereafter, it was anticipated that fill would be present; it was to be removed, set aside in its own pile, and ¼ of a bucket was to be screened to confirm fill. Once native soil was reached, excavation was conducted systematically. First, excavation occurred in approximately 10 cm (4 in.) lifts until native bedding sediments were encountered. Lifts decreased to 5 cm (2 in.), and later were again expanded to 10 cm (4 in.), and later to 15.2-20.3 cm (6-8 in.). A maximum depth of 3.66 m (12 ft.) was excavated. Staff inspected each sediment sample as it was excavated. One bucket from each lift was screened through 0.25-inch hardware mesh, with particular attention to potential anthropogenic sediments (e.g., charcoal-stained). In addition, personnel from Maul-Foster & Algoni were present on some days to collect environmental samples from selected trenches and later to push probes (see MFA Env.). Trench and geo push probes on Figure 16). The sidewalls of the backhoe trenches were inspected and, when possible, scraped with a trowel or shovel to reveal soil horizons, organic staining, and other relevant information. A trench profile was recorded, when possible, for at least one trench wall. Photographs and notes on soil description(s), disturbance, cultural resources (if present), etc., were recorded for each trench. All backhoe trenches were backfilled, minus MFA environmental samples and the surface layer (12in.) disturbed by municipal trash/debris, upon completion.

Push-probe core samples were collected at each location using three 1.5 m (5 ft) long continuous cores. Push probe samples experienced 30-50% compaction and are not as accurate for stratigraphic depths. A small portion of each scoop was taken and laid out on a tarp to systematically create a visual layer-transition profile, which was documented and photographed (Figure 17).

Seven sonicore bore samples were planned. Each core was examined for geomorphological characterization to determine the presence of cultural materials and/or deposits. They would be recorded, photographed, and analyzed for cultural materials. Sediments that did not require screening would be returned to their packages in the stratigraphic sequence. Photographs, provenience, and notes on soil description(s), disturbance, cultural resources (if present), etc., would be recorded.

Field Results

The APE is characterized as forested to cleared and is overall disturbed, bordered by roads and industrial areas (Figure 12 - Figure 15). Vegetation surrounding the APE consisted of a mix of native (i.e. osoberry, sword fern, maple, alder) and invasive plants (i.e. English Ivy). Many trees are dead in the area. A chain link fence with barbed wire surrounds the APE. Ground surface visibility was considered fair to poor at the time of the survey. The APE is relatively flat. In general, the area of sonicore bore testing was clearer and had a greater elevation, approximately 1.2 m (4 ft.) above the rest of the project area.

At total of 43 backhoe trenches, 35 push probes, and seven sonicore bore samples were excavated across the APE (Figure 16). The observed stratigraphy at Port Parcel 12 was relatively consistent, consisting of an upper, heavily disturbed layer of occasionally trashy, silty fill materials from the surface to a depth of 1.2 m (4 ft.), a lower layer of very fine sand fill (distinguishable from native deposits by slight differences in coloration and the absence of mineralogical signatures found in the local river deposits, particularly hematite grains), and followed by native materials (Figure 20-Figure 28). Some locations showed evidence of deeper disturbance which had mixed clumps of deeper materials into the lower A horizon or fill layers.

There was a notable stream channel crossing through the middle of the property (see Figure 20), which deposited clean andesitic fine sands and gravels to the maximum depth of testing (designated as Andesitic channel sands). It was found in Trench/Push Probe 14, 18, 13, 9, 17, 12, 23, 16, 30, 22, 37, and 29, and at depth in #21. One patch of slag fill was found overlying channel deposits in Trench 14 from 35 - 79 cm (14 - 31 in.) bgs and Bore 18 from 13 - 25 cm (5 - 10 in.). Further testing revealed that the patch was relatively small and did not extend to the property border or any of the other adjacent test locations. A clearly developed A horizon extends across the entire property, reaching 0.30 m (1 ft.) bgs in most test locations (designated A horizon). Below that, there is a layer of pale silty sands across the entire property that extends to a depth of 0.9 m (3 ft.) bgs in almost every trench (designated Pale silty sands). There was some structure to this and may represent the maximum depth of disturbance and soil development since the mid-20th century, given that it is present everywhere.

In the eastern portion of the APE, on the fill plateau, the pale silty sands are underlain by seemingly uniform and featureless yellowed sands (designated Agricultural fill sands). Evidence of intact bedding structures was not visible in the sidewalls, trench floors, or probe cores until reaching depths of 1.8 - 2.4 m (6 - 8 ft.) bgs in those holes (generally shallower towards the northern and eastern margins and deepest around Trench 42 or so, which seems consistent with a mostly-level contact given the general topography on the property). This is classified as fill materials placed on

the property to raise it above the surrounding floodplain for agricultural use (likely from the 1930s, based on aerial imagery).

Outside of that fill plateau and channel, there was instead a layer of still-light and iron-stained very fine sands that did have evidence of intact bedding structure and natural deposition (designated natural very fine sands) that transitioned cleanly into: unstained (due to groundwater action) alternating beds of very fine sand to silty very fine sand which were present in every hole not in, or immediately adjacent to, the stream channel, which represent the typical native floodplain sediments prior to significant historic disturbance of river and floodplain activity and without modern disturbance in many trenches and bores, mostly in the eastern portion of the parcel near the modern wetlands, there was a layer of silty or clayey material from a short period of limited wetland development along the eastern edge of the property (designated Intermediate silty layer).

Many trenches and bores in both the eastern and western portions of the property had one or more much thicker and more significant layers of wetland clays (or at least finer-grained materials) below depths of 3 - 3.3 m (10 -11 ft.) bgs, which sometimes contained small amounts of peat and woody debris. However, no large peat layer matching that found at the nearby archaeological site was ever identified in any of the test locations.



Figure 12. Overview of Trench 42, view to the west.



Figure 13. Overview of trench excavation, view to the west.



Figure 14. Example of trench excavation, view to the northeast.



Figure 15. Overview of soniCore bore testing location, view to the north.

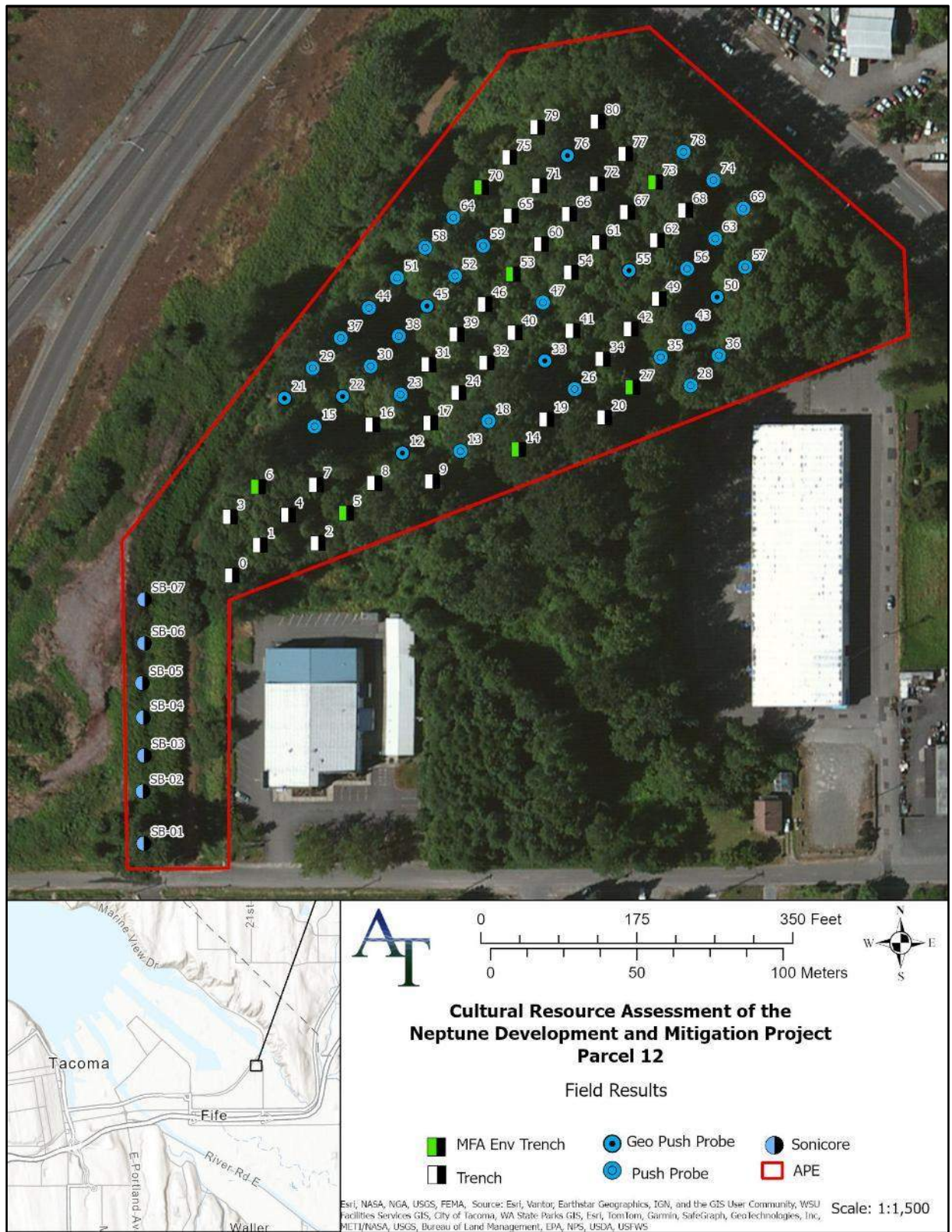


Figure 16. Field results map. Geo Push Probe and MFA Env Trench indicate areas that had concurrent environmental samples.



Figure 17. Example of soil inspection from completed Trench 31.



Figure 18. Profile photo of Trench 1.



Figure 19. Example of Push Probe 13.

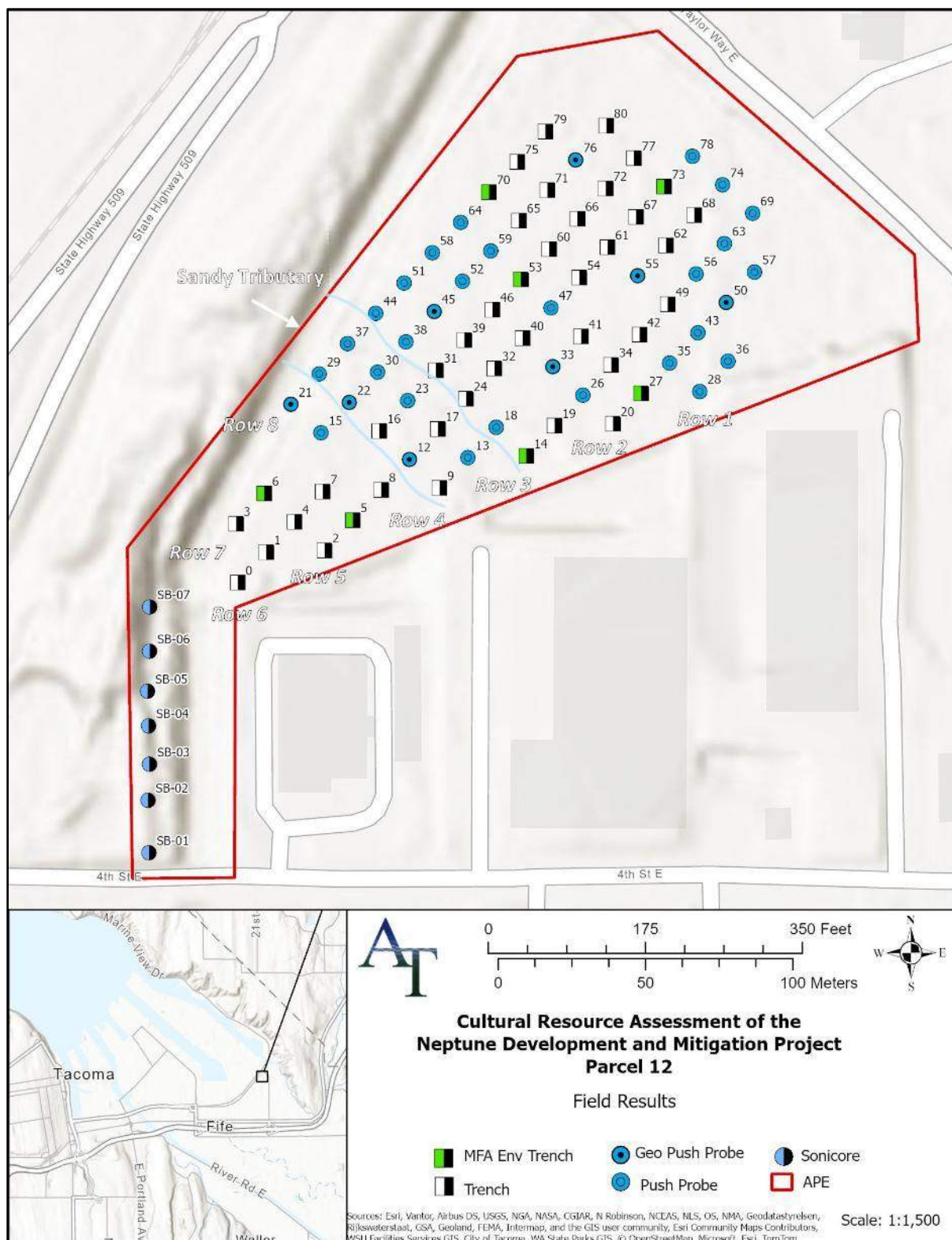


Figure 20. Field results on a labeled terrain basemap. Rows correspond to profiles below.

