CULTURAL RESOURCES REPORT COVER SHEET

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Title of Report: Archaeological Inventory for the University of Washington Burke-Gilman Trail, University Bridge to Brooklyn Avenue NE (Neighborhood Reach) Segment, City of Seattle, King County, Washington

Date of Report: March 2014

County(ies): King Section: 17 Township: 25N Range: 4E

Quad: SE Acres: 1.2

PDF of report submitted (REQUIRED) ☒ Yes

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

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

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

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

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

DAHP Archaeological Site #:
None

- 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.

Archaeological Inventory for the University of Washington Burke-Gilman Trail, University Bridge to Brooklyn Avenue NE (Neighborhood Reach) Segment, City of Seattle, King County, Washington

Submitted to:
EA Engineering Science and Technology, Inc.

Submitted by:
Historical Research Associates, Inc.
Alexander E. Stevenson, MS
Kainoa Little

Seattle, Washington
March 2014

Historical
Research
Associates, Inc.

This report was prepared by HRA Principal Investigator Alexander E. Stevenson, MS, and Kainoa Little, BA. Mr. Stevenson meets the Secretary of the Interior's professional qualifications standards for archaeology. This report 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 report should be submitted to the appropriate state and local review agencies for their comments prior to the commencement of the project.

Executive Summary

The University of Washington (UW) is planning to widen the Burke-Gilman Trail between the University Bridge and Brooklyn Avenue NE (Project). The Project is intended to provide increased space for this high traffic portion of the Burke-Gilman Trail. Limited ground disturbance is anticipated during the trail widening and will likely not exceed 2 feet in depth.

EA Engineering, Science and Technology, Inc. (EA), has overseen the management of the environmental review of this Project for the UW. In April of 2013, EA contracted with Historical Research Associates, Inc. (HRA), to conduct an archaeological inventory of the Area of Potential Effects (APE). Currently, funding for the Project is pending; however, it is anticipated that the project will receive funds from the Federal Highway Administration (FHWA), which are administered by the Washington State Department of Transportation (WSDOT). The use of federal funds on projects requires compliance with Section 106 of the National Historic Preservation Act (NHPA). The Project is not expected to affect the built environment; as such, no architectural inventory was conducted within the APE.

Archival research indicated a number of Native American place names in the vicinity of the APE. Additionally, past construction and development activities associated with the Alaska–Yukon–Pacific Exposition (AYPE) and the growth of the UW and the City of Seattle have greatly modified and disturbed the landscape within the APE.

An archaeological inventory was conducted by HRA archaeologists on December 17, 2013. Many subsurface utilities were marked along the APE. Sediments observed in shovel probes were indicative of disturbed glacial sediments. No archaeological resources were observed in the APE and the level of disturbance within the APE makes their presence unlikely. However, archaeological isolates may be found in disturbed contexts.

Despite the APE's proximity to known ethnographic sites and the nearby presence of a precontact archaeological isolate, HRA recommends that no further archaeological work is necessary for this project because of the high degree of disturbance noted during surface and subsurface survey, as well as the limited extent of ground disturbance. However, if the project undergoes significant design changes, additional archaeological work may be necessary.

Table of Contents

List of Figures

List of Tables

1. Introduction and Project Description

The University of Washington (UW) is planning to widen the Burke-Gilman Trail between the University Bridge and Brooklyn Avenue NE (Project) (Figure 1-1). The Project is intended to provide increased space for this high traffic portion of the Burke-Gilman Trail. Limited ground disturbance is anticipated during the trail widening and will likely not exceed 2 feet (ft) in depth.

EA Engineering, Science and Technology, Inc. (EA), has overseen the management of the environmental review of this project for the UW. In April of 2013, EA contracted with Historical Research Associates, Inc. (HRA), to conduct an archaeological assessment of the Area of Potential Effects (APE).

