CULTURAL RESOURCES REPORT COVER SHEET

Author: Carol Schultze, PhD, RPA

Title of Report: Inadvertent Discovery Plan for the USG Interiors Highway 99 Site Project, Pierce County, Washington

Date of Report: July 2016

County(ies): Pierce Section: 5 Township: 20 Range: 4E

Quad: Puyallup Acres: ~ 5

PDF of report submitted (REQUIRED) ☒ Yes

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

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

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

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

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

DAHP Archaeological Site #:

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

Inadvertent Discovery Plan for the USG Interiors Highway 99 Site Project, Pierce County, Washington

Prepared for:
USG Interiors, LLC
Chicago, Illinois

Submitted by:
Historical Research Associates, Inc.
Carol Schultze, PhD, RPA

Seattle, Washington
July 2016

Historical
Research
Associates, Inc.

This plan was prepared by HRA Archaeologist Carol Schultze, PhD, RPA who meets the Secretary of the Interior's professional qualifications standards for archaeology. This plan is intended for the exclusive use of the Client and its representatives. It contains professional conclusions and recommendations concerning the potential for project-related impacts to archaeological resources based on the results of HRA's investigation. It should not be considered to constitute project clearance with regard to the treatment of cultural resources or permission to proceed with the project described in lieu of review by the appropriate reviewing or permitting agency. This plan should be submitted to the appropriate state and local review agencies for their comments prior to the commencement of the project.

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1. Introduction and Project Description

The USG Highway 99 site is located between Pacific Highway East and Interstate 5 in Milton, Pierce County, Washington (Figure 1-1). The Project is located in Township 20 North, Range 04 East, Section 5, Willamette Meridian, and is depicted on the Puyallup USGS 7.5 minute topographic Quadrangle map. It is located in a commercial area situated between the east side of Pacific Highway East and Interstate 5 at an elevation of approximately 20 feet (ft) above mean sea level (amsl).

USG Interiors, LLC (USG) will be remediating arsenic-contaminated soil, groundwater, and sedimenton the Highway 99 site. The arsenic in the soil is derived from fill material brought to this location to bring the site up to grade with Pacific Highway East. The imported fill included contaminated slag from the ASARCO copper smelter. Ground disturbing activities will include subsurface investigation to delineate areas of contamination; geotechnical drilling to obtain soil samples for analysis; and soil, groundwater, and sediment remediation activities.

Given the archaeological sensitivity of the Tacoma region, the Washington Department of Archaeology and Historic Preservation (DAHP) and the Nisqually Tribe have requested an Inadvertent and Unanticipated Discovery Plan (I/UDP) be in place for all ground disturbing activities. CDM Smith is assisting USG with its implemtation of the remedial action. CDM Smith contracted with Historical Research Associates, Inc. (HRA) for the preparation of an I/UDP, which makes up the body of this document.

1.1 Regulatory Context

USG is under an Agreed Order (AO DE 11099 issued in June 2016) with the Washington Department of Ecology (Ecology) to carry out remediation of arsenic contamination on the Highway 99 site. Under AO DE 11099, ground-disturbing activities must be preceded by the preparation of an I/UDP for archaeological resources. This project is subject to Washington State regulations regarding the protection of Native American burials and archaeological sites under the Revised Code of Washington (RCW) 27.44 and 27.53, respectively.

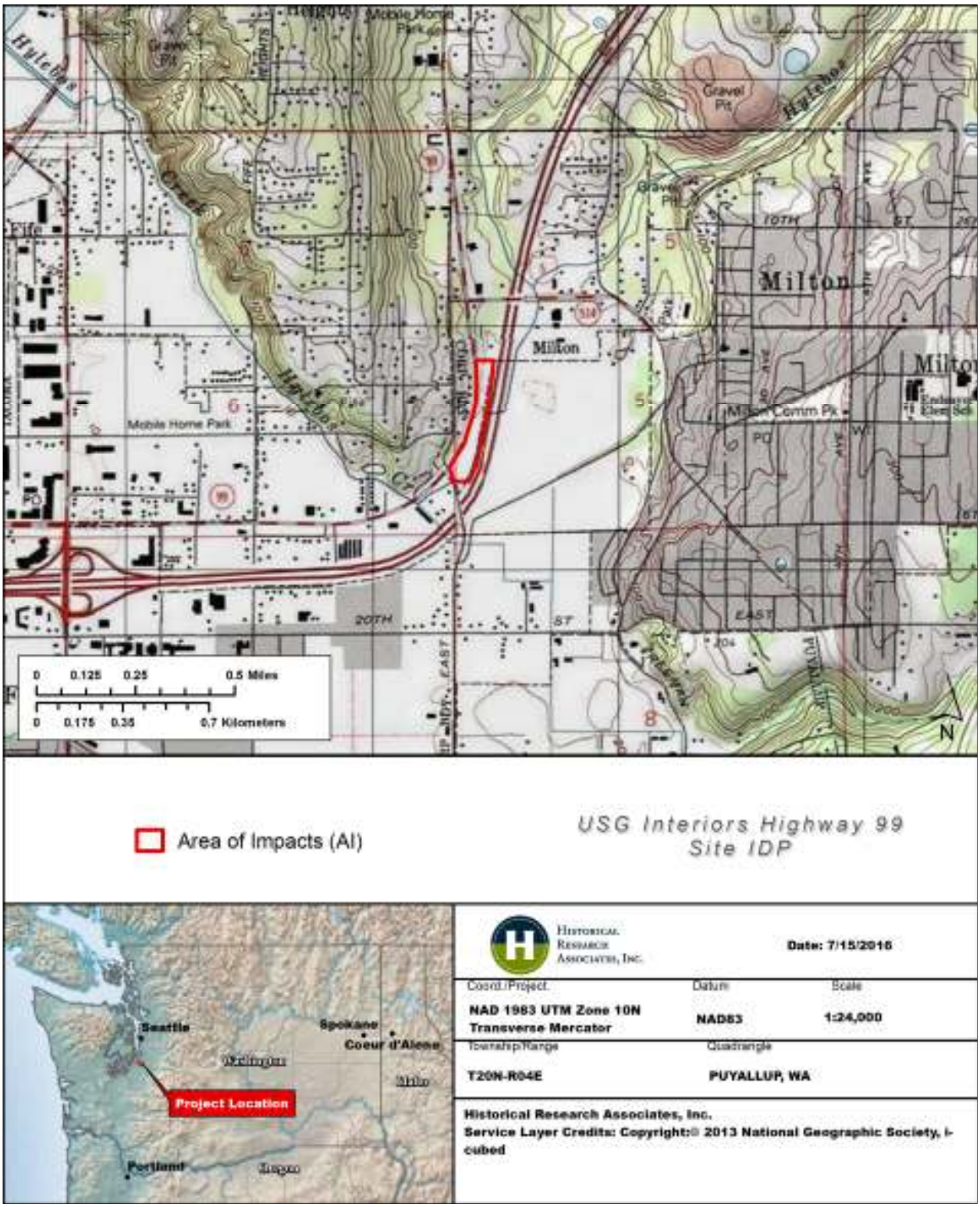

Figure 1-1. Project location and vicinity.

1.2 Area of Impacts

The Area of Impacts (AI) for the project consist of all portions of a project that could receive impacts from the proposed activities. HRA recommends defining the AI to encompass all areas of proposed ground-disturbing soil remediation activities (Figure 1-2). Excavation depths will range from 10 to 15 ft below ground surface (bgs), based on the results of soil testing. The vertical extent of ground-disturbing work will be determined by the extent of the soil contamination. Due to the lack of existing historic properties and aboveground resources fifty years old or older adjacent to or visible to or from the project area, no indirect effects are anticipated.

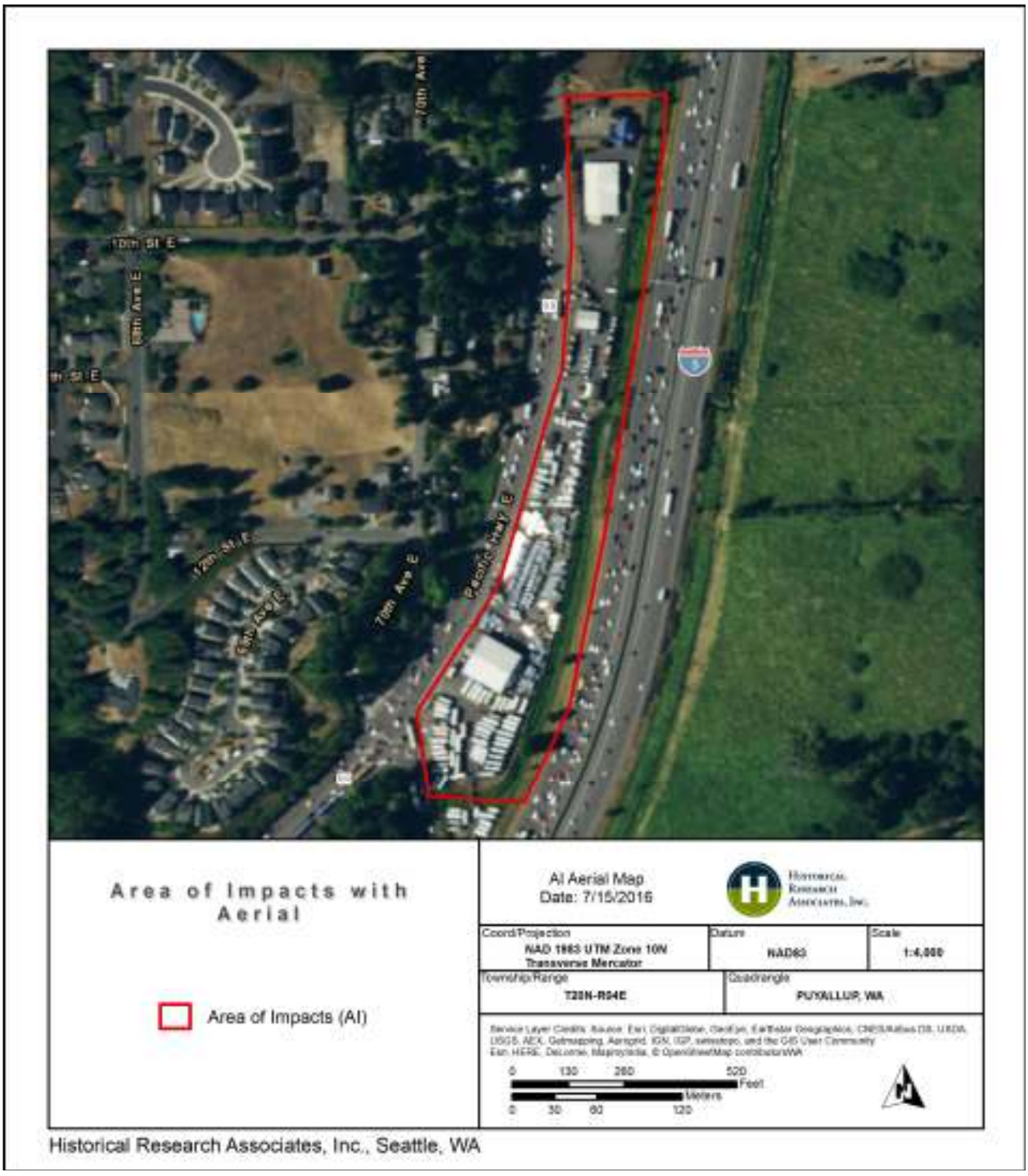

Figure 1-2. Area of Impacts for the project.