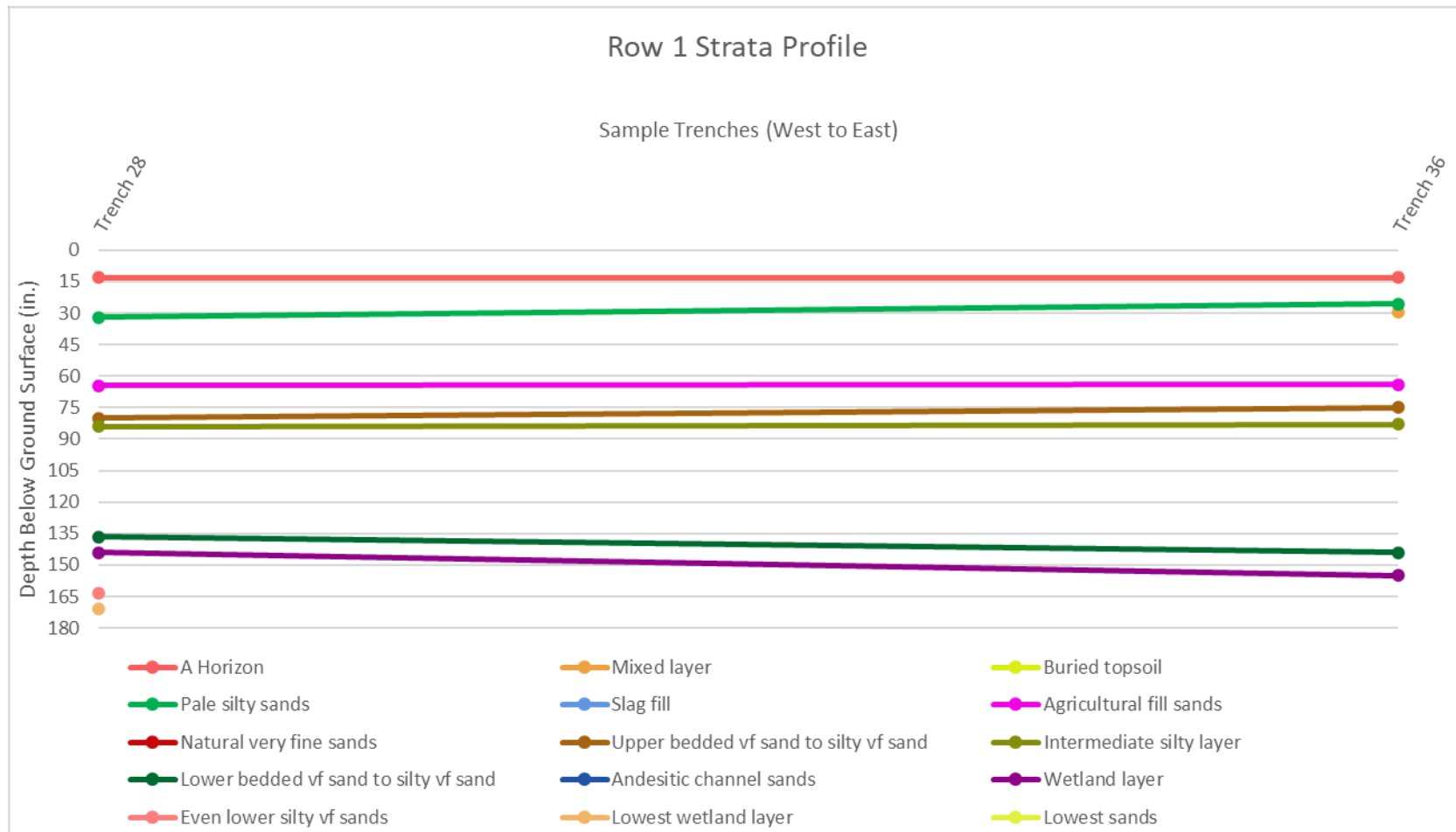


Figure 21. Row 1 stratigraphy profile.

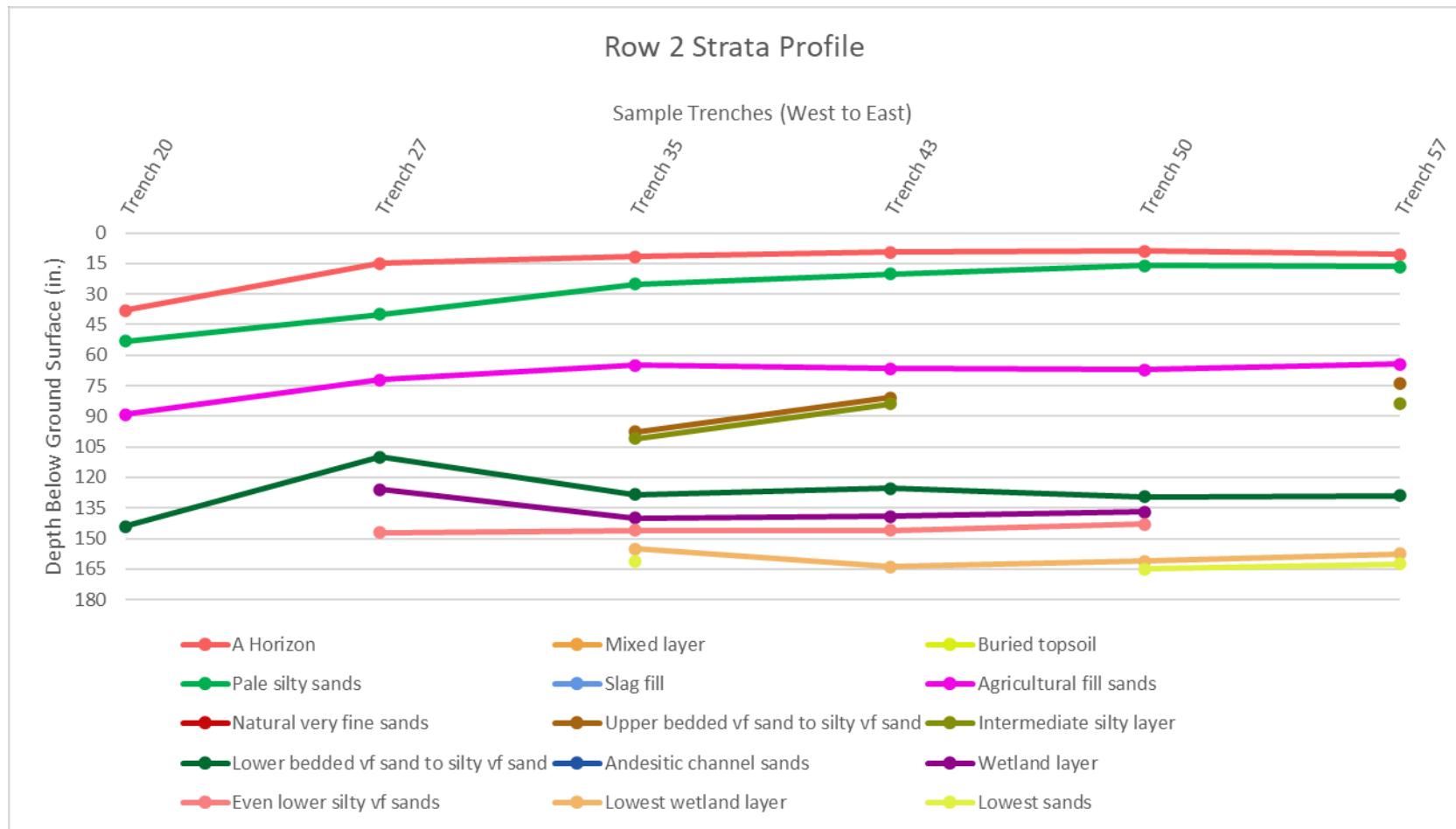


Figure 22. Row 2 stratigraphy profile.

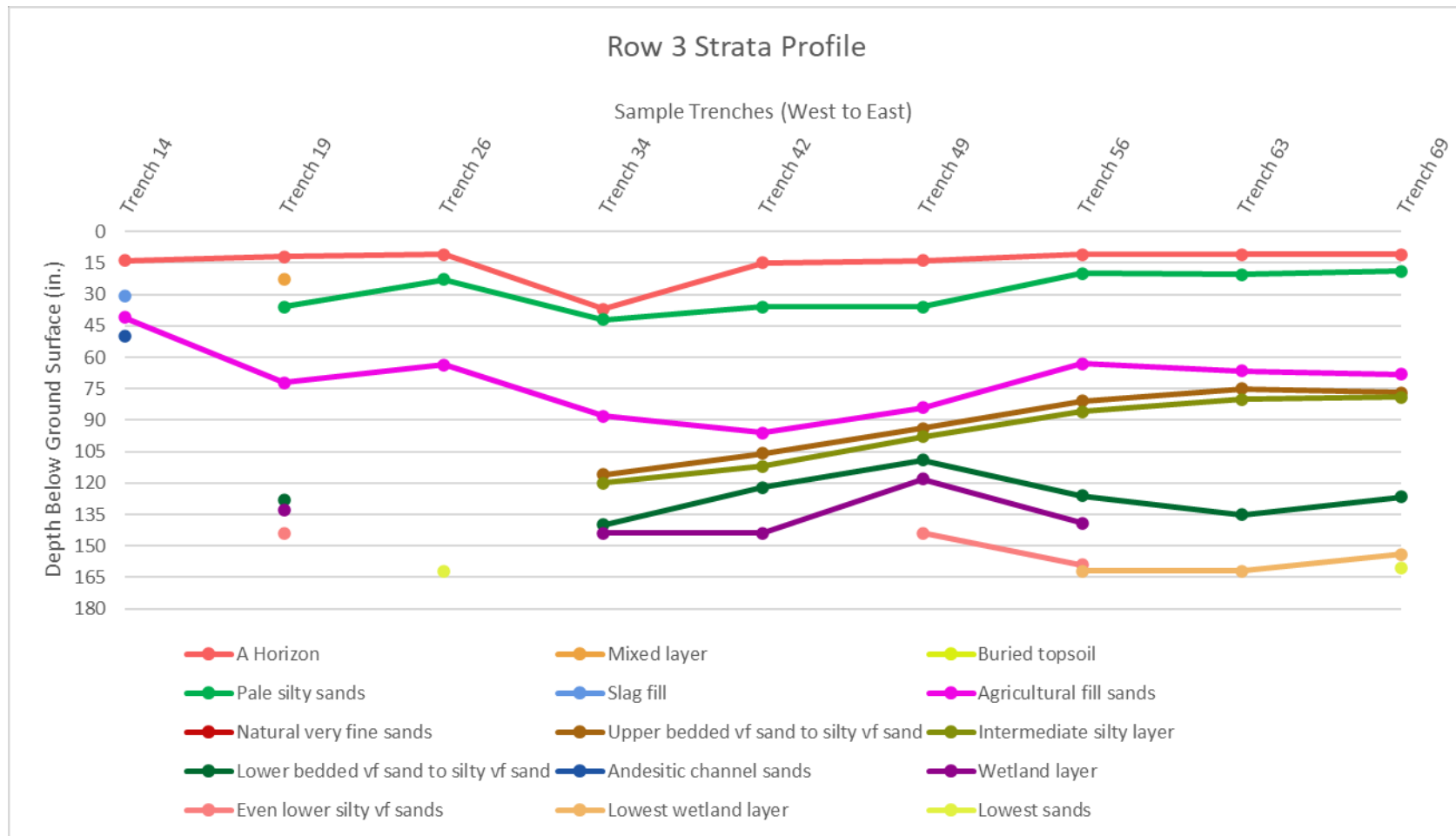


Figure 23. Row 3 stratigraphy profile.