1.1 Regulatory Context

Currently, funding for the Project is pending; however, it is anticipated that the Project will receive funds from the Federal Highway Administration (FHWA), which are administered by the Washington State Department of Transportation (WSDOT). The use of federal funds on projects requires compliance with Section 106 of the National Historic Preservation Act (NHPA).

1.2 Area of Potential Effects

The APE is defined here as the horizontal and vertical extent of ground disturbance and modification (Figure 1-2). The Project is planned to extend for a total of 1,050 ft from the University Bridge and Brooklyn Avenue NE. The Burke-Gilman Trail is currently approximately 12 ft wide in this area, but will be widened to approximately 24 ft by this Project. Ground disturbance is not expected to exceed 2 ft in depth.

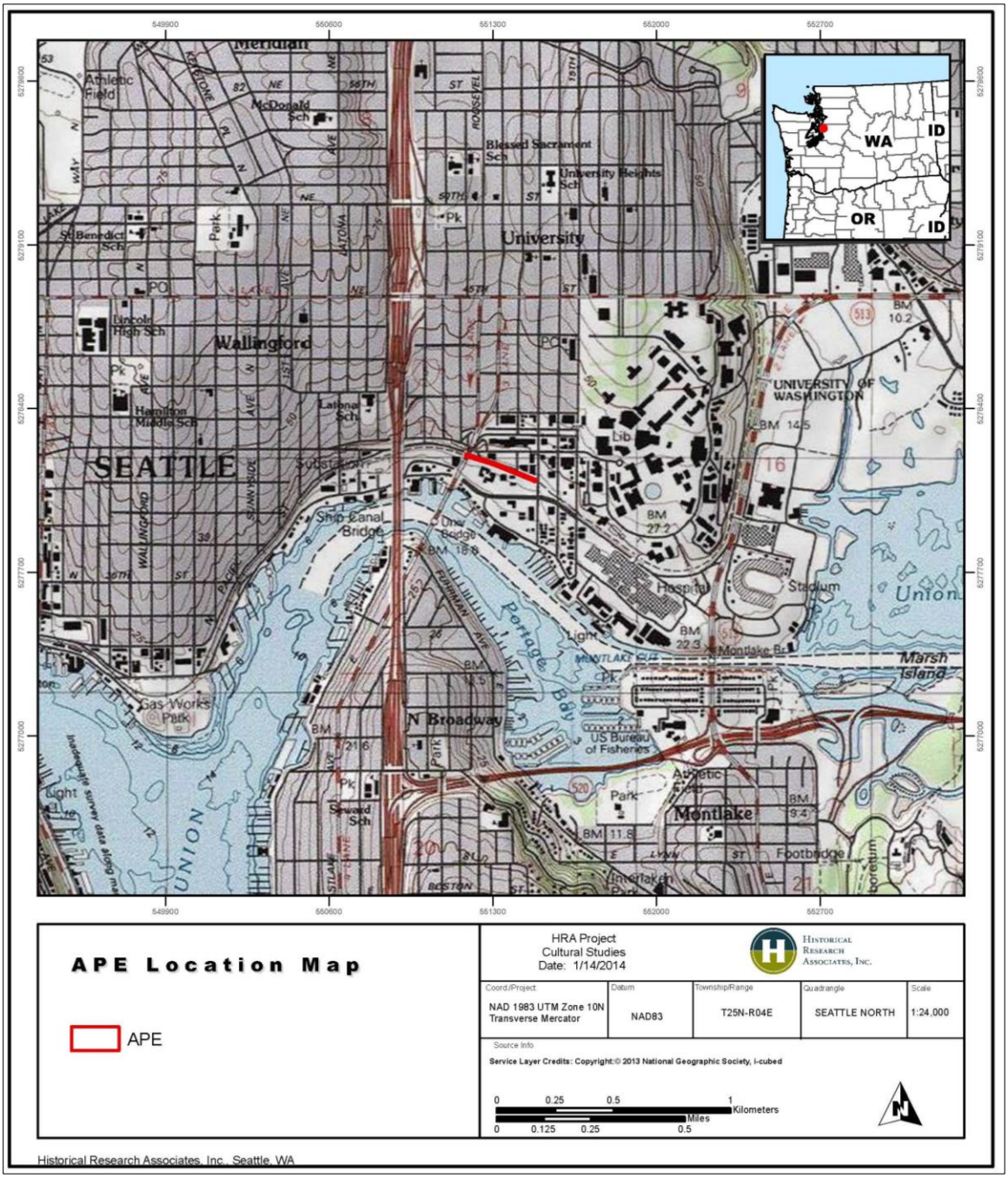

Figure 1-1. Location of the APE and vicinity.