2. Archival Research

This chapter provides a review of archival data, including previous cultural resources surveys; documented archaeological sites, historic sites, structures, and objects; and historic maps. Understanding previous sites and studies in the vicinity of a project is important for understanding how intensively work has been conducted in the area. This archival research is also necessary for developing expectations for this project, which will be outlined in Section 5.

2.1 Research Methods and Materials Reviewed

HRA Archaeologist Carol Schultze, PhD, RPA, conducted an archival search for records pertaining to locations within 0.5 mile (mi) of the AI. Schultze searched DAHP's online database, the Washington Information System for Architectural and Archaeological Records Data (WISAARD), for archaeological site records, cultural resource survey reports, historic register information, and cemetery records. The statewide archaeological predictive model on DAHP's WISAARD was reviewed for probability estimates for archaeological resources and to aid in developing the field strategy.

HRA's in-house library was used to obtain information on the environmental, archaeological, and historical context of the AI. Historic nineteenth- and twentieth-century plats and maps from the General Land Office (GLO); United States Surveyor General (USGS); and Snohomish County atlases were reviewed for historic structures, features, and land-use patterns within the vicinity of AI. The GLO plats are available online at the U.S. Department of the Interior's Bureau of Land Management (BLM) website, while the USGS maps are available on the USGS website. County atlases were reviewed online through HistoricMapWorks.com. Since the work will be in the soil and architectural resources over 50 years of age will not be impacted physically or visually, a review for buildings, structures, and objects (BSOs) was not conducted.

2.2 Archival Research Results

2.2.1 Cultural Resources Surveys

A total of nine cultural resources studies have been conducted within 0.5 mi of the AI (Table 2-1). No cultural materials, archaeological sites or isolates within or adjacent to the current AI were recorded by these projects. Cultural resources studies include those carried out in support of Interstate (I)-5 transportation corridor expansion (Luttrell 2004; Sharpe et al. 2009) and street improvements along 70th Avenue East (E) and Valley Avenue E (Luttrell 2007; Ferland 2010; Parvey

2011). One study was associated with roadway improvements along State Route (SR)-99 between 54th Avenue E and 65th Avenue (Chambers and Bawden 2014). Archaeological monitoring was also conducted for the construction of the Fife library (Shong 2011a), to identify historic features, however none were found in the AI.

The area investigated by Sharpe et al. (2009) covered the local I-5 corridor and included the location of AI. Their report included archival research, as well as surface and subsurface investigations of sampled locations along I-5. Excavations were conducted in the AI in a sampled location following the route of Hylebos Creek as it crosses to the west of I-5 and flows south. They excavated four ~50 cm square shovel probes within the north half of the AI (Sharpe et al. 2009:5-12, Exhibit 5-5). One piece of aqua-colored glass was found near the surface, but no other cultural material was found within the AI (Sharpe et al.2009: 6-9).

Sharpe et al. additionally conducted 24 controlled backhoe trenches directly south of the current AI, where Hylebos Creek turns to the west for a 'Flood Mitigation Pond' (Sharpe et al. 2009:5-12, Exhibit 5-5). A variety of fill materials from depths of 43 cm to 1.21 m were recorded, some of which contained historic-period items, including automotive parts (Sharpe et al. 2009:6-1). Below the fill was found alluvial soils, comprised of gray clay with pockets of silt, and in some areas fine brown sand. These were interpreted as intact sediments, specifically non-glacial low-energy alluvial deposits from Holocene. Groundwater was encountered at ~ 2 m bgs (Sharpe et al. 2009:6-3 and Appendix D).

Sharpe et al. also evaluated all historic properties (those over 50 years in age) along this section of the I-5 corridor, including any within the AI. None were recommended eligible for listing on the National Register of Historic Places (NRHP) (Sharpe et al. 2009:Exhibit 6-1).

Two cultural resources investigations were related to the B&L Woodwaste Superfund site cleanup, including archaeological field survey and construction monitoring (Shaw et al. 2009; Dellert and Shaw 2009). The landfill had also used Asarco slag for roadway fill. This project was located directly across I-5 from the AI, in the floodplain of the Puyallup River. Mechanical probes were monitored to depths of 8.8 meters (m). No archaeological site or isolates were recorded (Shaw et al. 2009:26; Dellert and Shaw 2009:3).

Table 2-1 Previously Cultural Resources Studies within 0.5 mi of the AI.

Reference	NADB#	Title	Distance and direction from AI	Cultural Materials Identified Within or Adjacent to the AI
Luttrell (2004)	1343265	*Cultural Resource Investigations for the Washington State Department of Transportation's SR 167: Puyallup to SR 509 Project, Pierce County, Washington.*	0.1 mi S	None
Sharpe et al. (2009)	1352410	*Tacoma/Pierce County HOV Program I-5: Port of Tacoma Road to King County Line - HOV Historic, Cultural, and Archaeological Resources Discipline Report.*	Encompasses AI	None
Luttrell (2007)	1349780	*Cultural Resources Investigations for the City of Fife's 20th Street East Widening Project, Pierce County, Washington*	0.4 mi S	None
Ferland (2010)	1354510	*Cultural Resources NEPA Re-Evaluation for the 70th Avenue East and Valley Avenue East Project, Fife, Washington.*	0.4 mi S	None
Parvey (2011)	1681098	*Addendum to the Cultural Resources Assessment for the 70th Avenue East and Valley Avenue East Project, Fife, Washington. NWAA/SWCA Project No. 21007.*	0.4 mi S	None
Chambers and Bawden (2014)	1686035	*Cultural Resources Assessment for the City of Fife's State Route (SR) 99 Pedestrian Improvements Project, Pierce County, Washington*	0.5 mi SW	None
Shong (2011a)	1686944	*Results of Cultural Resources Documentation and Monitoring at the Fife Library Site, Pierce County, Washington. NWAA/SWCA Report No. 21445*	0.3 mi SW	None
Shaw et al. (2009)	1352541	*Archaeological Monitoring and Cultural Resources Assessment for the B & L Woodwaste Site, Fife, Pierce County, Washington.*	>0.1 mi SE	None

Table 2-1 Previously Cultural Resources Studies within 0.5 mi of the AI.

Reference	NADB#	Title	Distance and direction from AI	Cultural Materials Identified Within or Adjacent to the AI
Dellert and Shaw (2009)	1680989	*Letter Report: Addendum to "Archaeological Monitoring and Cultural Resources Assessment for the B & L Woodwaste Site, Fife, Pierce County, Washington"*	>0.1 mi SE	None

2.2.2 Previously Recorded Archaeological Sites

One precontact and two historic-period archaeological sites were recorded within 0.5 mi of the AI (Table 2-2). The precontact site (45PI488) has been evaluated as eligible for listing on the NRHP (Luttrell 2001). It was recorded as a subsurface concentration of lithic tools and debitage, fire modified rock (FMR), and charcoal. It was found at a depth of 30 to 50 centimeters (cm) bgs and returned a single radiocarbon date ranging 880 ± 50 years Before Present (B.P.).

Historic period Site 45PI1235 was discovered during construction on a library in downtown Fife (Shong 2011b). It consisted of nine distinct historic features, including refuse dumps, a concrete foundation segment, and concrete drain pipes associated with bottles dated from 1910 to 1940 (by maker's marks). A 2.5 mi long section of the historic Puget Sound Electric Railway grade (Site 45PI1408) is located directly east of I-5 (Early 2004). It was in service from 1902 to 1928 and provided regular trolley service along 36.5 miles between Seattle and Tacoma.

Table 2-2 Previously Recorded Cultural Resources within 1 mi of the recommended APE.

Site Number and Name	Reference	Resource Type	Distance and Direction from Recommended APE	NRHP Status
45PI488	Luttrell 2001	Precontact settlement/campsite	0.3 mi S	Eligible
45PI1235 *Fife Library Site*	Shong 2011b	Historic homestead	0.3 mi SW	Unevaluated
45PI1408	Early 2004	Electric Railway Grade	>0.1 mi E	Unevaluated

2.2.3 Historic Register Properties

There are no properties listed in the NRHP or the Washington Historic Register (WHR) within 0.5 mi of the AI. The precontact archaeological site 45PI488 has been determined eligible for listing (see

Section 2.2.2, above). The nearest listed property is the Charles Anderson Farm located 1.3 mi east of the AI. It was built in 1897 (DAHP n.d.).

2.2.4 Cemeteries

No precontact or historic-period cemeteries have been recorded within 0.5 mi of the AI. The nearest cemetery is the St. George's Cemetery located 1.2 mi north of the AI. This is a Native American and Catholic cemetery that has fallen into disrepair. The earliest burials are not listed but likely predate the first burial recorded in 1902 (DAHP 2016).