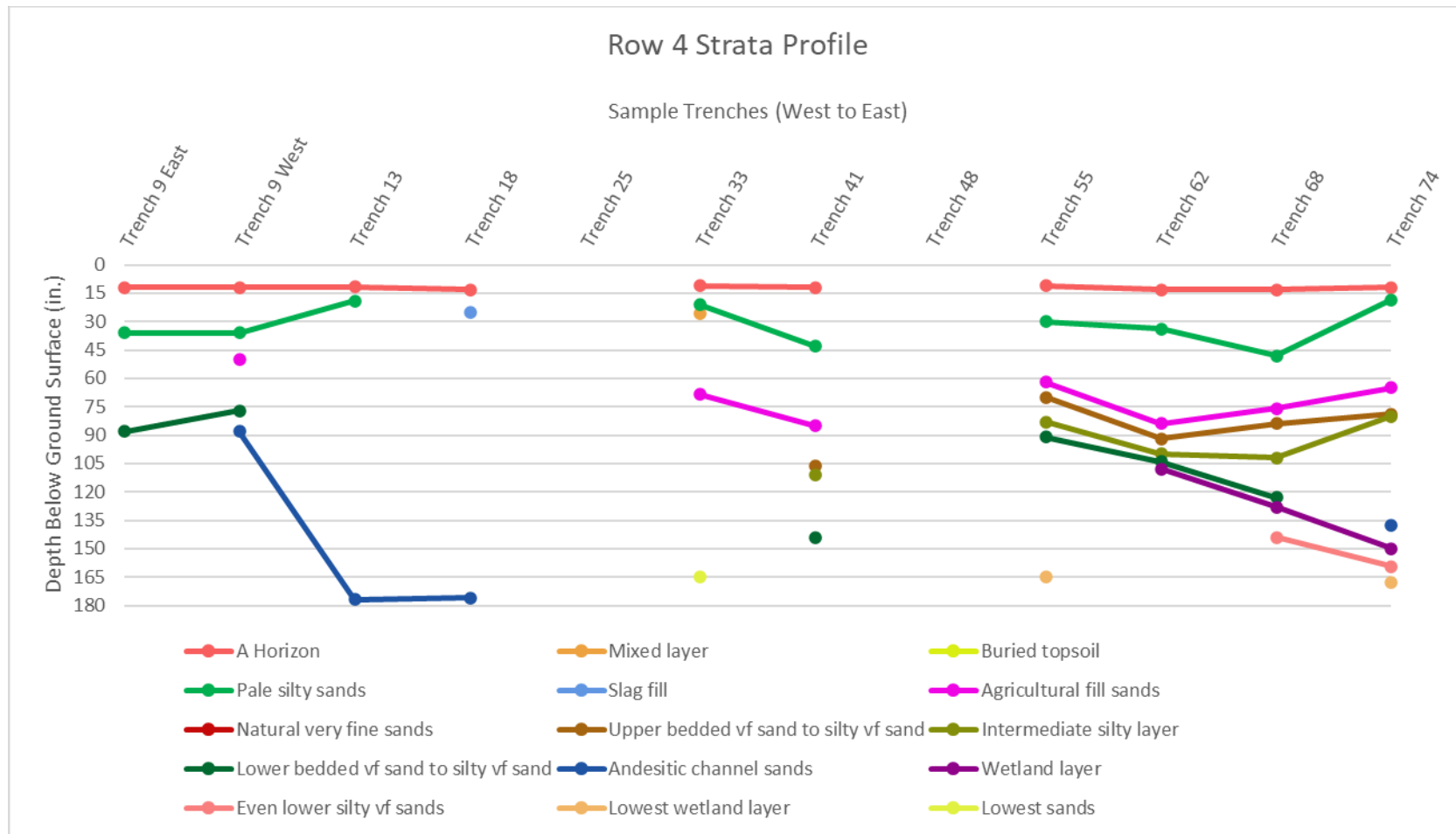


Figure 24. Row 4 stratigraphy profile.

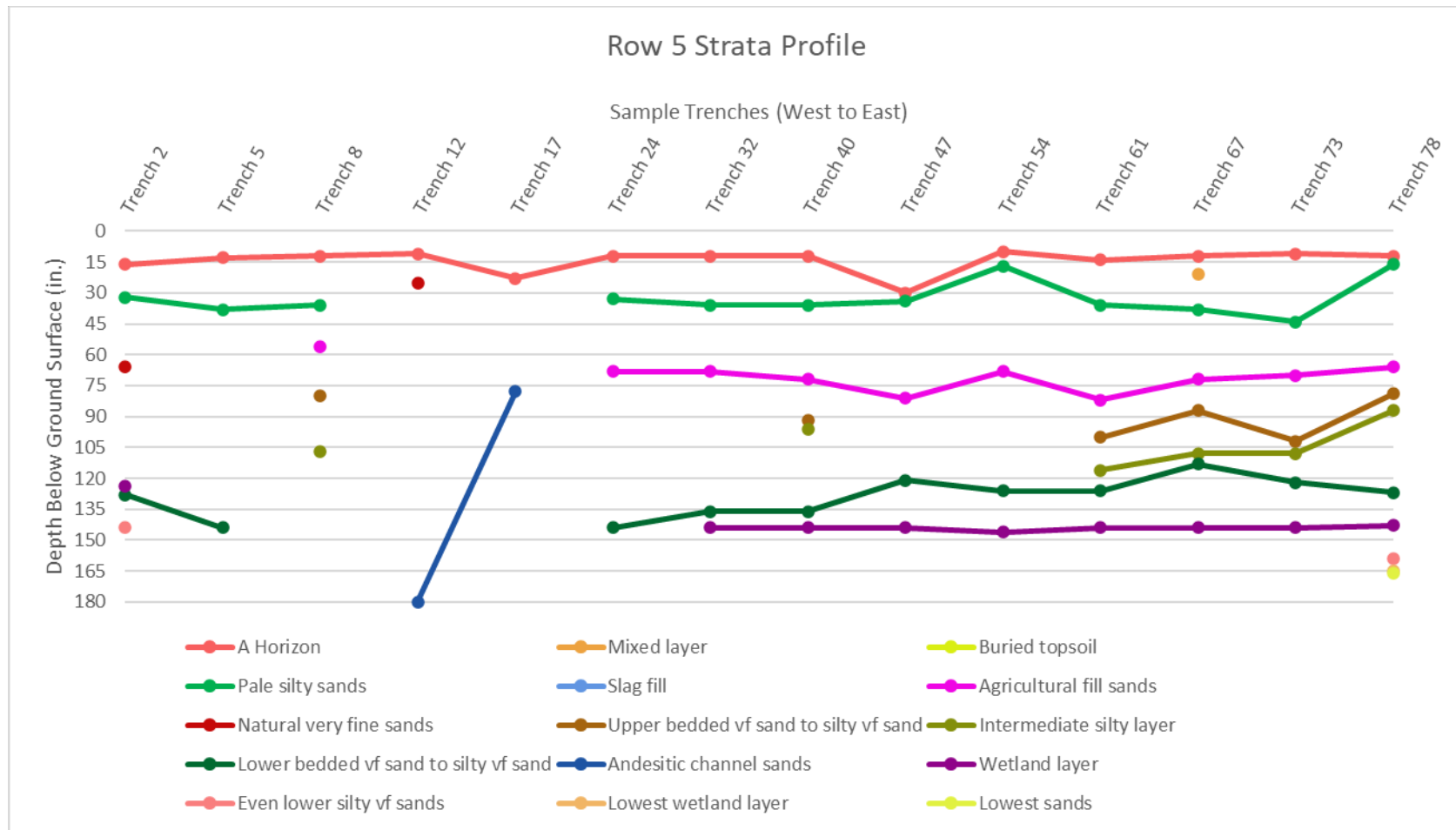


Figure 25. Row 5 stratigraphy profile.

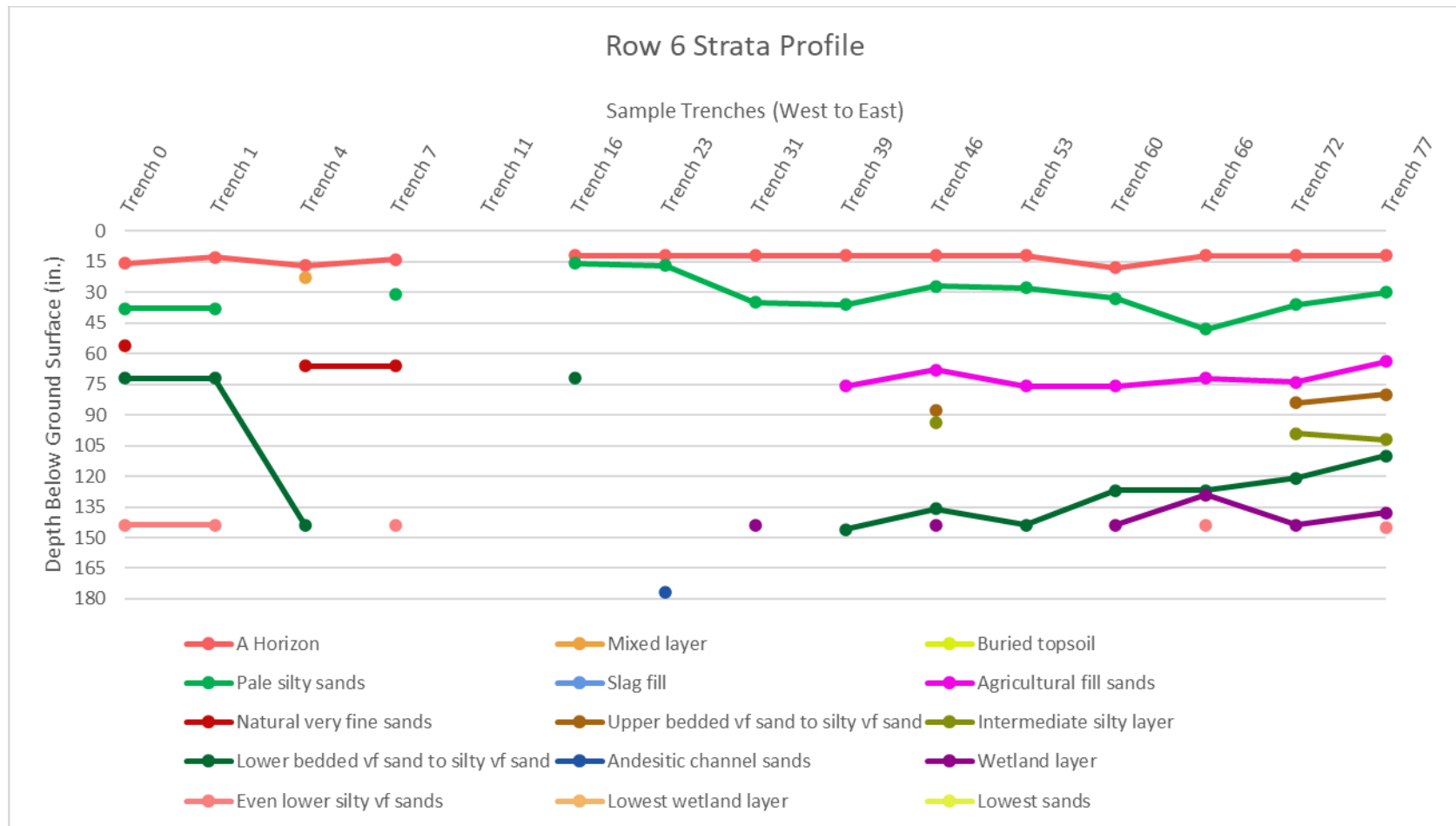


Figure 26. Row 6 stratigraphy profile.