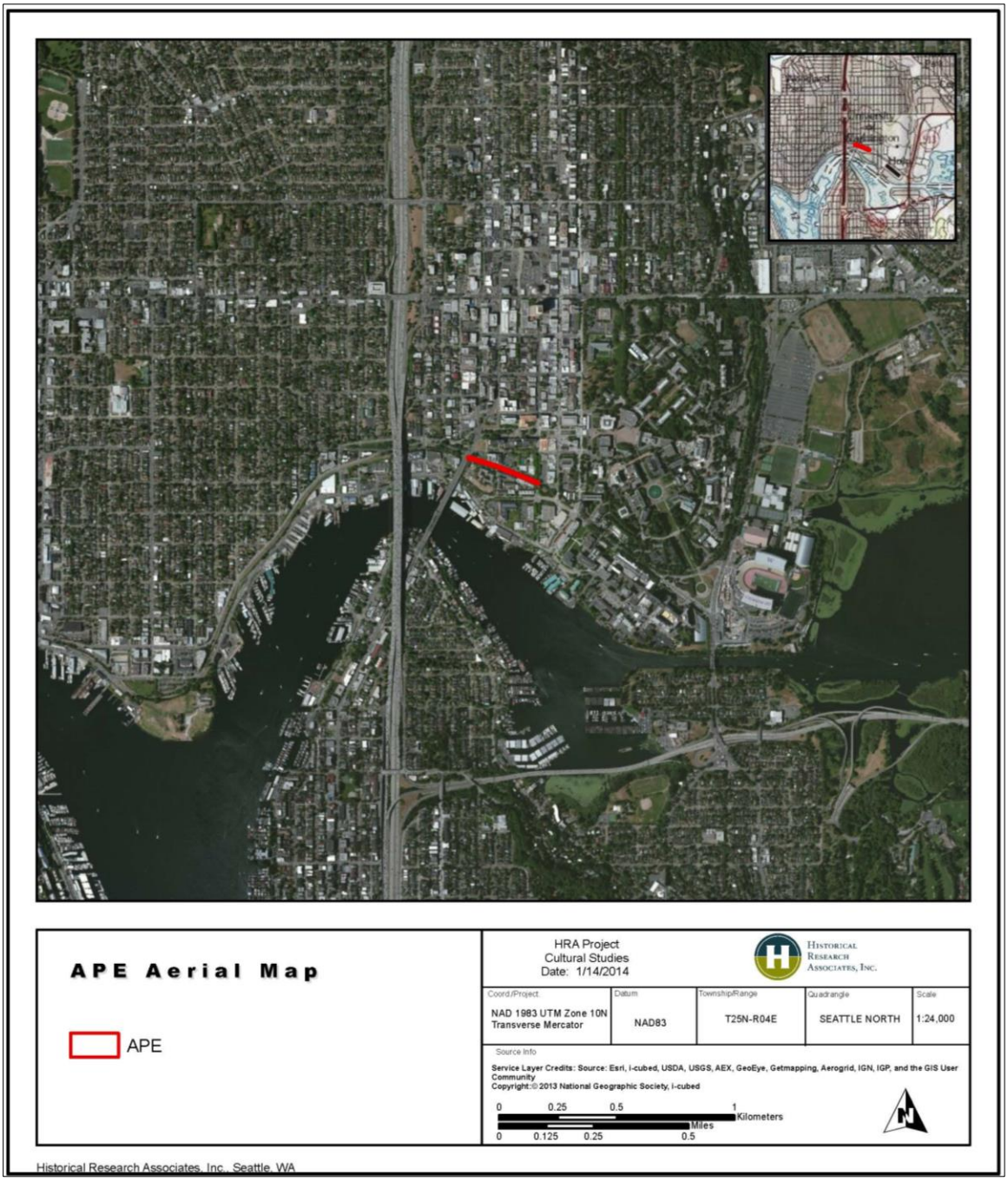

Figure 1-2. Location of the APE on Aerial Photograph.