2.2.5 Native American Place Names

The AI is within the traditional territory of the Puyallup people and was within the boundaries of the Puyallup reservation (Ruby and Brown 1992; USSG 1874). Suttles and Lane (1990:486) depict the nearest precontact village at Commencement Bay, in the vicinity of modern Tacoma. It is referred to as *šáčqəd* , although this term has no translation given. The ethnographer Waterman (ca. 1920; Hilbert et al. 2001:247, 249) recorded three ethnographic place-names within in the vicinity of the AI. The area of tidal flats between Wapato and Hylebos creeks has also been known as *qałqaləq*^{w} (translated by Waterman as "place around which the water passes"). Hylebos Creek was known by the descriptive name *x̌ax̌ɬ̓*, or "brushy." A location approximately 1 mi south of the AI was once referred to as *st*^{w}*x̌ug*^{w}*iɬ,* translated as "the pulling of a canoe," or "plowing through with a canoe." This referred to a location where Wapato Creek approached a swamp, which is visible on the 1873 GLO map and extended north to Hylebos Creek. According to Waterman (ca. 1920; Hilbert et al. 2001:249), this swamp was a location for hunting beaver from canoes. Several foot trails also surround the AI, consistent with its location as a travel corridor in precontact and early historic time.

2.2.6 Historic-Period Plat and Map Research

HRA examined historic-period plats and maps to identify cultural features and, when feasible, land ownership in the AI. The earliest available maps of the AI and vicinity are the GLO plat maps (USSG 1874, 1887) which show the AI within the boundaries of the Puyallup Indian Reservation (established by the Treaty of Medicine Creek in 1854). The military road is in place outside the reservation boundaries. Within the reservation the only features depicted are wetlands and the path of the Hylebos Creek (Figure 2-1). The early USGS topographic maps show the original landform, prior to the urbanization of the area and construction of the freeway. Figure 2-2 shows that, prior to modern development, the northern half of the AI was on the lower side slope of a low hill, while the southern half was crossed directly by Hylebos Creek (USGS 1900, see also USGS 1897, 1941, 1958)

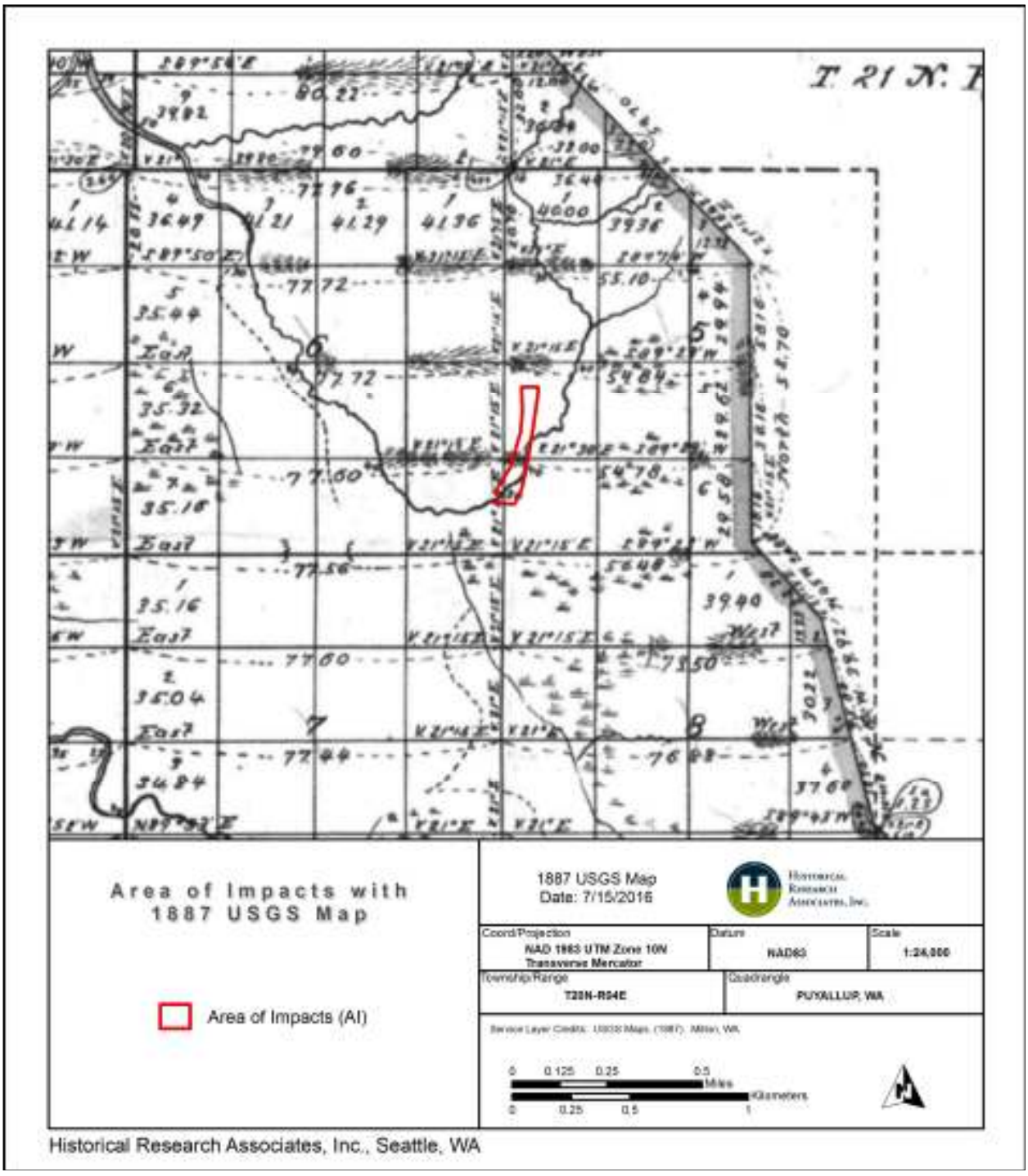

Figure 2-1. The AI location shown in reference to the 1887 GLO plat map.

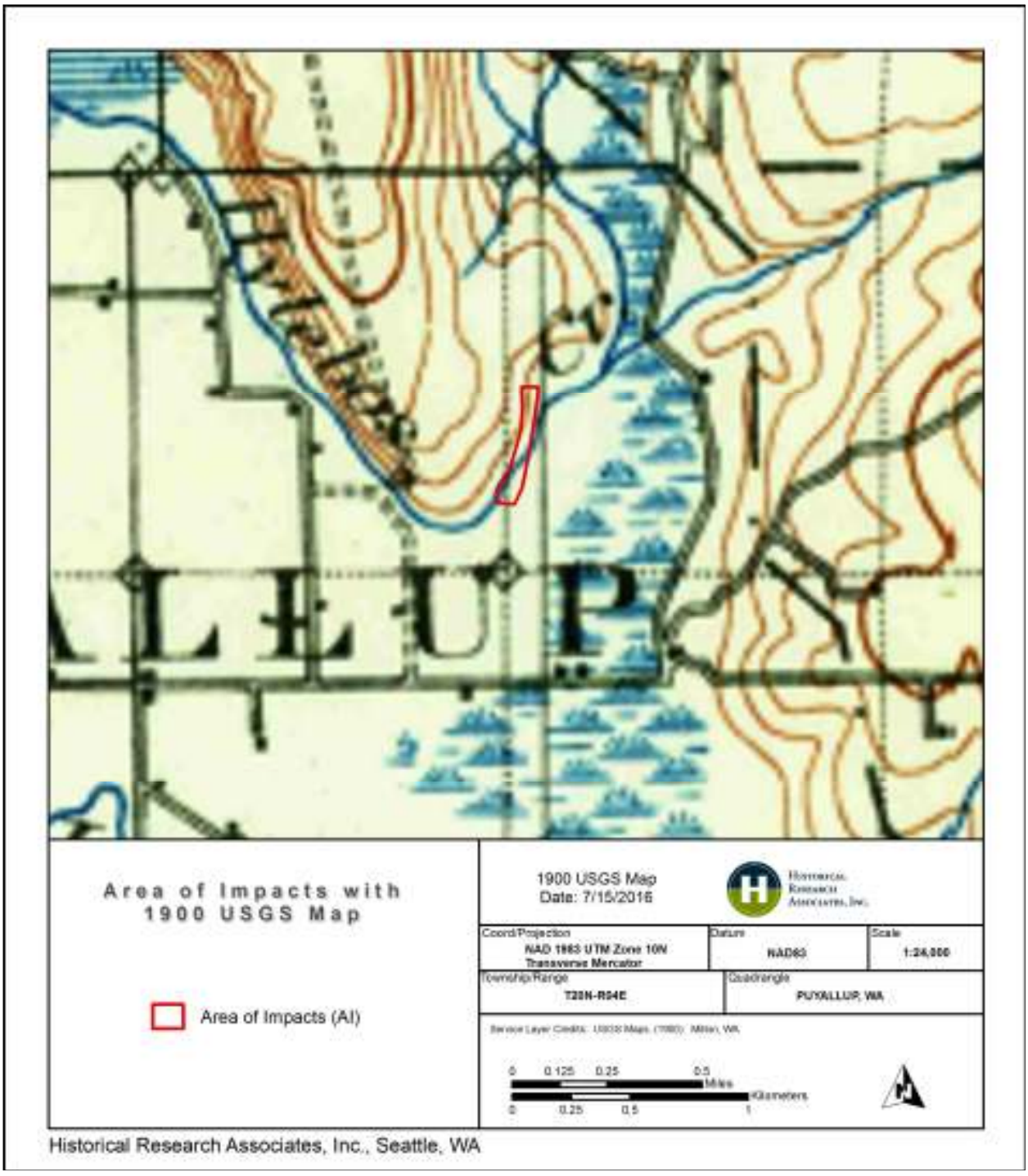

Figure 2-2. The AI location shown in reference to the 1900 USGS map showing original topography.

Nineteenth- and twentieth-century Pierce County maps and atlases were reviewed for features within the AI and vicinity. These dramatically illustrate the rapid urbanization of the Milton-Fife region in the mid-twentieth century. Figure 2-3 shows the AI in reference to the 1960s Metsker map. The AI is bounded by the route of Pacific Coast Highway and I-5 and is subdivided into many small parcels (Metsker 1960), although no property owners are listed. Kroll and Anderson maps were not available for this location, however USGS maps from the remainder of the twentieth century confirm the rapid development (USGS 1961, 1962, 1975, 1991).