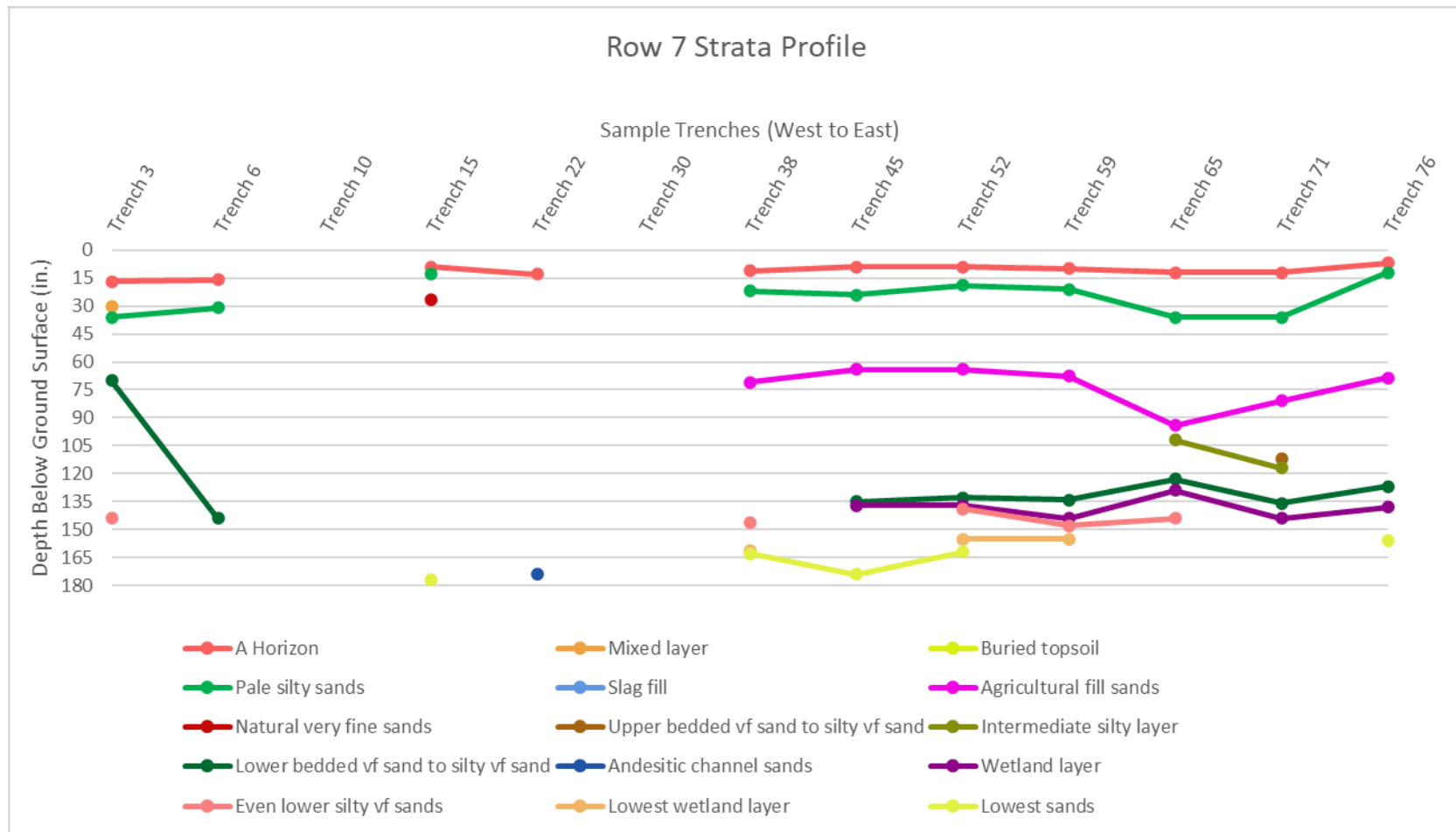


Figure 27. Row 7 stratigraphy profile.

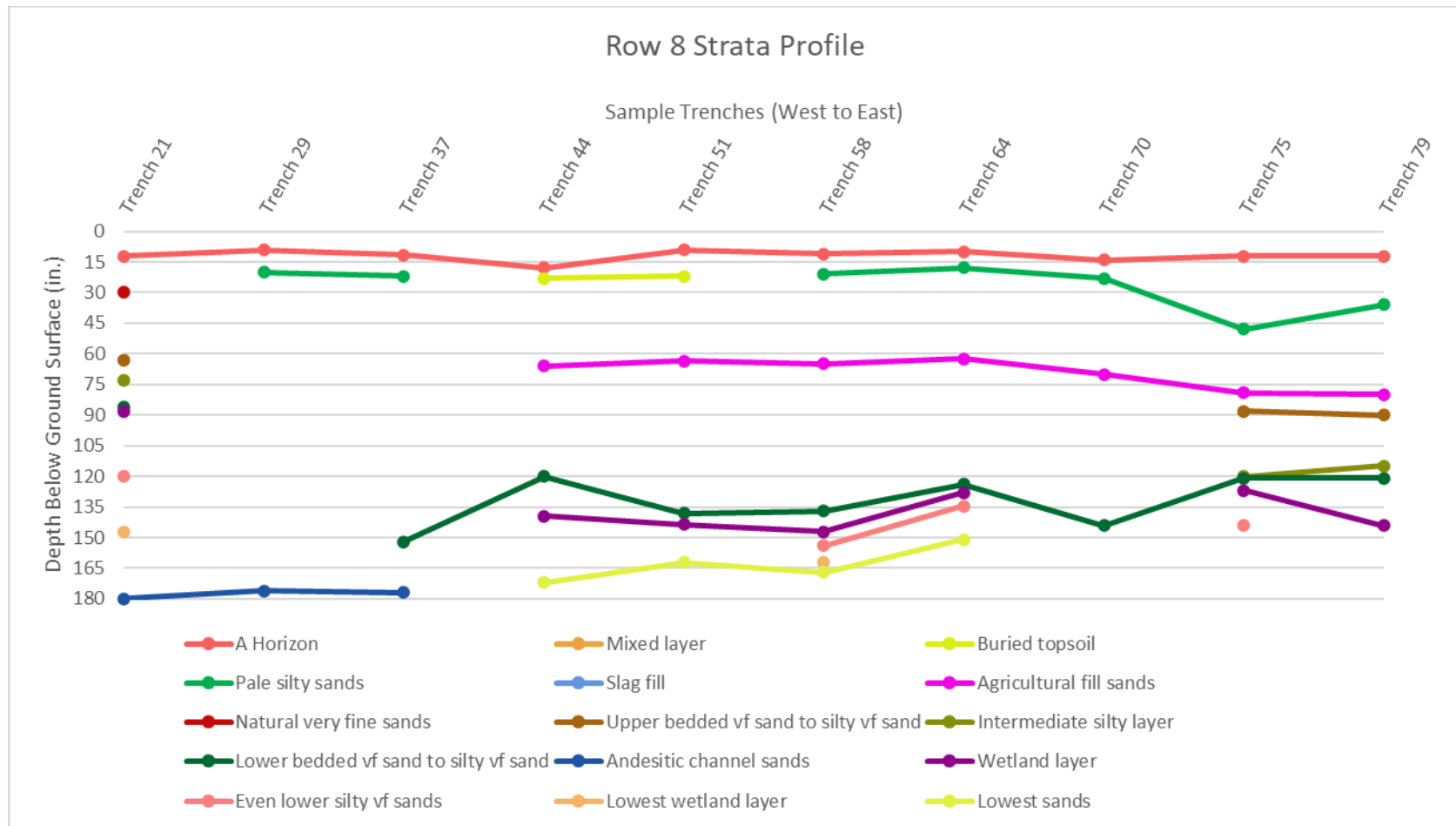


Figure 28. Row 8 stratigraphy profile.

CULTURAL RESOURCE ASSESSMENT RESULTS

No historic properties were identified within the Parcel 12 APE. Fieldwork consisted of backhoe trenching, push probe sampling, and monitoring of geotechnical sonicore bores. Field survey indicates that a relatively uniform layer of silty fill covers the APE from the surface to a depth of approximately 1.2 m (4 ft.), followed by a lower layer of very fine sand fill (agricultural fill) and thereafter native alluvial deposits. The expectation was to encounter fill to a depth of 1.5-3 m (5 and 10 ft.), based on data from the 1970s. However, where encountered, the very fine sand fill averaged 1.8 m (5.9 ft) and was at its deepest at 2.4 m (7.8 ft). In addition, a sandy tributary was documented; however, no cultural resources were identified during the field survey.

CONCLUSIONS AND RECOMMENDATIONS

ATCRC's cultural resources assessment consisted of background review, field investigation, and production of this report. Background review determined that Parcel 12 is in a very high probability area for precontact archaeological sites to be present. No historic properties were identified in the Parcel 12 project area, and, as such, ATCRC recommends a finding of No Historic Properties Affected in this project area. ATCRC also recommends that an IDP be implemented during project ground disturbance; the Port of Tacoma IDP is provided in Appendix A.

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

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APPENDIX A: PORT OF TACOMA INADVERTENT DISCOVERY PLAN

Port of Tacoma Inadvertent Discovery Plan

The following Inadvertent Discovery Plan (IDP) outlines the procedures to be implemented if cultural resource materials are inadvertently discovered during construction, in accordance with state and federal laws. The separate protocol for discovery of human skeletal remains is also described below. The IDP shall be kept at the project site during all project activities. **All staff, contractors, and consultants should be familiar with its contents and know where to find it.**

1. RECOGNIZING CULTURAL RESOURCES

A cultural resource is an item of historical, traditional, or cultural importance. The item could be prehistoric or historic (older than 50 years). Examples might include, but are not limited to:

- An accumulation of shell (shell-midden) with associated bone, stone, antler or wood artifacts, burned rocks or charcoal.
- Animal bones that have been modified or associated with other artifacts.
- An area of charcoal or very dark stained soil with associated artifacts.
- Artifacts made of chipped or ground stone (i.e. an arrowhead, adze or maul) or an accumulation (more than one) of stone flakes (lithic debitage).
- Basketry, cedar garments, fish weir stakes or items made of plant materials.
- Clusters of tin cans or bottles, logging or agricultural equipment that appear to be older than 50 years.
- Buried railroad tracks, decking, or other industrial materials.

NRHP Eligibility

To be eligible for the National Register of Historic Places (NRHP) cultural resources identified during construction must be 50 years of age or older, meet one or more of the four criteria listed below, and retain sufficient physical integrity to convey historical significance (36 CFR 60.4). A building, site, object, or structure may be considered for inclusion in the NRHP if it meets at least one of the following criteria:

1. The property is associated with events that have made a significant contribution to the broad patterns of our history.
2. The property is associated with the lives of persons significant in our past.
3. The property embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components might lack individual distinction.

4. The property has yielded, or might be likely to yield, information important in prehistory or history.

In addition to the four criteria legally defined in 36 CFR 800.16(d), the PTOI has stated within the Port Study Area, it should be considered whether a resource meets the fifth criterion established by the PTOI: be of significance to the PTOI (Brandon Reynon, Personal; communication 2025).

The following archaeological resources will indicate potentially NRHP-eligible deposits and will be assumed NRHP-eligible until determined otherwise by the State Historic Preservation Officer (SHPO):

- Precontact deposits (such as midden) associated with Native American use or occupation.
- Historic-era artifacts from NRHP-eligible (or potentially NRHP eligible) deposits.
- Historic era non-Native American artifacts from non-eligible contexts, only if they are diagnostic or have educational value.
- Historic features consisting of stratified deposits with artifact concentrations that appear to be spatially or temporally distinct. This includes refuse deposits, privies, or discrete accumulations.
- Courses of brick or other architectural materials that are part of a building foundation or pavement in their original position.

Examples of deposits that will not be considered NRHP-eligible include:

- Isolated or loose construction materials (brick, mortar, window glass), bottles, cans, located within fill sediments (not located in primary context).
- Mass deposits of lumber, concrete, granite, coal, etc.
- Pilings, decking, trestle, and railroad track, unless of clearly unique construction.
- Historic-era artifacts not associated with a feature or stable surface.

Artifacts or deposits that are not potentially eligible, as described above, will only be noted in daily field logs, photographed, and documented on scaled site plans (if possible). The procedures for an inadvertent discovery will not be implemented for artifacts or deposits that are not potentially eligible for listing in the NRHP (including the stop-work clause, noted in the procedure below).

Examples of Potentially NRHP-Eligible Cultural Resources



Precontact Shell Midden



Precontact Stone Tool from 45PI1631 (courtesy of the PTOI HPD).



Precontact Shell Midden



Precontact Stone Tool from the Study Area (courtesy of Port)



Precontact Stone Tool from site 45PI1631, (courtesy of the PTOI HPD).

**Images Public Domain from National Park Service unless noted*



Precontact Animal Bone Mandible (lower jar, possibly with butcher marks), from 45PI1631 (courtesy of the PTOI HPD).



Precontact Animal Bone Tools



Precontact Animal Bone Tool from 45PI1631 (courtesy of the PTOI HPD).



Precontact Animal Bone Tool from 45PI1631 (courtesy of the PTOI HPD).



Historic Artifacts (from top to bottom:
ceramic plate, glass bead, glass bottle)



Historic Hearth Feature from Fort Vancouver



Historic house ruins



Profile of archaeological site in Study Area (courtesy of Port). Note the woody fill layer over native sediments.



Fish Weir in-situ (Courtesy of Burke Museum #45PI00470057)

Site 45PI1636 during construction monitoring (Courtesy of PTOI HPD)



2. PROTOCOL FOR DISCOVERY OF CULTURAL RESOURCES (EXCEPT FOR HUMAN SKELETAL REMAINS DISCOVERY)

STEP 1: STOP WORK & PROTECT THE DISCOVERY

If any employee, contractor, or subcontractor believes that a cultural resource has been uncovered during the project activities they shall instruct all work within 30 feet of the discovery to stop. If that perimeter impedes on health, safety, environmental, or legal requirements, the perimeter will be as near to 50 feet as practical. The discovery location should be secured at all times. The discovering party, or their direct on-site supervisor, shall implement Step 2.