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 cultural resource surveys and known cultural resources in the vicinity of a project is important for understanding how intensively work has been conducted in the area. This archival research is necessary for developing expectations for this Project which will be outlined in Section 5.

2.1 Research Methods and Materials Reviewed

HRA archaeologist Kainoa Little conducted an archival record search for records pertaining to locations within ½-mile of the APE. Mr. Little searched the Department of Archaeology and Historic Preservation's (DAHP's) online database (WISAARD) for archaeological site records, cultural resource survey reports, historic property inventory (HPI) forms, historic register information, and cemetery records. A statewide archeological predictive model on DAHP's WISAARD was reviewed for probability estimates for archaeological resources, and to aid in developing the field strategy.

2.2 Archival Research Results

Fourteen previous cultural resource studies were conducted within ½ mi of the Project (Table 2-1).

Table 2-1. Previous Cultural Resources Studies within ½ mi of the APE.

Reference	NADB #	**Title**	**Distance from APE**	**Cultural Materials Identified Within or Adjacent to the Project**
Trudel 2004	1343204	*Letter to Merideth Redmon Regarding Final Archaeological Monitoring of Geotechnical Borings for the Proposed University/ Densmore CSO Control System Improvements Project*	Approximately ¼ mi west	None
Courtois et al. 1998	1339816	*Sound Transit Central Link Light Rail Draft Environmental Impact Statement Historic and Archaeological Technical Report*	Adjacent	None

Table 2-1. Previous Cultural Resources Studies within ½ mi of the APE.

Reference	NADB #	**Title**	**Distance from APE**	**Cultural Materials Identified Within or Adjacent to the Project**
Courtois et al. 1999	1339836	*Central Link Light Rail Transit Project Final Environmental Impact Statement Technical Report*	Adjacent	None
Courtois & Associates 2003	1350148	*Preliminary Report on University of Washington Main Campus Seattle-Significant Buildings and Features Completed Prior to 1953, in Select Campus Area*	Approximately ¼ mi east	None
Rooke 2002	1341144	*Letter to Jay Grenfell regarding Cingular Wireless Tower WA-539 (Cavilier Apartments)*	Approximately 1/8 mi northeast	None
Emerson 2009a	1352771	*Letter to Adam Escalona regarding SE01126A UW Medical BB Tower*	Approximately ¼ mi southeast	None
Emerson 2009b	1352800	*Letter to Adam Escalona regarding SE01124A Suzzallo Library*	Approximately ¼ mi northeast	None
BOLA 2008a	1353338	*Johnson Annex-UW Historic Resources Addendum*	Approximately ¼ mi northeast	None
BOLA 2008b	1353339	*Cunningham Hall-UW Historic Resources Addendum*	Approximately ¼ mi northeast	None
BOLA 2010	1353812	*Husky Union Building-UW Historic Resources Addendum*	Approximately ½ mi east	None
Minor and Meijer 2011	1680887	*Cultural Resource Inventory for Anderson Hall, University of Washington Campus, Seattle, Washington*	Approximately ¼ mi east	None
Sharley and Smith 2011	1680533	*Cultural Resource Assessment for the Thomas Burke Memorial Washington State Museum Renovation Project, University of Washington*	Approximately ½ mi north	None
Stevenson et al. 2013	None	*University of Washington Burke-Gilman Trail, Rainier Vista to 15th Avenue NE Segment, Cultural Resources Inventory Project, Seattle, King County, Washington*	Approximately ¼ southeast	None

Table 2-1. Previous Cultural Resources Studies within ½ mi of the APE.