Historic aerial maps available online mirror this trend. An aerial photo from 1940 shows Pacific Coast Highway in place but the land of the AI is unmodified. By 1968 the freeway is in place and there is a large patch of disturbed or developed land between the two roadways (Historicaerials.com 2016).

HRA reviewed Sanborn Fire Insurance Company Maps for the state of Washington (available as an electronic reference through the Seattle Public Library) and determined that they did not include the AI.

2.2.7 DAHP Predictive Model

The DAHP archaeological predictive model uses standardized and repeatable statistical methods (Bayesian and Kriging) with statewide environmental and cultural resources data to define areas as having varied probability of the presence of precontact (or prehistoric) archaeological resources. Data on geology, soils, landform, elevation, aspect, slope percent, and distance to water, as well as information gleaned from historic-period GLO plats, were correlated with locations of known archaeological sites to determine the probability that another location would be expected to contain an archaeological site, under a similar set of environmental conditions (Kauhi and Markert 2009:2–3).

DAHP's model combines local information from field surveys to identify locations with five resulting sensitivity management groups: Very High Risk (5), High Risk (4), Moderate Risk (3), Low Risk (2), and Very Low Risk (1), with each representing the predicted risk that archaeological materials could present. The DAHP predictive model map indicates a High to Moderate Risk of encountering archaeological sites in the AI.

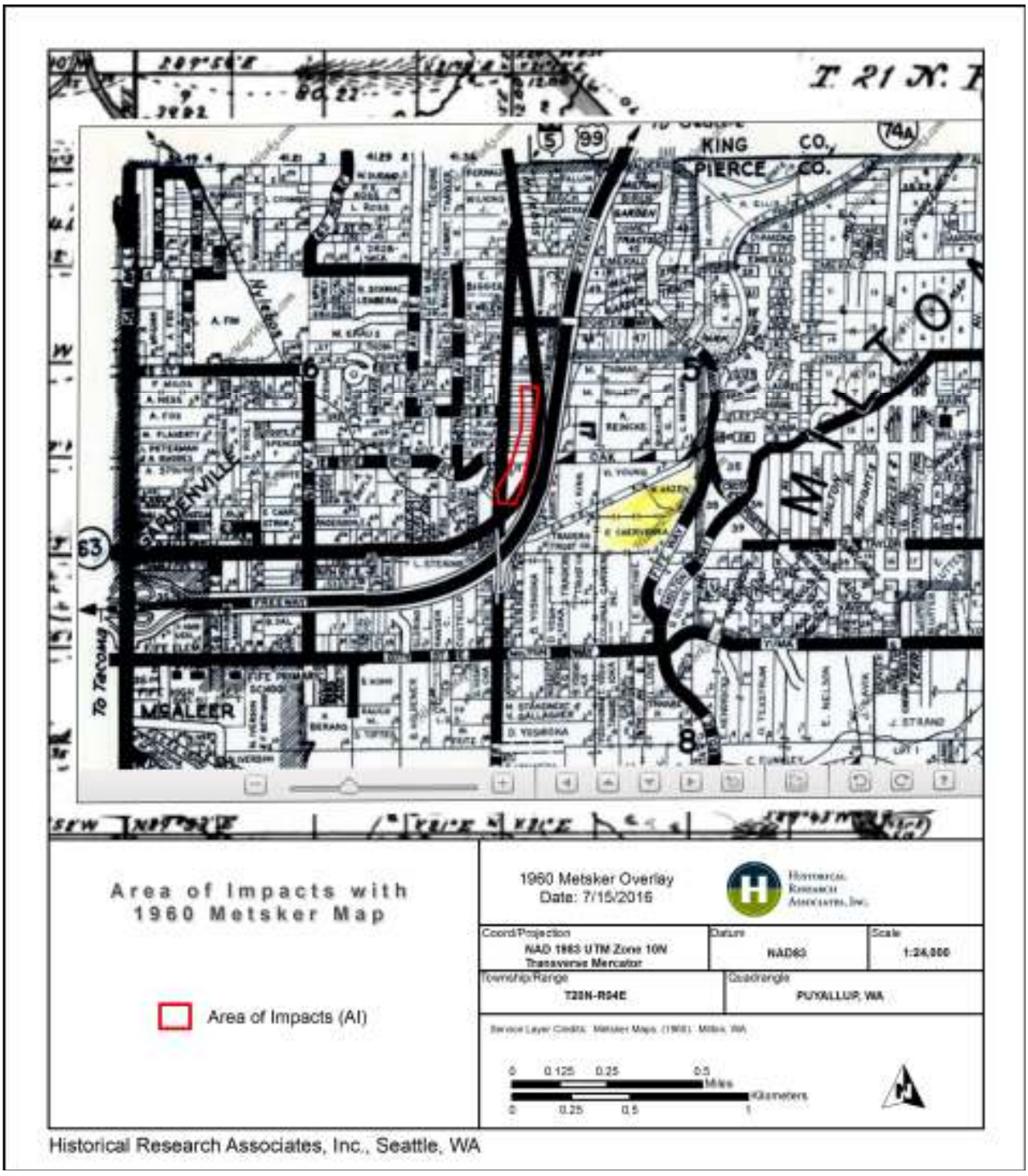

Figure 2-3. The AI location shown in reference to the 1960 Metsker map showing modern development.

3. Environmental Context

This section provides a brief overview of the local environment, including historic modification to this landscape and natural resources. Understanding the local environment, including geology, climate, flora, and fauna, is important for understanding how people used the landscape in the past. This environmental context is necessary for developing expectations for this Project, which will be outlined in Section 5.

3.1 Topography and Geology

The AI is located at the foot of an upland terrace on Hylebos Creek, overlooking the floodplain of the Puyallup River to the south. The AI is located within the Puget Lowland, a physiographic trough that runs from Canada to the Columbia River and is part of a broad regional depression (the Puget Trough province), extending from Canada to the Willamette Valley in Oregon, that developed as a result of subduction and coastal uplift (Orr and Orr 1996:316). This region of the Cascades is composed primarily of tertiary andesite and basalt flows with associated breccias and tuffs, and only minor amounts of igneous intrusive, sedimentary, or metamorphic rocks. The major Cascade Range building period, which included activities such as volcanism, folding, faulting, and uplift, slowed by the end of the mid-Pleistocene. The foothills within the eastern edge of the Puget Lowland province consist primarily of volcanic rock correlated with andesitic and basaltic flows in the Cascades (McKee 1972:292).

Prior to 20,000 years ago, the river valleys of western Washington were eroded by glacial ice, and glacial outwash from retreating glaciers mantled areas above the valley floors, forming moraines that are today expressed as ridges. Multiple glaciations have produced a Quaternary stratigraphic record characterized by marked lateral and vertical changes in sediment type (McKee 1972:297). The last advance of a continental glacier into the Puget Lowland reached its southernmost limit around 17,000 years ago (Porter and Swanson 1998). The Puget Lobe of the Cordilleran Ice Sheet then began receding rapidly northward, retreating to the northern limit of the lowland over the next three or four centuries (Porter and Swanson 1998:205).

The geology of the AI is largely unconsolidated Quaternary alluvial deposits (DNR 2016). Colluvial sediments, emplaced by gravitational processes such as soil creep, surficial sloughing, and slopewash, have also mantled valley slopes and floors (Galster and Laprade 1991:262). Between 13,000 and 5,700 years ago, sea level rose from about 390 ft (120 m) to about 16 ft (5 m) below the contemporary elevation of Puget Sound (Dragovich et al. 1994:9).

Soils mapped on the west side of the AI, along the foot of the hillslope, is designated as Kitsap silt loam. This forms on terraces out of glaciolacustrine deposits and is moderately well drained. Along the flats in the southeastern portions of the AI is Sultan silt loam and Tisch silt. Sultan silt loam is an alluvium-based sediment that forms on flood plains. Tisch silt forms in drainageways out of diatomaceous earth, organic material, and alluvium (USDA 2013).

3.2 Flora and Fauna

With exception to the urbanized areas, the Western Hemlock (*Tsuga heterophylla*) Zone is the primary vegetative zone west of the Cascade Range, between the Coastal Zone and approximately 3,300 ft above sea level. This wet, mild, maritime climate is generally characterized by less than 100 inches of precipitation annually, most of which falls as rain, and summer droughts typical of western Washington (Franklin and Dyrness 1973). Douglas-fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), and western redcedar (*Thuja plicata*) are the major forest tree species, with an understory characterized by devil's club (*Oplomanax horridum*), vine maple (*Acer circinatum*), dull Oregon grape (*Mahonia nervosa*), oceanspray (*Holodiscus discolor*), and various ferns. Deciduous trees such as red alder (*Alnus rubra*), bigleaf maple (*Acer macrophyllum*), and black cottonwood (*Populus balsamifera*), with an understory of salmonberry (*Rubus spectabalis*), often replace western redcedar in riparian and disturbed areas (Franklin and Dyrness 1973; del Moral 1997).

Vegetation on the Puget Lowland has been variable since the last glacial maximum. Changing conditions and natural disasters have shaped the distribution of plants and patterns of vegetation zones. By about 10,000 years B.P., changes in solar insolation, sea surface temperature, and atmospheric trace gases had produced a warm-dry climate in the Pacific Northwest. Pollen records in the southern Puget Lowland between 10,000 and 6,000 years B.P. indicate a predominance of Douglas fir, oak, red alder, grass, and prairie herbs (Brubaker 1991:21). By 6,000 years B.P., the climate was becoming cooler and moister. Pollen levels of Douglas-fir and alder decreased while western redcedar and western hemlock pollen increased. Dendrochronological and historical records describe numerous catastrophic fire events that have affected patterns of vegetation zones across the western Washington landscape over the past 1,000 years (Hollenbeck 1987). The mixed conifer forest stands along the Puyallup River and Hylebos Creek are generally younger than 200 years as a result of natural causes such as forest fires, landslides, and mudflows (Dragovich et al. 1994), as well as human influences including timber production, urban land use, and agricultural development.