STEP 2: NOTIFY MONITOR and PORT OF TACOMA (Port)

The discovering party shall notify the project's archaeological monitor (if applicable) and Port. If there is a cultural resource monitoring plan in place, the monitor will follow its provisions for monitoring (i.e. determine if the inadvertent discovery is an intact archaeological deposit) and proceed to Step 3 for notifications.

Port of Tacoma (Port)

<u>Engineering Contact (if PM unknown):</u> Thais Howard Director of Engineering 253.888.4718 desk / 253.209.3086 cell thoward@nwseaportalliance.com 253.383.5841 receptionist	<u>Environmental Contact:</u> Mark Rettmann Environmental Project Manager 253-592-6716 desk and cell (no text) mrettmann@portoftacoma.com
---	---

STEP 3: Port WILL NOTIFY PTOI HPD

Puyallup Tribe of Indians (PTOI) Historic Preservation Department (HPD)

<u>Primary Contact:</u> Brandon Reynon Archaeologist/Historic Preservation Department 253-573-7965 (desk) / 253-442-9361 (cell) brandon.reynon@puyalluptribe-nsn.gov	<u>Alternative Contact:</u> Mike Shong Archaeologist 253-573-7897 (desk) / 253-339-1967 (cell) Mike.Shong@puyalluptribe-nsn.gov
---	---

STEP 4: PORT WILL NOTIFY DAHP and/or FEDERAL LEAD AGENCY (when applicable) – Except for discovery of human skeletal remains (see protocol below in section 3)

DAHP

<u>Primary Contact:</u> Rob Whitlam, Ph.D. State Archaeologist 360-890-2615 Rob.Whitlam@dahp.wa.gov	<u>Alternative Contact:</u> Allyson Brooks, Ph.D. SHPO 360- 480-6922 Allyson.Brooks@dahp.wa.gov	<u>Alternate Contact:</u> Morgan McLemore Deputy SHPO 360- 972-4007 Morgan.mclemore@dahp.wa.gov
---	---	---

The Washington State Department of Archaeology and Historic Preservation (DAHP) will review eligibility criteria, make a recommendation to the artifact or deposits potential eligibility, and will proceed with agency and tribal notification as necessary (so long as the artifact or deposit is determined eligible). After consultation, DAHP will complete a written plan of action describing the treatment of cultural resources pursuant to 43 CFR Part 10 and will execute their prescribed duties within that plan of action.

3. PROTOCOL FOR DISCOVERY OF HUMAN SKELETAL REMAINS

In the event that human remains are discovered during the construction, the following procedures are to be followed to ensure compliance with RCW 68.60: Abandoned and Historic Cemeteries and Historic Graves, and RCW 27.44: Indian Graves and Records. Washington State law requires immediate notification of known or suspected human remains to county and/or municipal law enforcement agencies, county medical examiner or coroner's offices, DAHP, and federal and local agencies involved directly with the project or having jurisdiction over the subject properties.

If ground-disturbing activities encounter human skeletal remains during construction, then all activity that may cause further disturbance to those remains must immediately cease and the area of the find must be secured and protected from further disturbance. Any human remains that are discovered will be treated with dignity and respect. *No photography* is allowed except for the purpose of the lead archaeologist or tribal archaeologist to communicate with the PTOI HPD or State Physical Anthropologist to confirm human remains. Photographs sent to the PTOI or State Physical Anthropologist shall have a scale. If and when human remains are confirmed, no further photography shall occur, and the lead archaeologist shall delete photos.

The remains should not be touched, moved, or further disturbed. If, however, handling of human remains is unavoidable, the archaeological monitor and/or professional archaeologist will use cloth gloves. All remains will remain covered with a tarp that will not be removed until such time that the coroner or DAHP assumes jurisdiction of the find.

Upon the discovery of human skeletal remains, the above Steps 1-3 will be implemented. The Port will *first notify the PTOI HPD* and subsequently notify and report to the County Sheriff, County Medical Examiner, and the Port Security in the most expeditious manner possible. The County Medical Examiner will determine if the remains are human and whether the discovery constitutes a crime scene. If the remains are determined to not be a crime scene, the County Medical Examiner will notify DAHP. The DAHP will be responsible for informing the affiliated tribes regarding the discovery. Contact information for the County Medical Examiner and the DAHP is provided below.

CONTACT INFORMATION IF HUMAN SKELETAL REMAINS ARE DISCOVERED

Port to first contact the PTOI HPD:

<u>Primary Contact:</u> Brandon Reynon Archaeologist/HPD 253-573-7965 (desk) / 253-442-9361 (cell) brandon.reynon@puyalluptribe-nsn.gov	<u>Alternative Contact:</u> Mike Shong Archaeologist 253-573-7897 (desk) / 253-339-1967 (cell) Mike.Shong@puyalluptribe-nsn.gov
---	---

Port to contact the following in the most expeditious manner possible:

<u>Pierce County Sheriff:</u> Office Non-emergency (253)798-7530	<u>Pierce County Medical Examiner:</u> Medical Examiner's Office: (253) 798-6494
<u>Port Security:</u> Fabulich Center, 3600 Port of Tacoma Rd, 24 hr, 7 days a week 253-383-9472	

The County Medical Examiner will contact DAHP if they determine the remains are not a crime scene/non-forensic and *DAHP will be responsible for informing the affiliated tribes* regarding the discovery.

<u>Primary DAHP:</u> Guy Tasa, Ph.D. State Physical Anthropologist (360) 790-1633 Guy.Tasa@dahp.wa.gov	<u>Alternative DAHP:</u> Jennifer Spence, Ph.D. Assistant State Physical Anthropologist (360) 890-0174 jennifer.spence@dahp.wa.gov
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4. PROCEEDING WITH CONSTRUCTION

Project construction outside the discovery location may continue while documentation and assessment of the cultural resources proceed. A Cultural Resources Specialist (either from DAHP, a consulting Tribe, or a professional consultant) must determine the boundaries of the discovery location. In consultation with DAHP and affected tribes, the project lead will determine the appropriate level of documentation and treatment of the resource. If federal agencies are involved, the agencies will make the final determinations about treatment and documentation.

Construction may continue at the discovery location only after the process outlined in this plan is followed, and DAHP (and the federal agencies, if any) determine that compliance with state and federal laws is complete.

5. CONFIDENTIALITY

All parties, including Port and its employees, contractors, and consultants, shall keep inadvertent discoveries confidential. Parties shall not contact the press, post social media, or share information with any third party or member of the public. Prior to releasing any information about the inadvertent discovery, the Port, concerned Tribe(s), and DAHP will concur on the procedures and the level of information which may be released, as allowed by law.

APPENDIX B: CORRESPONDENCE

6/17/25, 10:18 AM

Aqua Terra Cultural Resource Consultants Mail - call to discuss new project methodology



Carson Golden <carson.golden@aquaterrarcrc.com>

call to discuss new project methodology

7 messages

Carson Golden <carson.golden@aquaterrarcrc.com>

Tue, Apr 22, 2025 at 3:06 PM

To: Brandon Reynon <brandon.reynon@puyalluptribe-nsn.gov>, Mike Shong <Mike.Shong@puyalluptribe-nsn.gov>

Cc: Sarah Amell <sarah@aquaterrarcrc.com>

Hi Brandon and Mike,

I hope you both are doing well. ATCRC was recently contracted to provide a cultural resource survey for the Neptune Development Project at the Port of Tacoma. Could we please set up a time for a quick call to discuss proposed field methodology for this project. My calendar is very flexible, so if there is a good time for you, please let me know.

Best,
Carson Golden

--

Carson Golden, M.A., RPA

Aqua Terra Cultural Resource Consultants

Cultural Resource Archaeology Team Lead

Carson.Golden@AquaTerraCRC.com

360-754-2208

Office Hours: Tuesday- Friday, 7:30 - 4:30

www.AquaTerraCRC.com

If you are reaching out regarding a request for marketing materials or a scope/fee for your project, please visit <https://www.aquaterrarcrc.com/our-services.html>, download our pre-project worksheet, and return the completed materials to scoperequest@aquaterrarcrc.com for the most expedited response from our team.

Carson Golden <carson.golden@aquaterrarcrc.com>

Tue, May 6, 2025 at 9:45 AM

To: Brandon Reynon <brandon.reynon@puyalluptribe-nsn.gov>, Mike Shong <Mike.Shong@puyalluptribe-nsn.gov>

Cc: Sarah Amell <sarah@aquaterrarcrc.com>

Good morning, Brandon and Mike,

I hope you both are doing well. I just wanted to follow up on my previous email and see if there was a good time for either or both of you where we could set up a call to discuss the field methodology for the Neptune Development Project at the Port of Tacoma? My calendar is very flexible, so if there is a good time for you, please let me know.

Thank you,
Carson Golden
[Quoted text hidden]

Mike Shong <Mike.Shong@puyalluptribe-nsn.gov>

Tue, May 6, 2025 at 11:41 AM

To: Carson Golden <carson.golden@aquaterrarcrc.com>

Cc: Brandon Reynon <Brandon.Reynon@puyalluptribe-nsn.gov>, Sarah Amell <sarah@aquaterrarcrc.com>

Hi Carson,

I'm in the field most of this week, but I am able to take a call if you would like to chat. If I have any questions or concerns, I can relay them back to Brandon and get an answer.

I'm available for the next hour or so before I move on to the next field project.

Mike
253-339-1967

<https://mail.google.com/mail/u/0/?ik=4387f46361&view=pt&search=all&permthid=thread-a:r1200203648878556582&simpl=msg-a:r230904354420185...> 1/4

6/17/25, 10:18 AM

Aqua Terra Cultural Resource Consultants Mail - call to discuss new project methodology

Sent from my iPhone

On May 6, 2025, at 9:45 AM, Carson Golden <carson.golden@aquaterracrc.com> wrote:

[Quoted text hidden]

Carson Golden <carson.golden@aquaterracrc.com>

Thu, May 8, 2025 at 9:12 AM

To: Mike Shong <Mike.Shong@puyalluptribe-nsn.gov>

Good morning Mike,

I am so sorry about the delayed response to your email. It took me longer than I had anticipated to gather all the field methodology information for this project on Tuesday. I am happy to chat via phone about the project. I am free anytime today after 11, and I am free all day tomorrow if there is a good time to chat.

I will also try calling early this afternoon.

Best,

Carson Golden

[Quoted text hidden]

Mike Shong <Mike.Shong@puyalluptribe-nsn.gov>

Thu, May 8, 2025 at 10:54 AM

To: Carson Golden <carson.golden@aquaterracrc.com>

Hi,

Try giving me a call after 11 AM today. I'm in the field but can take your call.

Mike

Sent from my iPhone

On May 8, 2025, at 9:12 AM, Carson Golden <carson.golden@aquaterracrc.com> wrote:

[Quoted text hidden]

Carson Golden <carson.golden@aquaterracrc.com>

Thu, May 8, 2025 at 12:08 PM

To: Mike Shong <Mike.Shong@puyalluptribe-nsn.gov>

Cc: Sarah Amell <sarah@aquaterracrc.com>

Hi Mike,

Thank you so much for taking the time to chat with me about the Neptune Development Project. I have attached a brief description of the three project areas below as well as a map with the proposed methodology. If you have any questions, comments, or concerns, please let me know.

Neptune Development: approximately 30.43 acres,
only approximately 12 acres can be surveyed due to contaminants and invasive species
trenching 12 acres, 50 meter interval n=20 trenches

Parcel 12: approximately 3.891 acres
depth of fill believed to be 5-10 ft
shovel probes 15 meter interval n=70

Gog-le-hi-te Mitigation site (1.98 acres)

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6/17/25, 10:18 AM

Aqua Terra Cultural Resource Consultants Mail - call to discuss new project methodology

depth of fill believed to be approximately 6 ft
shovel probes 30 meter intervals n=10

Please let me know if you have any questions, comments, or concerns.

Best,
Carson Golden

Best,
Carson Golden
[Quoted text hidden]



Proposed field methodology.jpg
242K

Mike Shong <Mike.Shong@puyalluptribe-nsn.gov>
To: Carson Golden <carson.golden@aquaterrarc.com>
Cc: Sarah Amell <sarah@aquaterrarc.com>, Brandon Reynon <Brandon.Reynon@puyalluptribe-nsn.gov>

Thu, May 8, 2025 at 3:44 PM

Hi Carson,

Nice to chat with you earlier today.

I haven't spoken with Brandon yet, but I don't have huge concerns with the Neptune Development site, or the Gog-le-hi-te Mitigation site. The former is located at the distal end of the delta front and is covered with an estimated 15-18 ft of fill, so reaching native mudflat sediments (even with a backhoe) may be challenge. The latter site has been mostly excavated with only the NE 1/3 of the site available for inspection and the ten proposed shovel probes will unlikely reach native sediments. What is planned for this area? If the plan is to enlarge the existing aquatic habitat area then monitoring should be recommended. I'll double check with Brandon about these two sites and get back with you to confirm.

Parcel 12 is a big concern for me based on the landform and proximity to 45PI0974 (~300 m). A quick review of lidar imagery suggests there may be little or no fill on this site (but hard to know). The WISAARD predictive model shows this area as very high-risk, and in this case, the model is correct. What is the plan for this site? Do you have an estimated depth of proposed disturbance? If native sediments can be reached with manual shovel probes, then a minimum of 10 m SP intervals should be employed, although Brandon may want 5 m intervals for this one, depending on the depth of fill and depth of the proposed disturbance. The midden at 45PI0974 was approximately 3 m below the ground surface, or approximately 1.5 m below the native ground surface, so I would recommend auguring every probe (again, depending on the depth of fill and depth of proposed disturbance).

I'll try to chat with Brandon about this tomorrow, however it may have to wait until our weekly THPO meeting next Tuesday.

Regards,

<https://mail.google.com/mail/u/0/?ik=4387f46361&view=pt&search=all&pemthid=thread-ar1200203648878556582&simpl=msg-ar1230904354420185...> 3/4

6/17/25, 10:18 AM

Aqua Terra Cultural Resource Consultants Mail - call to discuss new project methodology

Mike

[Quoted text hidden]

<https://mail.google.com/mail/u/0/?ik=4387f46361&view=pt&search=all&permthid=thread-a:r1200203648878556582&simpl=msg-a:r230904354420185...> 4/4

6/17/25, 10:16 AM

Aqua Terra Cultural Resource Consultants Mail - Parcel 12 Habitat Site CRA Fieldwork



Carson Golden <carson.golden@aquaterrarc.com>

Parcel 12 Habitat Site CRA Fieldwork

2 messages

Rettmann, Mark <MRettmann@portoftacoma.com>

Wed, May 21, 2025 at 6:32 PM

To: "Brandon.Reynon" <Brandon.Reynon@puyalluptribe-nsn.gov>, "Mike.Shong" <Mike.Shong@puyalluptribe-nsn.gov>

Cc: "Evered, Kristin" <kevered@portoftacoma.com>, Sarah Amell <sarah@aquaterrarc.com>, Carson Golden

<carson.golden@aquaterrarc.com>

Hello Brandon and Mike,

As you know, the Port is planning CRA fieldwork with ATCRC at a few sites including at the Port Parcel 12. I understand Carson and/or Sarah have been discussing this with you and that Brandon was going to reach out to me to discuss. I am sending this email as I will be out tomorrow (5/22) and ATCRC will be starting at the other two sites next Tuesday and we'd like to clarify your preferences for Parcel 12.

The Hart Crowser Geology of Tacoma report indicates fill in the area is between 5 and 10 ft bgs (Appendix C: Hart and Crowser 1974:26 [1974-1-1], 40). A very draft concept plan is attached showing existing topo elevations (10-15 ft) and a concept grading plan to restore a wetland which requires excavation of ~5-10 feet of material. So the project depths have the potential to contact native soils in the excavated wetland area given these assumptions. An additional important part of this field effort will be to document the fill thickness to better understand where the contact is located.

Carson has indicated that you have strong cultural concerns for this parcel and would like to see 5m interval shovel probes (SPs) in addition to auguring. Given the labor required to conduct the resulting number of SPs and auguring, as well as potential safety concerns from the prior encampment, and the fact that most of the SPs and augers might not reach thru the fill to the native contact we are considering doing trenches with a mini-excavator. Sarah suggested trenches would be possible and that she suggests a 20m interval given the high risk concern. Sarah or Carson could likely speak to how deep the trenches may reach.

Would trenches at 20m intervals be an acceptable approach? My only concern is if the trenches don't reach thru the fill to the native contact will that still be sufficient or would a different method be required? Unless ATCRC has a contingency for this situation?

Please reply to this group email or discuss directly with Kristin (253-888-4776) or Sarah.

Regards,

Mark

p.s., Kristin/Sarah/Carson – Please provide the fieldwork schedule to this group once it is finalized and keep us updated of any changes.

Mark Rettmann

Environmental Project Manager

<https://mail.google.com/mail/u/0/?ik=4387f46361&view=pt&search=all&permthid=thread-f:1832782471503344386&simpl=msg-f:183278247150334438...> 1/2

6/17/25, 10:16 AM

Aqua Terra Cultural Resource Consultants Mail - Parcel 12 Habitat Site CRA Fieldwork

PORT OF TACOMA

O: 253.592.6716

www.portoftacoma.com



All e-mail communications with the Port of Tacoma are subject to disclosure under the Public Records Act and should be presumed to be public.

 **Parcel 12 Concept Plan Excerpt - Internal Review Draft.pdf**
316K

Mike Shong <Mike.Shong@puyalluptribe-nsn.gov>

Fri, May 23, 2025 at 12:37 PM

To: Mark Rettmann <MRettmann@portoftacoma.com>

Cc: Brandon Reynon <Brandon.Reynon@puyalluptribe-nsn.gov>, Kristin Evered <kevered@portoftacoma.com>, Sarah Amell <sarah@aquaterrarc.com>, Carson Golden <carson.golden@aquaterrarc.com>

Hello Mark,

Thank you for the maps. The depth of fill on Parcel 12 is the big open-ended question it seems. If the fill is closer to 10 ft. thick then a mini excavator isn't going to provide the data we need. We need to understand what's below the ground, even below the depth of the proposed excavation, to a reasonable depth. I propose sampling 2 m 6 (ft) into native sediments. That would be consistent with the archaeological deposits nearby.

I don't think interval/spacing is as important as collecting really good geomorphological data during the field investigation. The parcel is wooded so navigating a backhoe and other constraints might be challenging so I recommend we aim for a 10m trench interval with the understanding that some trenches will be 15m or maybe even 20m apart.

A sample of native sediments will need to be passed through a screen, however, the most important aspect of the investigation should be looking for buried surfaces and associated trace organics that may represent cultural activities. Archaeological indicators in that area may be very discreet.

I think a thoughtful and adaptable field methodology is required to adequately sample Parcel 12. Continuous core data would be ideal. Whatever method can very closely and accurately scrutinize the upper 2m of native sediments. I'd like to participate in the investigation as much as my schedule allows, so hopefully that's OK with Sarah and her team.

Again, no concerns about methodology at Neptune or Gog-li-hiti.

Mike

Sent from my iPhone

On May 21, 2025, at 6:33 PM, Rettmann, Mark <MRettmann@portoftacoma.com> wrote:

[Quoted text hidden]

<Parcel 12 Concept Plan Excerpt - Internal Review Draft.pdf>

<https://mail.google.com/mail/u/0/?ik=4387f46361&view=pt&search=all&permthid=thread-f:1832782471503344386&simpl=msg-f:183278247150334438...> 2/2

8/20/25, 1:41 PM

Aqua Terra Cultural Resource Consultants Mail - Technical Notification for the Neptune Development Parcel 12 Trenching Project C...



Lindsey Holdener <lindsey@aquaterrarc.com>

Technical Notification for the Neptune Development Parcel 12 Trenching Project Cultural Resource Assessment

1 message

Lindsey Holdener <lindsey@aquaterrarc.com>

Wed, Aug 20, 2025 at 1:38 PM

To: Mike Shong <mike.shong@puyalluptribe-nsn.gov>, Brandon Reynon <brandon.reynon@puyalluptribe-nsn.gov>

Cc: Carson Golden <carson.golden@aquaterrarc.com>, Sarah Amell <sarah@aquaterrarc.com>, "Evered, Kristin"

<kevered@portoftacoma.com>, "Rettmann, Mark" <MRettmann@portoftacoma.com>

Good Afternoon,

This is a technical notification and information request in support of a cultural resource monitoring assessment by ATCRC for the Neptune Development Parcel 12 Trenching Project located in 3802 Taylor Way, Tacoma, WA within Section 1 of Township 20 North, and Range 3 East Pierce County, WA, on Port of Tacoma Tax Parcel No. 12 (Google Maps link: [Parcel 12 Entry](#)). Attached below are maps of the project area.

ATCRC will be on starting at 9am on August 25th and will continue work monday through friday until September 9th. Work will resume on September 17th if needed and continue through October 1st to complete backhoe trenching for this project. This site was requested for archaeological assessment prior to construction by the Port of Tacoma (POT) with methodology developed in a team effort by PTOI, ATCRC, and POT. For this project, 82 backhoe trenches will be excavated using a large excavator.

The location is in a Very High Risk area for precontact archaeological deposits, as defined by the DAHP and PTOI has indicated the relatively close proximity of archaeological site 45P1974. If there is any additional information about cultural resources or culturally sensitive areas that we should be aware of before fieldwork, we would appreciate any information you can provide. Please feel free to contact me if you have any questions regarding the project. Attached below is a map of the project location and access to the project area.

Parking is available on 4th Street to avoid the active traffic going in and out of the parcel needed to access the project area. Site access is available through the adjacent parcel (see below).



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8/20/25, 1:41 PM

Aqua Terra Cultural Resource Consultants Mail - Technical Notification for the Neptune Development Parcel 12 Trenching Project C...

Regards,

Lindsey Holdener, M.S., RPA

Project Archaeologist

Lindsey@aquaterrarcrc.com

Aqua Terra Cultural Resource Consultants

1216 South 2nd Ave SW

Tumwater, WA 98512

(o) 360-754-2208

Available: Monday-Thursday 8am-5pm Friday 8am-12pm

www.AquaTerraCRC.com

*If you are reaching out regarding a request for marketing materials or a scope/fee for your project, please visit <https://www.aquaterrarcrc.com/our-services.html>, download our pre-project worksheet, and return the completed materials to scoperequest@aquaterrarcrc.com for the most expedited response from our team.

2 attachments



neptune_12Aerial.jpg
613K



neptune_parcel12_24k.jpg
686K

<https://mail.google.com/mail/u/0/?ik=02625cf630&view=pt&search=all&permthid=thread-a:r5254472805110413896&simpl=msg-a:r-169850886560879...> 2/2

8/20/25, 1:40 PM

Aqua Terra Cultural Resource Consultants Mail - Technical Notification for the Neptune Development Parcel 12 Trenching Project C...



Lindsey Holdener <lindsey@aquaterrarc.com>

Technical Notification for the Neptune Development Parcel 12 Trenching Project Cultural Resource Assessment

1 message

Lindsey Holdener <lindsey@aquaterrarc.com>

Wed, Aug 20, 2025 at 1:39 PM

To: Carson Golden <carson.golden@aquaterrarc.com>, Sarah Amell <sarah@aquaterrarc.com>

Cc: "Evered, Kristin" <kevered@portoftacoma.com>, "Rettmann, Mark" <MRettmann@portoftacoma.com>

Bcc: Brad Beach <beach.brad@nisqually-nsn.gov>, Casey Barney <casey_barney@yakama.com>, Shaun Dinubilo <sdinubilo@squaxin.us>, adam@snoqualmtribe.us, strudel@suquamish.nsn.us, laura.murphy@muckleshoot.nsn.us

Good Afternoon,

This is a technical notification and information request in support of a cultural resource monitoring assessment by ATCRC for the Neptune Development Parcel 12 Trenching Project located in 3802 Taylor Way, Tacoma, WA within Section 1 of Township 20 North, and Range 3 East Pierce County, WA, on Port of Tacoma Tax Parcel No. 12 (Google Maps link: [Parcel 12 Entry](#)). Attached below are maps of the project area.

ATCRC will be on starting at 9 am on August 25th and will continue work Monday through Friday until September 9th. Work will resume on September 17th if needed and continue through October 1st to complete backhoe trenching for this project. This site was requested for archaeological assessment prior to construction by the Port of Tacoma (POT) with methodology developed in a team effort by PTOI, ATCRC, and POT. For this project, 82 backhoe trenches will be excavated using a large excavator.

The location is in a Very High Risk area for precontact archaeological deposits, as defined by the DAHP and PTOI has indicated the relatively close proximity of archaeological site 45PI974. If there is any additional information about cultural resources or culturally sensitive areas that we should be aware of before fieldwork, we would appreciate any information you can provide. Please feel free to contact me if you have any questions regarding the project. Attached below is a map of the project location and access to the project area.

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Regards,

<https://mail.google.com/mail/u/0/?ik=02625cf630&view=pt&search=all&permthid=thread-a:r3057434602593998139&simpl=msg-a:r824375336056207...> 1/2

8/20/25, 1:40 PM

Aqua Terra Cultural Resource Consultants Mail - Technical Notification for the Neptune Development Parcel 12 Trenching Project C...

Lindsey Holdener, M.S., RPA
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*If you are reaching out regarding a request for marketing materials or a scope/fee for your project, please visit <https://www.aquaterrarc.com/our-services.html>, download our pre-project worksheet, and return the completed materials to scoperequest@aquaterrarc.com for the most expedited response from our team.