The physical and floral diversity of the region provides for varied fauna within the lower Puyallup River watershed. Common animal species throughout the area, prior to Euroamerican settlement, included blacktail deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), black bear (*Ursus americanus*), cougar (*Felis concolor*), bobcat (*Felis rufus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), muskrat (*Ondatra zibethica*), bald eagle (*Haliaeetus leucocephalus*), and a variety of owls and small song birds. Wetland habitats typically supported a specialized but diverse array of fauna that included raccoon (*Procyon*

lotor), river otter (*Lutra canadensis*), beaver (*Castor canadensis*), and a variety of migratory waterfowl and woodland birds (Larrison 1968).

An assortment of resident and anadromous fish species are present in the rivers, tributaries, and independent creeks within the lower Puyallup River watershed. Contemporary Puyallup River fish include: Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), pink (*O. gorbushcha*), and chum (*O. keta*) salmon species, but other salmon species may have been available during the historic and prehistoric periods. Hylebos Creek contains both coho and chum (Williams et al. 1975).

4. Cultural Context

This chapter provides a brief overview of nearly 14,000 years of human occupation in North America, focusing specifically on western Washington and the North Cascades area where possible. Understanding the history of human occupation and land use in an area is crucial for understanding how archaeological data is important and what kinds of archaeological sites may be encountered during a project. This context is necessary for outlining the current state of knowledge about past lifeways and contributes to the development of expectations for this Project, which will be discussed in Section 5.

4.1 Precontact Background

The cultural evolutionary changes described in the chronology of Ames and Maschner (1999:57–112) are based on technological advancement in the context of increasing sedentism and demographic growth. Their cultural chronology is divided into five periods: Paleo-Indian, Archaic, Early Pacific, Middle Pacific, and Late Pacific. Over this time, small nomadic groups reliant on general hunting and gathering subsistence strategies gradually shifted to more sedentary living, with permanent or semi-permanent winter villages and a seasonal round of specialized resources, focusing on certain abundant riverine and marine resources (Ames and Maschner 1999). A summary of their chronological sequence is provided in Table 4-1.

Table 4-1. Model of Precontact Change in the Puget Basin (after Ames and Maschner 1999:66).

Dates	Period	Land Use	Settlement	Subsistence	Technology
~13,800 B.C. to 10,500 B.C.	Paleo-Indian	Generalized marine, littoral, and/or terrestrial	Short-term use pit houses and shelters	Generalized marine, littoral, and/or terrestrial	Stone; bone, antler, and perishable materials likely
10,500 B.C. to 4,400 B.C.	Archaic	Generalized littoral, neritic, and terrestrial	Short-term use pit houses and shelters	Generalized littoral, neritic, and terrestrial	Stone; some bone and antler; other perishable materials likely
4,400 B.C. to 1,800 B.C.	Early Pacific	Littoral, neritic, and terrestrial	Increased sedentism in seasonal villages	Increased focus on littoral resources and expanded use of neritic resources	Increase in ground stone, bone, antler, and perishable materials

Table 4-1. Model of Precontact Change in the Puget Basin (after Ames and Maschner 1999:66).

Dates	Period	Land Use	Settlement	Subsistence	Technology
1,800 B.C. to A.D. 200/500	Middle Pacific	Neritic, littoral, and terrestrial	Winter villages of plank houses and seasonal camps	Increased focus on marine and riverine resources. Food storage technologies developed	A decrease in stone and diversification of tools and tackle of bone, antler, and perishable materials
A.D. 200/500 to A.D. 1775	Late Pacific	Neritic, littoral, and terrestrial	Large permanent villages and special use sites	Specialized marine, riverine, littoral, and terrestrial resource use and management. Extensive food storage	Tools and tackle of bone, antler, and perishable materials; very little stone

The earliest periods of human occupation in the Americas are not readily observed in coastal environments along the Puget Sound, due to the rise in sea levels at the end of the Pleistocene. As such, the earliest evidence of human occupation along the coast is likely to be under water. In other portions of North America, however, archaeologists have discovered evidence of human occupation beginning as early as 15,500 to 14,500 years ago, based on finds at Buttermilk Creek, Texas (Pringle 2011), and Meadowcroft Rockshelter, Pennsylvania (Adovasio et al. 1990), among others. In the Pacific Northwest, at the Manis site near Sequim, a mastodon skeleton with evidence of human hunting activity has been radiocarbon dated to 13,800 years ago (Waters et al. 2011). The mastodon was impaled with a bone spear point demonstrating the presence of human populations using technologies that were culturally related to Upper Paleolithic people of the Bering Strait area (Lawler 2011), although some remain critical of this find (Grayson and Meltzer 2015:184). A pre-Clovis dated occupation at Bear Creek in Redmond, Washington recovered large, concave-base points in contexts dating to 12,770–12,596 calibrated radiocarbon years B.P. (Kopperl et al. 2015). Corroboration for these early dates is found at the rock shelter site at Paisley Cave, Oregon, where human coprolites have been radiocarbon dated to between 12,750 and 14,290 years ago (Wolman 2008).

The Archaic period (circa 10,500 BC to 4400 BC) was a time of transhumant hunting and gathering with increasing emphasis on locally available resources. Artifact assemblages are characterized by temporally diagnostic lanceolate shaped forms, regionally called Olcott or Cascade points, and cobble implements (Kidd 1964). Bone and antler tools have also been found at sites dating to the Archaic period. It is toward the end of this phase that the coastlines of the Puget Sound islands would have begun to stabilize and a more modern climate regime would have been established.

The Pacific period (circa 4400 B.C. to A.D. 1775) is characterized by increasing local resource intensification (particularly directed toward salmon) and residential sedentism. Ames and Maschner (1999) suggest these traits evolved in three different sub-periods, characterized by demographic increase and increasing resource intensification (Ames and Maschner 1999:90, 94, 96). Semi-

subterranean pit houses and semi-permanent winter village adaptations developed during this period (Nelson 1990:483). In the Puget Sound, the majority of extant archaeological sites are coastal shell middens that date to the Pacific period.

4.2 Ethnographic Background

The AI is within the traditional territory of the Puyallup Indian Tribe (Haeberlin and Gunther 1930:9; Smith 1940a:6; Spier 1936:33) and was within the boundaries of the Puyallup Reservation in historic times (see Figure 2-1). Ancestors of the Puyallup peoples occupied villages along the banks of the Puyallup and White rivers, including their tributaries (e.g., Clay Creek, Clarks Creek, Stuck River, Carbon River, South Prairie Creek, and Vogt Creek), as well as on Commencement Bay, Vashon Island, Hylebos Creek, and Wapato Creek. Marion Smith (1940a:10) describes five villages in the vicinity of Commencement Bay. Earlier references (Haeberlin and Gunther 1930:9; Spier 1936:33) cite an additional village located at Brown's Point, on the north end of the bay. Hylebos Creek was an important waterway for the Tribe and their ancestors due to its proximity and connection to Commencement Bay. Puyallup villages were generally located on waterways, such as Hylebos Creek, and such locations near creeks may have been used for temporary camps during their annual subsistence harvests.

The Puyallup are classified as a Southern Lushootseed-speaking group of the Southern Coast Salish peoples (Smith 1940a:21; Suttles and Lane 1990). Southern Coast Salish social organization was one in which village and family groups were interconnected through kinship obligations and economic dependence, forming an extended kin group over a large geographical area (Smith 1940a:32-33). The indigenous settlement-subsistence system of the southern Puget Sound was tied to the area's river systems, with their abundant salmon and other fishery resources, temperate climate, and potential to facilitate transport along the waterways (Smith 1940a; Suttles 1990). The Puyallup people lived in villages composed of multifamily villages, which consisted of one or more cedar plank longhouses (Haeberlin and Gunther 1930:15; Smith 1941:203). These houses were constructed using cedar planks attached to wooden frames, the frames being composed of house posts and cross beams (Smith 1940a:9-12, 1940b). These villages were typically occupied nearly year-round and were seldom left completely vacant (Smith 1940b:5). At other times of the year, easily transported, temporary pole and mat structures provided shelter when family groups moved to various environmental zones to harvest resources, process them for storage, and then transport the supplies back to the permanent village.

While the primary food resource was salmon taken in the Puyallup River and its tributaries, the Puyallup also relied on wetland resources for medicinal plants, raw materials for making mats and baskets, and other food resources. Wetland plants with a variety of economic uses were gathered, such as cattails, for making mats to cover temporary shelters, the roots of Devil's Club for treating colds, skunk cabbage leaves for lining steaming pits, and crab apples to eat fresh or store for the

winter months. Land mammals, such as beaver, were also hunted or snared in swamps and wetlands (Smith 1940b:4).

4.3 Historic Background

European exploration of the Puget Sound area began in 1792, when Captain George Vancouver landed in Puget Sound to claim the land for King George III of Great Britain. However, a Euroamerican presence in the vicinity of the AI began at Fort Nisqually and the Hudson's Bay Company's (HBC) settlement in 1832 (Stilson 1991). This settlement was known as, and was located near the mouth of the Nisqually River, approximately 18 mi (28.8 km) southwest of the current location of the City of Milton (Bonney 1927; Stilson 1991). Charles Wilkes led an American exploration party further into the surrounding areas in 1841. The HBC stimulated development in the region that attracted explorers, fur traders, and their associates. The first real stimulus to Euroamerican settlement did not occur until the late 1840s, following the shift from British to American jurisdiction and the passage of the Donation Land Claim Act of 1850. The law allowed 320 acres of land to each white male citizen of at least eighteen years of age; if he was married, his wife was entitled to claim an additional 320 acres. Three years later, nearly 4,000 settlers resided in the southern Puget Sound region, and, in 1853, they convinced Congress to create the Washington Territory. The population was sufficient for Washington to achieve statehood by 1889 (Schwantes 1989:95-106). The influx of Euroamerican settlers after the 1860s resulted in conflict with Native Americans, who resented encroachment on their lands. The Donation Land Claim Act of 1850, which encouraged settlers to inhabit and cultivate some areas of the Puget Sound region not yet ceded, was a major cause of animosity. The subsequent territorial conflict known as the Indian Wars lasted from around 1855 until 1857 (Schwantes 1989:104-106).

Hylebos Creek is named after Father Hylebos (pronounced HYLA-BOE), a Catholic missionary and educator who founded the St. George's Indian School along its banks. The school stood about 1 mi northeast of the AI. The school educated both Native and Euroamerican girls and boys between the ages of 6 and 16. After graduating, the Native students would continue on at Cushman Indian School and the Euroamerican children would go on to Stadium High in Tacoma. The St. George's school accepted Protestant students as well as Catholics (Caster 2003). Father Hylebos is notable for numerous humanitarian accomplishments in Washington and the Tacoma area. He was instrumental in trying to prevent Chinese exclusion. His efforts to convince Euroamericans that they should let Chinese immigrants remain were unsuccessful, but he was personally instrumental in insuring their safe passage out of the Tacoma area.

Euroamerican settlement of the area presently known as Milton began in the 1880s when a mill was constructed on the forested ridge overlooking the Puyallup River valley, at the present intersection of Porter Way and Kent Street. Homesteaders and lumber camp workers, who furnished timber to feed the mill, erected shacks and established the area known as "Mill Town." A group led by T.B. Wallace formed the Milton Land Company and purchased land from the Northern Pacific Railway

from private individuals. The company filed the first town plat, offering land for as little as $29 an acre. The Milton Land Company operated a free bus out of Tacoma that took potential customers on a tour of the new city (Olive 1982:3). The community name became Milton after the two-word moniker was rejected by the U.S. Postal Service (Olive 1982:4). On July 31, 1905 the first post office opened under the management of Post-Master Charles Herman. Two years later Milton became a city, when the community voted 46 to 18 in favor of incorporation. By 1915, Milton had grown to a population of 250 persons (Adams 1948:10; Olive 1982:6). Many of Milton's residents found employment in Tacoma's industries, while others stayed home keeping small farms and picking berries. During the Depression, many worked for the Works Progress Administration (WPA) building sidewalks (Adams 1948, Johnson 2006, Olive 1982). The introduction of the Interurban Railway in 1902, running through Milton between Seattle and Tacoma, helped Milton's growth. Milton gradually shed its dependency on timber and grew into a bedroom community for those who commuted to the larger, surrounding cities to work.

The remainder of this historical context below was provided by CDM Smith and is based on their research using historical aerial photographs, documents at Ecology, and a title search of the property. I-5 was constructed across the AI in 1961. Hylebos Creek was re-routed and channelized to its current location as part of this construction. The freeway construction and re-routing of Hylebos Creek cut the site off from the adjoining agricultural land to the east. Freeway construction also did not make a provision for continued use of 12th Street East, so it was abandoned at this time.

Fill was imported to bring the site up to grade with Pacific Highway East. This fill included industrial waste from USG's Tacoma, Washington plant. From 1959 through 1973, the USG Tacoma plant used slag from the Asarco Copper Smelter as a raw material for mineral fiber production. The Asarco smelter operated at nearby Ruston from 1890 to 1986. Asarco's copper smelting process concentrated arsenic in the slag. Baghouse dust and off-specification product from the Tacoma plant were reportedly used as fill at the Highway 99 site from 1971 through 1973. USG did not own the property during the period when this fill was used.

Currently, four principal businesses operate on the site: Freeway Trailer, Kanopy Kingdom, General Trailer, and Linwood Custom Homes. The northern property boundary of Linwood Custom Homes marks the northern end of the site. The western edge of the site is the boundary between these businesses and Pacific Highway East. I-5 marks the eastern boundary of the site. Hylebos Creek and 70th Avenue East mark the southern boundary of the site. The western paved portion of the site is relatively flat, but drops off sharply east of the paved area where the surface slopes down either to Hylebos Creek or a roadside ditch.

In the early 1980s, USG became aware of the association between Asarco slag and arsenic contamination. Subsequently, USG purchased what is now the Kanopy Kingdom property from Partner's Financial Incorporated on August 18, 1982. That same year USG voluntarily approached Ecology to negotiate an administrative process to govern the removal of industrial fill from the property. Soil and groundwater cleanup standards had not been established in Washington State at

this time. Accordingly, Agreed Order No. DE 84-506 established project-specific arsenic cleanup standards for soil (0.5 milligrams per liter [mg/L]) by the EP Toxicity (leaching) method, and groundwater (0.5 mg/L). The 1984 Order also required USG to conduct post-cleanup groundwater monitoring.

Cleanup of the Highway 99 site occurred between October 12, 1984 and January 25, 1985. Detailed records of the cleanup, termed the source removal action, have not been located. Ecology estimated that 20,000 to 30,000 cubic yards of material was excavated and disposed of off-site. Native soil exceeding the project-specific cleanup standard was reportedly excavated in the southern portion of the property in the vicinity of monitoring well 99-1. This is referred to as the contaminant source area. Ecology stated that soil cleanup standards for the project were met. This excavation was subsequently filled with borrow material from off-site.

A review of historical aerial photographs shows that the property was cleared and re-graded in June 1985 (approximately 5 months after completion of the source removal action). The site subsequently underwent commercial development and by 1989 had been developed to its current configuration. USG maintained responsibility for verification monitoring, as specified in Agreed Order No. DE 87-506 issued in 1987. Post-source removal action verification groundwater sampling was performed by USG from June 1985 to April 2006.

The Model Toxics Control Act (MTCA) was enacted and went into effect in March 1989. MTCA governs state-led environmental cleanups in Washington State. In 1991, Ecology established MTCA 'Method A' arsenic cleanup levels of 20 milligrams per kilogram (mg/kg) for soil and 5 micrograms per liter (µg/L) for groundwater.

In 2006, Ecology required that USG conduct a soil and groundwater assessment for arsenic in the vicinity of well 99-1. This assessment showed that arsenic in soil and groundwater exceeded MTCA Method A cleanup standards. On March 30, 2007, Ecology sent USG a letter naming USG as a potentially liable party for the release of arsenic at the Highway 99 site. This led to issuance of Agreed Order DE 6333 in 2009.

Under Agreed Order DE 6333, USG performed a remedial investigation/feasibility study and prepared a draft cleanup action plan (CAP). The selected remedy is documented in the CAP. Arsenic impacted soil and groundwater can be treated in-situ by solidification/chemical stabilization techniques (soil) and chemical oxidation (groundwater). Monitored natural attenuation will be used to ensure that arsenic concentrations in groundwater decline over time. Contaminated sediment will be excavated and disposed off-site. This remedy is included in the current the current AO DE 11099.

5. Expectations for Precontact or Historic Cultural Resources

5.1 Expectations

Environmental factors (e.g., close proximity to water and available food and material resources) would have affected how humans used the landscape in precontact or ethnographic times. Examination of the environmental variables and ethnographic and historic records provides information on what cultural resources may be expected within the AI and surrounding vicinity. The information HRA reviewed suggests a moderate to high probability of intact archaeological remains in the vicinity of the AI.

The AI is located at the foot of hill on the banks of a perennial drainage (Hylebos Creek) at the edge of the floodplains of the Puyallup River delta. This location may have been attractive to precontact and ethnographic period groups utilizing it for fishing, hunting, gathering, travel, and as a short-term residence. This Creek was re-routed and channelized within the AI as part of the construction of I-5. Documented ethnographic places and a nearby NRHP-eligible precontact archaeological site in the vicinity of the AI heighten the likelihood that precontact archaeological deposits could exist within the AI.

Many types of archaeological materials may be encountered during the proposed activities. These may include, but are not limited to:

- Precontact archaeological materials and features (ethnographic-period materials could include artifacts or features the same as those for precontact timeframes with the inclusion of some historic-period items).
    - Stone tools and flaking debris.
    - Antler or bone fragments (potentially with cut marks made by tools other than saws).
    - Charcoal concentrations and darkened or reddened earth.
    - FMR, either singly or in clusters, which could indicate the presence of hearths or processing features.
    - Food and refuse materials from plants and animals.
- Historic-period archaeological materials.
    - Remnants of logging machinery or implements.

- Low-fired and bisque ceramics with subdued colors, or blue/pink willow-like design; thick-bodied pieces indicating crockery.
- Non-tempered glass; amethyst colored glass; stopper-topped glass jars or bottles; press-capped (cork gasket liner) heavy-walled soda or liquor bottles (not twist-top, thin-walled); zinc and vitreous glass-lidded glass canning jars with colored body.
- Miscellaneous fragments of metal (or plated) clothing closures (hooks and eyes, and suspender fittings, but not zippers), shell buttons, fragments of Bakelite houseware, celluloid.
- Sawed animal bone and fruit pits.
- Enameled ironware.
- Punch-opened and solder-sealed beverage cans; solder-sealed food tins; (not thin-walled aluminum and welded-steel cans).
- Older automotive parts.
- Knob-and-tube electrical insulators.
- Construction or structural materials such as concrete, milled lumber, brick, and metal rebar, hardware, and implements.

Ethnographic-period/Contact-era artifacts would be similar to those associated with precontact sites, with the potential inclusion of Euroamerican manufactured or trade goods (e.g., iron tools, glass or ceramic beads or vessels).

6. Inadvertent Discovery Plan

6.1 Procedures for the Inadvertent Discovery Of Cultural Materials

In the event that archaeological deposits are inadvertently discovered during soil removal in any portion of the AI, ground-disturbing activities in the vicinity of the find should be halted immediately, the CDM Smith Project Manager (on behalf of USG) and Ecology should be notified. Ecology would then contact DAHP and the interested Tribes, as appropriate. The area of work stoppage will be large enough to provide for the security, protection, and integrity of the discovery.

Ecology will take appropriate steps, including, when necessary, consulting with a Professional Archaeologist (i.e., an archaeologist meeting the qualifications set out by the Secretary of the Interior in Code of Federal Regulations, 36 CFR Part 61) to determine whether the discovery is an archaeological site or isolated cultural item. The onsite supervisor will take reasonable steps to protect the discovery by installing a temporary protective buffer measuring at least 50 ft radius from the discovery location. Work in the immediate area will not resume until treatment of the discovery has been completed or the discovery has been adequately protected.