2 attachments



neptune_parcel12_24k.jpg
686K



neptune_12Aerial.jpg
613K

<https://mail.google.com/mail/u/0/?ik=02625cf630&view=pt&search=all&permthid=thread-a:r3057434602593998139&simpl=msg-a:r824375336056207...> 2/2

"If you are reaching out regarding a request for marketing materials or a scope/fee for your project, please visit <https://www.aquaterrarcrc.com/our-services.html>, download our pre-project worksheet, and return the completed materials to scoperequest@aquaterrarcrc.com for the most expedited response from our team.



All e-mail communications with the Port of Tacoma are subject to disclosure under the Public Records Act and should be presumed to be public.

Taylor Harriman <THarriman@suquamish.nsn.us>
To: "lindsey@aquaterrarcrc.com" <lindsey@aquaterrarcrc.com>
Cc: Stephanie Trudel <strudel@suquamish.nsn.us>

Wed, Aug 20, 2025 at 2:42 PM

Hello Lindsey,

Thank you for reaching out to the Suquamish Indian Tribe regarding ATCRC's cultural resources assessment for the Neptune Development Parcel 12 Trenching Project. The Suquamish Tribe's Archaeology and Historic Preservation Program has reviewed the project area and has no additional ethnographic or historic information specifically referencing the project locality beyond what is available in published sources.

Thank you,
Taylor Harriman

Taylor Harriman
Archaeologist I
Suquamish Tribe
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360-394-8529
tharriman@suquamish.nsn.us

From: Stephanie Trudel <strudel@Suquamish.nsn.us>
Sent: Wednesday, August 20, 2025 2:15 PM
To: Taylor Harriman <THarriman@suquamish.nsn.us>
Subject: FW: [External] Technical Notification for the Neptune Development Parcel 12 Trenching Project Cultural Resource Assessment

APPENDIX C: TRENCH LOG

Notes: logs for both trenches and push probes (push probes were compacted and not accurate for actual depth). Depths in inches below ground surface.

	UTM	A HORIZON	MIXED LAYER	BURIED TOPSOIL	PALE SILTY SANDS	SLAG FILL	AGRICULTURAL FILL SANDS	NATURAL VERY FINE SANDS	UPPER BEDDED VF SAND TO SILTY VF SAND	INTERMEDIATE SILTY LAYER	LOWER BEDDED VF SAND TO SILTY VF SAND	ANDESITIC CHANNEL SANDS	WETLAND LAYER	EVEN LOWER SILTY VF SANDS	LOWEST WETLAND LAYER	LOWEST SANDS
Trench 0	548375.4828965835 5233655.279051686	16			38			56			72			144		
Trench 01	548385.0937209887 5233665.577548137	13			38						72			144		
Trench 02	548404.9294550028 5233666.193736934	16			32			66			128		124	144		
Trench 03	548374.8688115848 5233675.259855913	17	30		36						70			144		
Trench 04	548394.7045447729 5233675.876044797	17	23					66			144					
Trench 05	548414.5402783719 5233676.492233955	13			38						144					
Trench 06	548384.479635161 5233685.558352424	16			31						144					
Trench 07	548404.3153679357 5233686.174541663	14			31			66						144		
Trench 08	548424.1511011195 5233686.790731179	12			36		56		80	107						
Trench 09 East	548443.9868347134 5233687.406920966	12			36						88					
Trench 09 West	-	12			36		50				77	88				
Probe 12	548433.7619232436 5233697.089228623	11						25				180				

	UTM	A HORIZON	MIXED LAYER	BURIED TOPSOIL	PALE SILTY SANDS	SLAG FILL	AGRICULTURAL FILL SANDS	NATURAL VERY FINE SANDS	UPPER BEDDED VF SAND TO SILTY VF SAND	INTERMEDIATE SILTY LAYER	LOWER BEDDED VF SAND TO SILTY VF SAND	ANDESITIC CHANNEL SANDS	WETLAND LAYER	EVEN LOWER SILTY VF SANDS	LOWEST WETLAND LAYER	LOWEST SANDS
Trench 13	548453.5976564228 5233697.70541876	11.5			19							177				
Trench 14	548473.4333900163 5233698.321609185	14				31	41					50				
Probe 15	548403.7012804489 5233706.15534606	9			13			26.5								177
Trench 16	548423.5370123927 5233706.771536021	12			16						72					
Trench 17	548443.3727447462 5233707.387726261	23										78				
Probe 18	548463.2084775122 5233708.003916764	13				25						176				
Trench 19	548483.0442106895 5233708.620107545	12	23		36		72				128		133	144		
Trench 20	548502.8799442765 5233709.236298597	38			53		89				144					
Probe 21	548393.4763710435 5233715.837653139	12						30	63	73	86	180	88	120	147	
Probe 22	548413.3121021602 5233716.453843191	13										174				
Probe 23	548433.1478336884 5233717.070033515	12			17							177				
Probe 24	548452.9835656268 5233717.686224109	12			33		68				144					
Probe 26	548492.6550307387 5233718.918606117	11			23		63.5									162
Trench 27	548512.4907639134 5233719.534797526	15			40		72				110		126	147		

	UTM	A HORIZON	MIXED LAYER	BURIED TOPSOIL	PALE SILTY SANDS	SLAG FILL	AGRICULTURAL FILL SANDS	NATURAL VERY FINE SANDS	UPPER BEDDED VF SAND TO SILTY VF SAND	INTERMEDIATE SILTY LAYER	LOWER BEDDED VF SAND TO SILTY VF SAND	ANDESITIC CHANNEL SANDS	WETLAND LAYER	EVEN LOWER SILTY VF SANDS	LOWEST WETLAND LAYER	LOWEST SANDS
Probe 28	548532.3264974989 5233720.1509892065	13			32		64.5		80	84	136.5		144	163.5	171	
Probe 29	548403.0871925447 5233726.136150116	9			20							176				
Trench 31	548442.7586543622 5233727.368531211	12			35								144			
Trench 32	548462.5943858854 5233727.984722166	12			36		68				136		144			
Probe 33	548482.4301178197 5233728.600913393	11	26		21		68.5									165
Trench 34	548502.2658501657 5233729.217104895	37			42		88		116	120	140		144			
Probe 35	548522.1015829262 5233729.833296665	11.5			25		65		97.5	101	128.5		140	146	155	161
Probe 36	548541.9373160977 5233730.449488706	13	29.5		25.5		64		75	83	144		155			
Probe 37	548412.6980134277 5233736.434647294	11.5			22						152	177				
Probe 38	548432.5337437148 5233737.050838064	11			22		71							146	161	163
Trench 39	548452.3694744138 5233737.667029119	12			36		76				146					
Trench 40	548472.2052055218 5233738.283220432	12			36		72		92	96	136		144			
Trench 41	548492.040937043 5233738.899412022	12			43		85		106	111	144					
Trench 42	548511.8766689725 5233739.515603878	15			36		96		106	112	122		144			

	UTM	A HORIZON	MIXED LAYER	BURIED TOPSOIL	PALE SILTY SANDS	SLAG FILL	AGRICULTURAL FILL SANDS	NATURAL VERY FINE SANDS	UPPER BEDDED VF SAND TO SILTY VF SAND	INTERMEDIATE SILTY LAYER	LOWER BEDDED VF SAND TO SILTY VF SAND	ANDESITIC CHANNEL SANDS	WETLAND LAYER	EVEN LOWER SILTY VF SANDS	LOWEST WETLAND LAYER	LOWEST SANDS
Probe 43	548531.7124013166 5233740.1317960145	9.5			20		66.5		81	84	125.5		139	146	164	
Probe 44	548422.3088336883 5233746.733144688	18		23			66				120		139 .5			172
Probe 45	548442.1445635576 5233747.349335823	9			24		64				135		137			174
Trench 46	548461.980293843 5233747.96552723	12			27		68		88	94	136		144			
Trench 47	548481.8160245357 5233748.581718906	30			34		81				121		144			
Trench 49	548521.4874871589 5233749.814103072	14			36		84		94	98	109		118	144		
Probe 50	548541.3232190886 5233750.430295571	9			16		67				129.5		137	143	161	165
Probe 51	548431.9196533225 5233757.031642288	9		22			63.5				138		143 .5			162
Probe 52	548451.7553827817 5233757.647833779	9			19		64				133		137	139	155	162
Trench 53	548471.5911126498 5233758.264025545	12			28		76				144					
Trench 54	548491.4268429271 5233758.880217585	10			17		68				126		146			
Probe 55	548511.2625736184 5233759.496409897	11			30		62		70	83	91				165	
Probe 56	548531.0983047206 5233760.112602476	11			20		63		81	86	126		139	159	162	
Probe 57	548550.9340362358 5233760.728795337	10.5			16. 5		64.5		74	83.5	129				157.5	162

	UTM	A HORIZON	MIXED LAYER	BURIED TOPSOIL	PALE SILTY SANDS	SLAG FILL	AGRICULTURAL FILL SANDS	NATURAL VERY FINE SANDS	UPPER BEDDED VF SAND TO SILTY VF SAND	INTERMEDIATE SILTY LAYER	LOWER BEDDED VF SAND TO SILTY VF SAND	ANDESITIC CHANNEL SANDS	WETLAND LAYER	EVEN LOWER SILTY VF SANDS	LOWEST WETLAND LAYER	LOWEST SANDS
Probe 58	548441.5304723401 5233767.3301400915	11			21		65				137		147	154	162	167
Probe 59	548461.3662013813 5233767.94633195	10			21		67.5				134		144	148	155	
Trench 60	548481.2019308337 5233768.562524074	18			33		76				127		144			
Trench 61	548501.0376606977 5233769.178716473	14			36		82		100	116	126		144			
Trench 62	548520.8733909721 5233769.794909145	13			34		84		92	100	104		108			
Probe 63	548540.7091216595 5233770.411102084	11			20.5		66.5		75	80	135				162	
Probe 64	548451.1412907307 5233777.628638109	10			18		62.5				124		128	134.5		151
Trench 65	548470.9770193581 5233778.244830322	12			36		94			102	123		129	144		
Trench 66	548490.8127483948 5233778.861022807	12			48		72				127		129	144		
Trench 67	548510.6484778435 5233779.477215568	12	21		38		72		87	108	113		144			
Trench 68	548530.4842077048 5233780.093408599	13			48		76		84	102	123		128	144		
Probe 69	548550.3199379775 5233780.709601903	11			19		68		77	79	126.5				154	160
Trench 70	548460.7521085023 5233787.927136331	14			23		70				144					
Trench 71	548480.5878367118 5233788.543328902	12			36		81		112	117	136		144			

	UTM	A HORIZON	MIXED LAYER	BURIED TOPSOIL	PALE SILTY SANDS	SLAG FILL	AGRICULTURAL FILL SANDS	NATURAL VERY FINE SANDS	UPPER BEDDED VF SAND TO SILTY VF SAND	INTERMEDIATE SILTY LAYER	LOWER BEDDED VF SAND TO SILTY VF SAND	ANDESITIC CHANNEL SANDS	WETLAND LAYER	EVEN LOWER SILTY VF SANDS	LOWEST WETLAND LAYER	LOWEST SANDS
Trench 72	548500.4235653329 5233789.15952175	12			36		74		84	99	121		144			
Trench 73	548520.2592943681 5233789.775714875	11			44		70		102	108	122		144			
Probe 74	548540.0950238125 5233790.391908264	12			18. 5		65		79	80		137. 5	150	159.5	168	
Trench 75	548470.3629256468 5233798.225634761	12			48		79		88	120	121		127	144		
Probe 76	548490.1986534442 5233798.841827694	7			12		68.5				127		138			156
Trench 77	548510.0343816516 5233799.458020899	12			30		64		80	102	110		138	145		
Probe 78	548529.8701102675 5233800.074214382	12			16		66		79	87	127		143	159	165	166
Trench 79	548479.9737421739 5233808.524133392	12			36		80		90	115	121		144			
Trench 80	548480.0382186548 5233843.6361851316	12			36		84			99	110		112	132	144	

APPENDIX D: SONICORE BORE LOG

Note: depth in inches below ground surface.