In the event of an inadvertent discovery of archaeological materials, Ecology will enact the following IDP procedures:

- Ecology will contract with a Professional Archaeologist to examine the find, determine whether the discovery is an archaeological site, and assess its integrity.
- The project involves the cleanup of hazardous substances (i.e., arsenic). Therefore, the project must also comply with regulations under the Occupational Health and Safety Administration (OSHA) related to the cleanup of hazardous waste (29 CFR Parts 1910.120 and 1926.65) and Washington State's Chapter 296-843 WAC among other environmental regulations. If an archaeologist is required on-site, they must have the appropriate training, assumed to be 40-hour HAZWOPER training, along with a site-specific orientation to the project's hazards.
- Ecology will authorize the contractor to work only outside of the 50-ft radius to protect the find and archaeologist.
- If the archaeologist determines that the find is a precontact archaeological site or potentially significant historic-period archaeological site, Ecology will take reasonable steps to further protect the discovery site. Ecology will install a physical barrier (i.e., exclusionary fencing) and will prohibit all machinery, other vehicles, and unauthorized individuals from crossing the barrier.

- Ecology will inform DAHP and the cultural resources representative from the affected Tribes in as expeditious manner as feasible after the archaeologist has made an initial recommendation as to the nature and potential significance of the site.
    - Under RCW 27.53, all precontact archaeological sites are protected regardless of significance or eligibility for national, state, and/or local historic registers. A determination of eligibility for listing in the NRHP by DAHP must be obtained for historic-period resources.
    - It is presumed that historic-period resources are eligible for listing in the NRHP until and unless DAHP makes the determination that they are not.

6.2 Archaeological Treatment Measures

If archaeological materials that warrant further investigation are discovered, the following treatment measures may take place after the appropriate personal protective equipment (PPE) has been determined:

- Treatment measures may include mapping, photography, subsurface testing, sample collection, and/or other activities, as determined appropriate by DAHP and Tribal representative. Prehistoric and historic-period resources will require a permit to disturb under RCW 27.53. Appropriate treatment measures will be stipulated under a permit obtained from DAHP.
- Ecology will work with the appropriate Tribe for discoveries of precontact materials. The consulting parties will also include DAHP, and Pierce County or local municipalities, as appropriate (Appendix A). Ecology will contact the appropriate parties, as soon as practical, to seek consultation regarding the National Register-eligibility of the discovery. If the discovery is an eligible resource, the consulting parties will decide upon an appropriate form of treatment. Treatment measures may include mapping, photography, limited probing, and sample collection, or other activities.

  Ecology will arrange for the implementation of the treatment measures agreed upon by Ecology, the Washington State Historic Preservation Officer (SHPO), and the affected Tribes. If treatment measures determined by the consulting parties include sample collection, the archaeological resources will be examined by the archaeologist and possibly analyzed by specialists, as needed and appropriate.
- Cultural features, horizons, and artifacts detected in buried soils may require further evaluation using hand-dug test units to clarify aspects of integrity, stratigraphic context, or feature function. Test units will be used only when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's potential to address significant research domains. Units may be dug in controlled fashion to expose

features, collect radiocarbon or animal/plant macrofossil samples from undisturbed contexts, or interpret complex stratigraphy. A test excavation unit or small trench might also be used to cross-section a feature to determine if an intact occupation surface is present. Excavations will be conducted using industry-standard techniques for controlling provenience of recovered remains.

- Soils excavated for purposes of cultural resources investigation will be screened through ¼-in mesh. Spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock will be recorded on a standard form. Test excavation units will be recorded on unit level forms, which include plan maps for each excavated level and material type, number, and vertical provenience (depth below surface and stratum association where applicable) for all artifacts recovered from the level. Radiocarbon and macrofossil samples will be taken from intact subsurface features exposed by shovel/auger probes or test units. A stratigraphic profile will be drawn for at least one wall of each test excavation unit.
- All prehistoric and historic artifacts collected from the surface and from probes and excavation units will be analyzed, catalogued, and temporarily curated. Ultimate disposition of cultural materials will be determined in consultation with the SHPO and affected Native American Tribes. The preferred repository is the Burke Museum of Natural History and Culture.
- Work in the immediate area will not resume until treatment of the discovery has been completed or the discovery has been adequately protected. Activities that have the potential to disturb cultural resources outside the AI should not proceed prior to a cultural resources review of potential adverse effects in the new area.
- If human remains are discovered, the procedures listed in Section 6.3 will apply.

6.4 Treatment Measures For The Discovery of Human Remains

Any human remains that are discovered during implementation of the Project will be treated with dignity and respect. All personnel that examine the remains will have had 40-hour HAZWOPER training and/or an 8-hour refresher course as appropriate. They will follow a Health and Safety Plan (HASP) prepared for their activity and will wear the appropriate PPE.

If ground-disturbing activities encounter human skeletal remains during the course of construction, then all activity that may cause further disturbance to those remains **must** cease. The CDM Smith Project Manager (on behalf of USG) and Ecology will secure the area of the find and protect it from further disturbance. In addition, the finding of human skeletal remains **must** be reported to the Pierce County Medical Examiner **and** the Pierce County Sherriff in the most expeditious manner

possible (see Appendix A for contact information). The remains should not be touched, moved, or further disturbed.

The Pierce County Medical Examiner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the Pierce County Medical Examiner determines the remains are non-forensic, they will report that finding to DAHP. DAHP will then take jurisdiction over those remains and report them to the appropriate cemeteries and affected tribes. The State Physical Anthropologist will make a determination of whether the remains are Indian or non-Indian, and report that finding to any appropriate cemeteries and the affected tribes. DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

7. References Cited

Adams, Vera S.
1948 Early History of Milton Washington. Accessed Electronically Dec. 30, 2008. http://www.cityofmilton.net/files/library/aa832cd43dc95e88.pdf

Adovasio, J. M., J. Donahue, and R. Stuckenrath
1990 The Meadowcroft Rockshelter Radiocarbon Chronology 1975–1990. *American Antiquity* 55(2):348–354.

Ames, K. M, and H. D. G. Maschner
1999 *Peoples of the Northwest Coast: Their Archaeology and Prehistory*. Thames and Hudson, London, England.

Bonney, William
1927 History of Pierce County, Washington. Pioneer Historical Publishing Company, Chicago.

Brubaker, Linda B.
1991 Climate Change and the Origin of Old-Growth Douglas-Fir Forests in the Puget Sound Lowland. In *Wildlife and Vegetation of Unmanaged Douglas-Fir Forests*, edited by Leonard F. Ruggiero, Keith B. Aubry, Andrew B. Carey, and Mark F. Huff, pp. 17–24. U. S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, General Technical Report PNW- GTR-286. Portland, Oregon.

Caster, Dick
2003 Father Hylebos, St. George's Indian School and Cemetery and St. Claire's Mission Church Historical Society of Federal Way.

Chambers, Jennifer and Garth Bawden
2014 *Cultural Resources Assessment for the City of Fife's State Route (SR) 99 Pedestrian Improvements Project, Pierce County, Washington* Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

Dellert, Jenny and Derek Shaw
2009 *Letter Report: Addendum to "Archaeological Monitoring and Cultural Resources Assessment for the B & L Woodwaste Site, Fife, Pierce County, Washington*." Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

del Moral, Roger
1997 Plant Communities of Western Washington. University of Washington Press, Seattle.

Department of Archaeology and Historic Preservation (DAHP)
2016 Cemetery Detail Report St. George's Cemetery Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

n.d. Washington State Heritage Barn Register, Charles Anderson Farm 45PI1205. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

Dragovich, Joe D., Patrick T. Pringle, and Timothy J. Walsh
1994 Extent and Geometry of the Mid-Holocene Osceola Mudflow in the Puget Lowland-Implications for Holocene Sedimentation and Paleogeography. Washington Geology Vol. 22 (3):3-26.

Early, Amber
2004 State of Washington Archaeological Site Inventory Form 45PI1408. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

Ferland, Sarah
2010 *Cultural Resources NEPA Re-Evaluation for the 70th Avenue East and Valley Avenue East Project, Fife, Washington*. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

Franklin, Jerry, and C. T. Dyrness
1973 *Natural Vegetation of Oregon and Washington*. USDA Forest Service General Technical Report PNW-8, Portland, Oregon.

Galster, R. W., and W. T. Laprade
1991 Geology of Seattle, Washington, United States of America. *Bull. Assoc. Eng. Geol.* 18:235–302.

Grayson, Donald, and David Meltzer
2015 Revisiting Paleoindian Exploitation of Extinct North American Mammals. *Journal of Archaeological Science* 56:177–193.

Haeberlin, H., and E. Gunther
1930 The Indians of Puget Sound. *University of Washington Publications in Anthropology* 4(1):1–83. Seattle.

Hilbert, Vi, Jay Miller, and Zalmai Zahir
2001 *Puget Sound Geography: Original Manuscript from T. T. Waterman*. Edited with additional material from Vi Hilbert, Jay Miller, and Zalmai Zahir. Lushootseed Press, Seattle, Washington.

Historicaerials.com
2016 Online resource, www.historicaerials.com, accessed July 2016.

Hollenbeck, J.L.
1987 A Cultural Resource Overview: Prehistory, Ethnography and History: Mt. Baker-Snoqualmie National Forest. U.S. Dept. of Agriculture, Forest Service, Pacific Northwest Region. Portland.

Johnson, Kay
2006 Milton As I Remember It. Electronic document, December 30, 2008. http://www.cityofmilton.net/files/library/8ebc7922b5ea56e0.pdf, July 2016.

Kauhi, T. C., and J. L. Markert
2009 *Washington Statewide Archaeology Predictive Model Report*. GeoEngineers, Inc., Tacoma, Washington. Prepared for the Department of Archaeology and Historic Preservation, Olympia, Washington.

Kidd, R. S.
1964 A Synthesis of Western Washington Prehistory from the Perspective of Three Occupation Sites. Unpublished Master's Thesis, Department of Anthropology, University of Washington, Seattle.

Kopperl, R. E., C. J. Miss, and C. M. Hodges
2010 *Results of Testing at the Bear Creek Site 45-KI-839, Redmond, King County, Washington.* On file at the Department of Archaeology and Historic Preservation, Olympia, Washington.

Larrison, E. J.
1968 Washington Birds: Their Location and Identification. Seattle Audubon Society, Seattle.