	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07
UTM	548345.2812047 802, 5233563.479174 467	548344.9767122 455 ,5233581.311367 819	548345.4796701 702 ,5233593.555586 344	548345.1439838 641 ,5233606.576128 016	548344.8085061 058, 5233618.351700 983	548345.4969704 903 , 5233631.939100 526	548345.5293842 276, 5233646.986374 169
Wood chips	19				60	18	12
Topsoil	36	7	14	26			
Very new fill						33	
Buried topsoil						66	
Upper fill layers	132	62	60	81	93	90	
Older non-andesitic fill sands		133	132	132	132	128	
Native buried wetland soil horizons					134	144	135
Native silty vf sands	198	217		212	210	217	210
Clayey silt	203	222			220	223	220
Silty vf sand	214	229					
Clayey silt	231	234					
Silty vf sand	240	240	240			240	240

APPENDIX E PROFILE PHOTOS



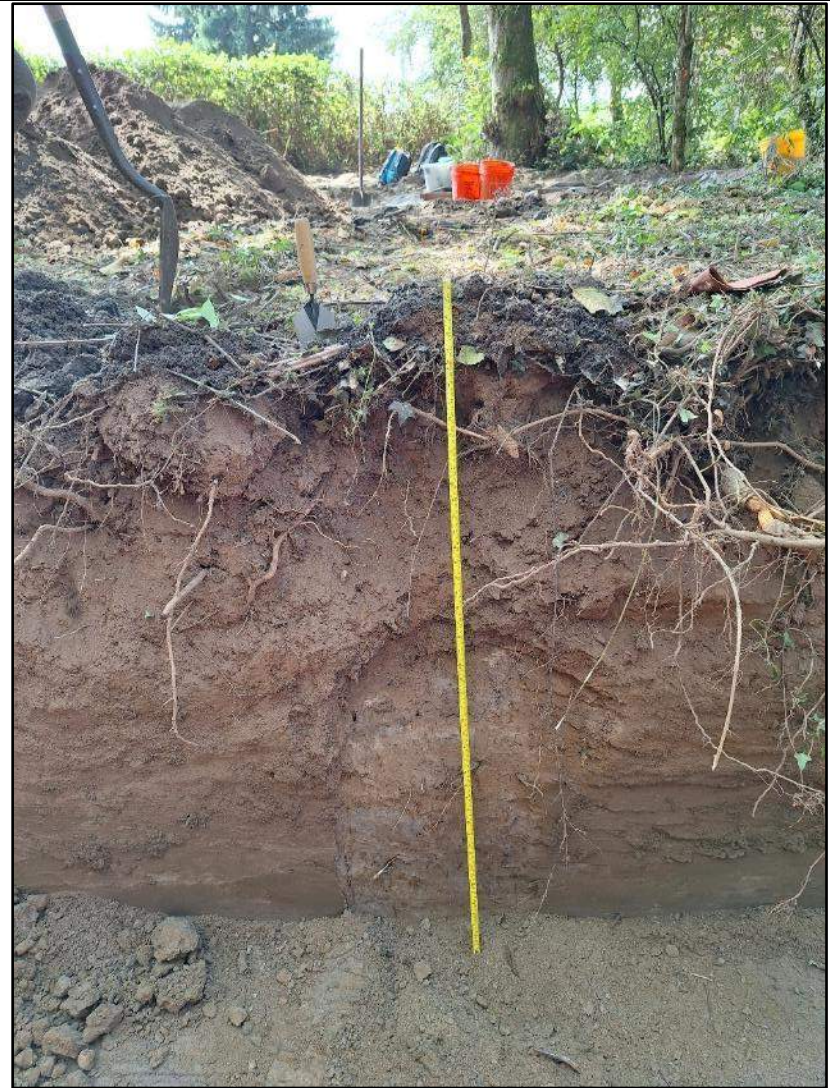
Trench 0



Trench 1



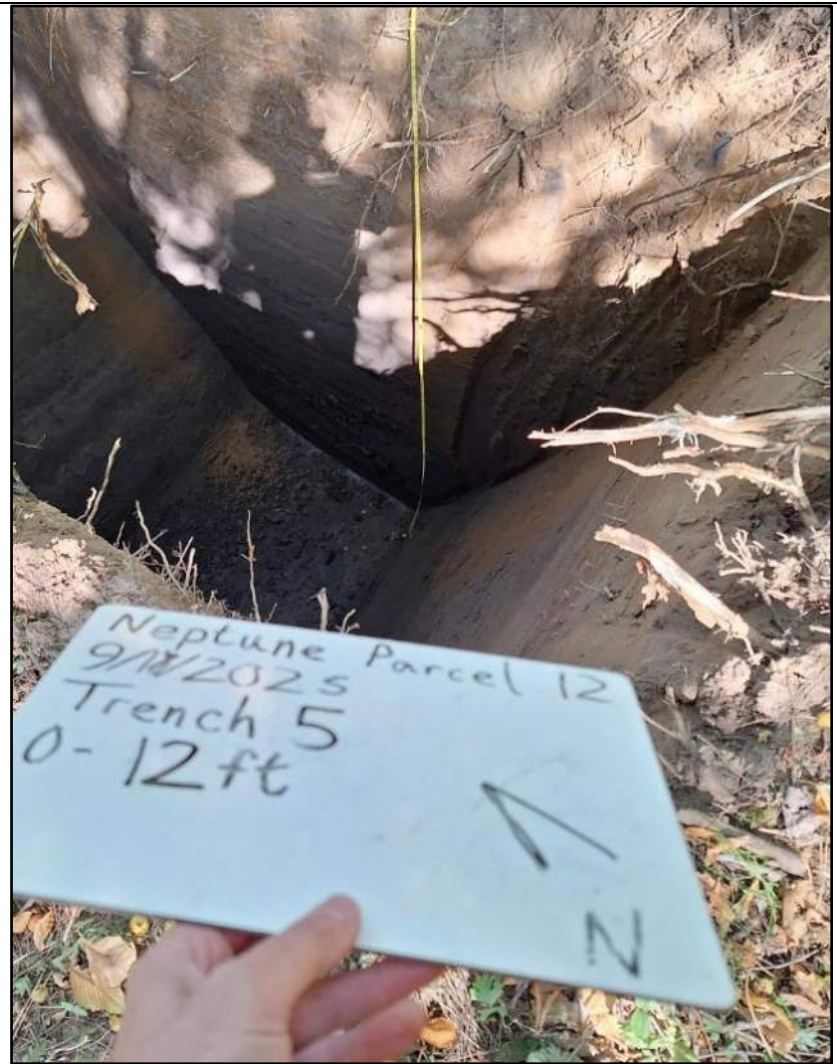
Trench 2



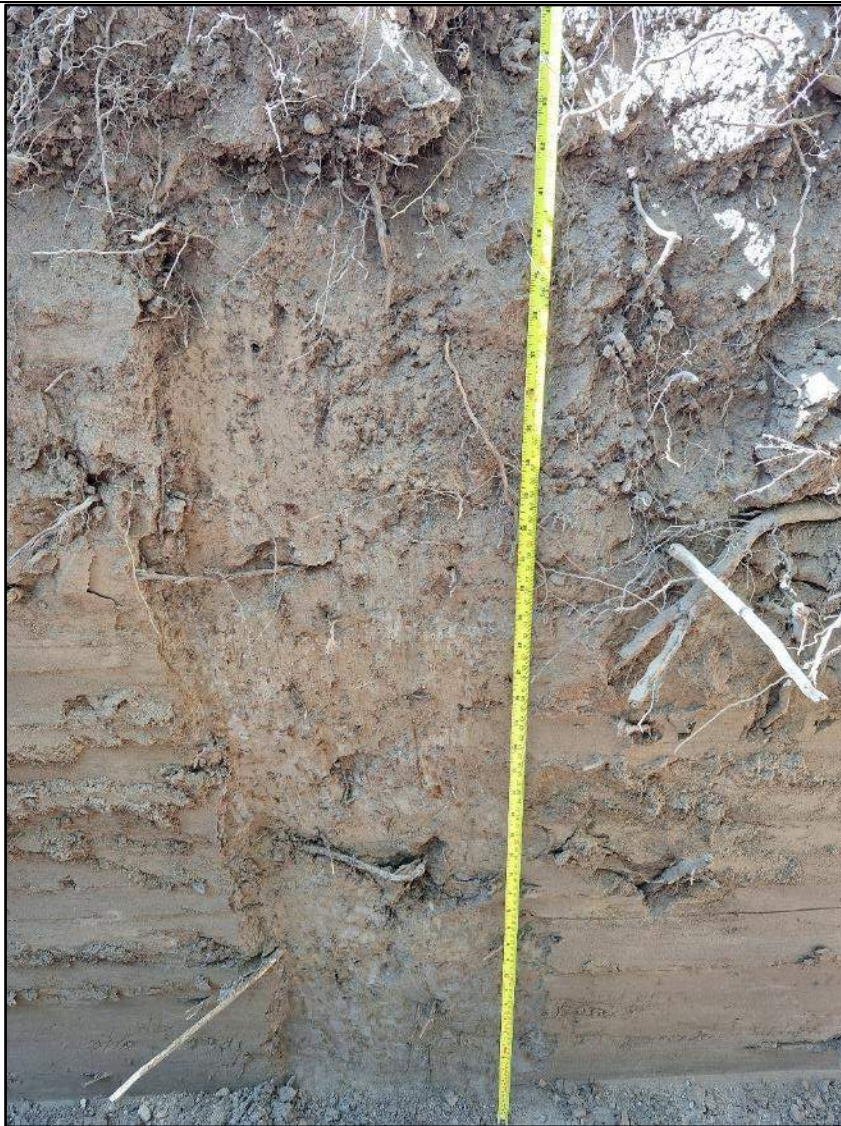
Trench 3



Trench 4



Trench 5



Trench 6



Trench 7



Trench 8



Trench 9



Trench 14



Trench 16



Trench 17



Trench 19



Trench 20



Trench 27



Trench 31



Trench 32



Trench 34



Trench 39



Trench 40



Trench 41

Neptune Parcel 12
8/27/25



Trench 42



Trench 46



Trench 47



Trench 49



Trench 53



Trench 54



Trench 60



Trench 61



Trench 62



Trench 65



Trench 66



Trench 67



Trench 68



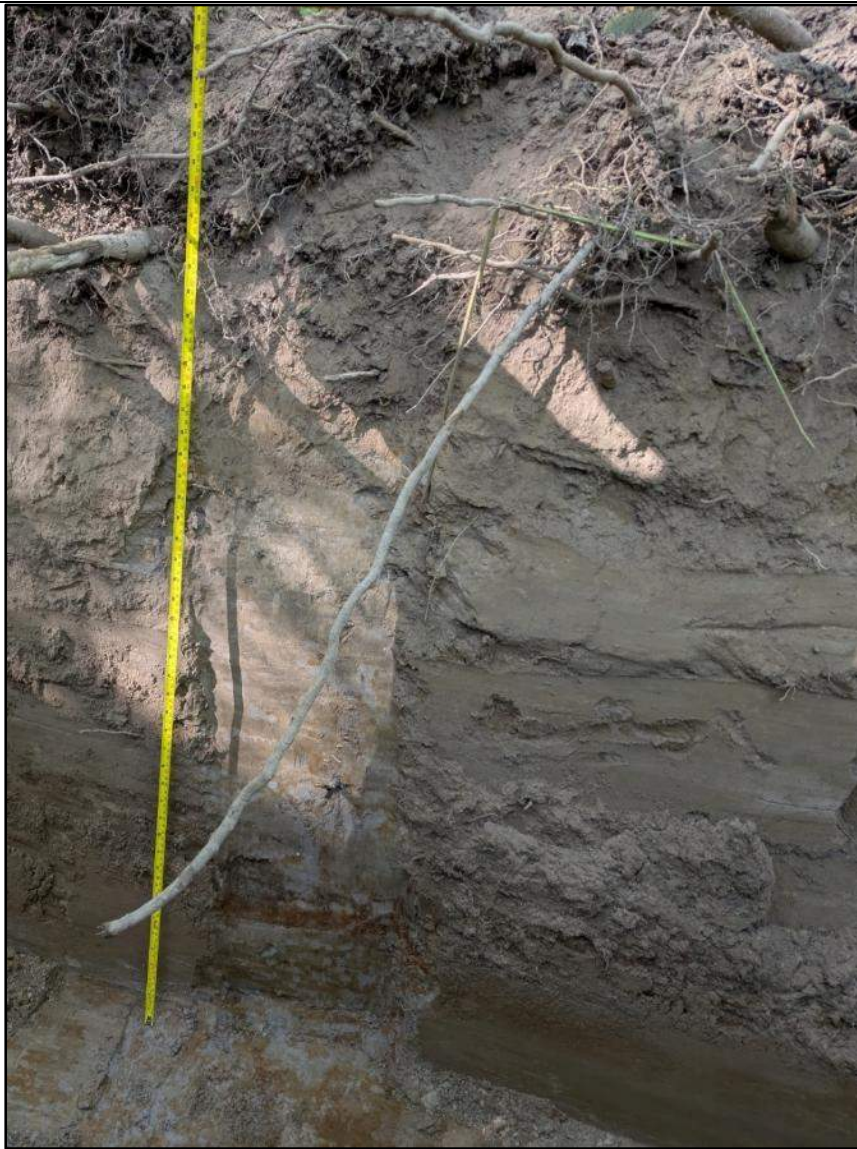
Trench 70



Trench 71



Trench 72 (misabeled in field)



Trench 73



Trench 75



Trench 77



Trench 79



Trench 80