Lawler, Andrew
2011 Pre-Clovis Mastodon Hunters Make a Point. *Science* 334(6054):302.

Luttrell, Charles
2001 Washington Archaeological Site Inventory Form. 45PI488. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

2004 *Cultural Resource Investigations for the Washington State Department of Transportation's SR 167: Puyallup to SR 509 Project, Pierce County, Washington*. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

2007 *Cultural Resources Investigations for the City of Fife's 20th Street East Widening Project, Pierce County, Washington*. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

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

Metsker, Charles F.
1960 Metsker's Atlas of Pierce County Washington. Township 20 N., Range 5 E., Carson Chas. F. Metsker, Civil Engineer, Seattle, Washington. Electronic document, http://www.historicmapworks.com/Map/US/1260080/, accessed July 2016.

Nelson, Charles M.
1990 Prehistory of the Puget Sound Region. In *Northwest Coast*, edited by Wayne Suttles, pp. 481–484. *Handbook of North American Indians*, Vol. 7, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Olive, Shirley
1982 Milton Washington the Early Days. Electronic document. http://www.cityofmilton.net/files/library/2de81d38e1036303.pdf, accessed November 23, 2008.

Orr, Elizabeth L. and William N. Orr
1996 Geology of the Pacific Northwest. The McGraw-Hill Companies, Inc. New York.

Parvey, Michele
2011 *Addendum to the Cultural Resources Assessment for the 70th Avenue East and Valley Avenue East Project, Fife, Washington. NWAA/SWCA Project No. 21007*. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

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

Pringle, Heather
2011 Texas Site Confirms Pre-Clovis Settlement of the Americas. *Archaeology* 331(March 25):1512.

Pringle, P.T. and T.J. Walsh
1994 Extent and Geometry of the mid-Holocene Osceola Mudflow in the Puget Lowland – Implications for Holocene Sedimentation and Paleogeography. Washington Geology 22:3-26.

Ruby, R. H., and J. A. Brown
1992 *A Guide to the Indian Tribes of the Pacific Northwest Revised Edition*. University of Oklahoma Press, Norman, Oklahoma, and London, England.

Schwantes, Carlos A.
1989 *The Pacific Northwest: An Interpretive History*. University of Nebraska Press, Lincoln.

Sharpe, James, James Bard and Jessica Feldman
2009 *Tacoma/Pierce County HOV Program I-5: Port of Tacoma Road to King County Line - HOV Historic, Cultural, and Archaeological Resources Discipline Report*. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

Shaw, Derek, Jennifer Gilpin, Brent Hicks
2009 *Archaeological Monitoring and Cultural Resources Assessment for the B & L Woodwaste Site, Fife, Pierce County, Washington*. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

Shong, Michael
2011a *Results of Cultural Resources Documentation and Monitoring at the Fife Library Site, Pierce County, Washington. NWAA/SWCA Report No. 21445*. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

2011b State of Washington Archaeological Site Inventory Form 45PI1235. Document available at the Department of Archaeology and Historic Preservation (DAHP), Olympia, Washington.

Smith, Marian W.
1940a The Puyallup-Nisqually. Columbia University Press, New York, New York.

1940b The Puyallup of Washington. In Acculturation in Seven American Indian Tribes, Ralph Linton, ed. D. Appleton-Century Company, Inc., New York.

Spier, Leslie
1936 Tribal Distribution in Washington. General Series in Anthropology, No. 3. George Banta Publishing, Menasha, Wisconsin.

Stilson, M. L.
1991 A Data Recovery Study of 45-PI-405, The 1843 Fort Nisqually Village at Northwest Landing, Pierce County, Washington. Prepared for Weyerhaeuser Real Estate Company Land Management Division, Tacoma by Western Heritage, Olympia, Washington.

Suttles, W.
1990 Environment. In: *Northwest Coast,* edited by Wayne Suttles, pp. 16–29. Handbook of North American Indians, Vol. 7, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Suttles, W., and B. Lane
1990 Southern Coast Salish. In *Northwest Coast*, edited by Wayne Suttles, pp. 485–502. *Handbook of North American Indians*, Vol. 7, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Unites States Department of Agriculture
2013 USDA Soil Survey. Electronic document, http://websoilsurvey.sc.egov.usda.gov/app/WebSoilSurvey.aspx, accessed July 2016.

United States Geological Survey (USGS)
1897 USGS Topographical Map Explorer: Tacoma, Pierce County, Washington. Electronic document, http://historicalmaps.arcgis.com/usgs/, accessed July 14, 2016.

1900 USGS Topographical Map Explorer: Tacoma, Pierce County, Washington. Electronic document, http://historicalmaps.arcgis.com/usgs/, accessed July 14, 2016.

1941 USGS Topographical Map Explorer: Tacoma South, Pierce County, Washington. Electronic document, http://historicalmaps.arcgis.com/usgs/, accessed July 14, 2016.

1958 USGS Topographical Map Explorer: Seattle, Washington. Electronic document, http://historicalmaps.arcgis.com/usgs/, accessed July 14, 2016.

1961 USGS Topographical Map Explorer: Puyallup, Pierce County, Washington. Electronic document, http://historicalmaps.arcgis.com/usgs/, accessed July 14, 2016.

1962 USGS Topographical Map Explorer: Puyallup, Pierce County, Washington. Electronic document, http://historicalmaps.arcgis.com/usgs/, accessed July 14, 2016.

1975 USGS Topographical Map Explorer: Puyallup, Pierce County, Washington. Electronic document, http://historicalmaps.arcgis.com/usgs/, accessed July 14, 2016.

1991 USGS Topographical Map Explorer: Puyallup, Pierce County, Washington. Electronic document, http://historicalmaps.arcgis.com/usgs/, accessed July 14, 2016.

United States Surveyor General (USSG)
1864 Township 20N, Range 5E, Willamette Meridian. Electronic document, http://www.glorecords.blm.gov/search/default.aspx , accessed January 14, 2016.

1874 Township 20N, Range 5E, Willamette Meridian Willamette Meridian. Electronic document, http://www.glorecords.blm.gov/search/default.aspx , accessed January 14, 2016.

1887 Township 20N, Range 5E, Willamette Meridian Willamette Meridian. Electronic document, http://www.glorecords.blm.gov/search/default.aspx , accessed January 14, 2016.

Washington State Department of Natural Resources
2016 Interactive geologic map, https://fortress.wa.gov /dnr/protectiongis/geology/ ?Theme=wigm, accessed July 2016.

Waters, M. R, T. W. Stafford Jr., H. G. McDonald, C. Gustafson, M. Rasmussen, E. Cappellini, J. V. Olsen, D. Szklarczyk, L. J. Jensen, M. T. Gilbert, and E. Willerslev
2011 Pre-Clovis Mastadon Hunting 13,800 Years Ago at the Manis Site, Washington. *Science* 334: 351–353.

Williams, R. W., R. M. Laramie, and J. J. Ames
1975 *Catalog of Washington Streams and Salmon Utilization, Volume 1, Puget Sound Region.* Washington State Department of Fisheries, Olympia.

Wolman, David
2008 Fossil Feces is Earliest Evidence of N. America Humans. *National Geographic News*. Electronic document, http://news.nationalgeographic.com/news/2008/04/080403-first-americans.html, accessed August 2015.

Appendix A. Contact List

Washington State Department of Ecology
Jason Landskron, Site Manager
300 Desmond Drive
Lacey, WA 98503
Telephone: (360) 407-6388
Email: jason.landskron@ecy.wa.gov

CDM Smith
Alan Carey, Project Manager
14432 SE Eastgate Way, Suite 100
Bellevue, WA 98007
Telephone: 425.519.8306
Cell: 206.427.8257
Email: CareyAD@CDMSmith.com

Archaeological Consultant
Historical Research Associates, Inc. (HRA)
1940 Third Avenue, Suite 240
Seattle, WA 98101
Lynn Compas, MA, Sr. Archaeologist
Telephone: (206) 343-0226
Cell Phone: (206) 660-7090
Jenny Dellert, MA, Project Archaeologist
Telephone: (206) 343-0226
Cell Phone: (206) 509-8526

Pierce County Sherriff Department
Paul A. Pastor, Sheriff
County-City Building
First Floor
930 Tacoma Ave. S.
Tacoma, WA 98402
Telephone: (253) 798-7530

Pierce County Medical Examiner
Thomas B. Clark, Chief Medical Examiner
3619 Pacific Avenue
Tacoma, WA 98418
Telephone: (253) 798-6494
Fax: (253) 798-2893

Native American Tribes
Puyallup Tribe
Brandon Reynon, Cultural Resources 3009
East Portland Avenue Tacoma, WA 98404 P/
253-573-7986
brandon.reynon@puyalluptribe.com

Muckleshoot Indian Tribe
Laura Murphy, Cultural Resources
39015 172nd Avenue SE Auburn, WA 98092
Telephone: 253-876-3272
Email: laura.murphy@muckleshoot.nsn.us

Nisqually Tribe
Jackie Wall & Annette Bullchild,
Tribal Historic Preservation Office
4820 She-Nah-Num Drive SE Olympia, WA
98513-9105
Telephone: 360-456-5221x2180
Telephone: 360-456-5221x1106
Email: Wall.jackie@nisqually-nsn.gov
Email: Bullchild.annette@nisqually-nsn.gov

Steilacoom Indian Tribe
Danny K. Marshall, Chair 1515 Lafayette St.
Steilacoom, WA 98388
Telephone: 253-584-6308
Email: steilacoomtribe@msn.com

Washington State Department of Archaeology and Historic Preservation (DAHP)
State Archaeologist
Dr. Rob Whitlam, PhD
PO Box 48343
Olympia, WA 98501
Telephone: (360) 586-3080
Cell Phone: (360) 890-2615
Email: Rob.whitlam@dahp.wa.gov

DAHP Local Government Archaeologist
Gretchen Kaehler, MA
Telephone: (360) 586-3088
Cell Phone: (360) 628-2755
Email: Gretchen.Kaehler@dahp.wa.gov

DAHP State Physical Anthropologist
Dr. Guy Tasa, Ph.D.
Telephone: (360) 586-3534
Cell Phone: (360) 790-1633
Email: Guy.Tasa@dahp.wa.gov