Reference	NADB #	Title	Distance from APE	Cultural Materials Identified Within or Adjacent to the Project
BOLA 2013	None	*DAHP Historic Inventory Report for Northern Pacific Railroad Bridge No. 4/Alaska Avenue Bridge*	Approximately ¼ southeast	Alaska Avenue Bridge

Monitoring was done during geotechnical borings for the proposed University/Densmore CSO Control System Improvements Project, but no significant archaeological resources were identified (Trudel 2004; see Table 2-1).

Three studies were for the Environmental Impact Statement (EIS) for the Central Link Light Rail Project (Courtois & Associates 2003; Courtois et al. 1998, 1999). Several historic-era resources were identified in various areas; however, none were located in or near the current Project (see Table 2-1).

Three surveys were conducted for cellular tower projects (Emerson 2009a, 2009b; Rooke 2002). The UW Medical BB Tower and Suzzallo Library were documented on HPI forms (Emerson 2009a, 2009b).

Four investigations were conducted as part of historic resources addendums and inventories for the UW. No fieldwork was done, but archival research was completed for Johnson Annex, Cunningham Hall, Husky Union Building, and Anderson Hall (BOLA 2008a, 2008b, 2010; Minor and Meijer 2011).

A Cultural Resource Assessment was conducted ahead of the renovation of Thomas Burke Memorial Museum (Sharley and Smith 2011). The assessment included archival study as well as surface and subsurface survey but found no potentially affected cultural resources (see Table 2-1). Two studies were completed for the Cultural Resource Assessment of the first of five sections of this University of Washington Burke-Gilman Trail Expansion Project (Stevenson et al. 2013). The research and subsurface survey was conducted, for a section of the Burke-Gilman Trail near the APE, between Rainier Vista and 15th Avenue NE. As part of that study, BOLA's architectural historian recorded the Alaska Avenue Bridge, built in 1914, within that Project's APE (BOLA 2013).

2.2.1 Previously Recorded Archaeological Sites

Two archaeological sites have been documented within ½ mi of the APE (Table 2-2). Site 45KI957, is a precontact lithic scatter located on an eroded slope above the Burke-Gilman Trail, behind the Botany Greenhouse (Louderback and Jolivette 2009; see Table 2-2). Materials observed were two lithic quartzite flakes and a chert projectile point mixed with historic-period debris (iron fragments,

hardware, gardening tags, and ceramic sherds) in redeposited soils. The soil was most likely redeposited during construction of the former railroad line that the Burke-Gilman Trail currently resides on and disturbed during use of the greenhouse. This site is roughly a quarter miles southeast of the APE.

Table 2-2. Previously recorded archaeological isolates and sites within ½ mi of the APE

Site Number and Name	Site Type/Description	Distance from APE	Eligibility for NRHP	Reference
45KI957 UW Greenhouse Site	Multicomponent-Prehistoric Lithic Material and Historic Debris	Approximately ¼ mi southeast	Not Evaluated	Louderback and Jolivette 2009
45KI1030	Historic Lewis Hall Stone Staircase	Approximately ½ mi northeast	Not Evaluated	Gilpin 2011

Site 45KI1030 is a historic stone staircase south of Lewis Hall on the UW campus (Gilpin 2011; see Table 2-2). The stone staircase is on the easternmost side of, and likely led up to, a terrace area which was occupied by tennis courts from approximately the early 1920s until the early 1990s. Due to the removal of the tennis courts, the stairs have lost integrity of setting and association and were recommended as not eligible for NRHP.

Stevenson and Little (2014) recovered a basalt flake from disturbed sediment approximately 800 ft west of the western end of the APE. Radial shovel probes excavated by Stevenson and Little did not yield other cultural materials and sediments observed within the radial shovel probes indicated the area was highly disturbed.

2.2.2 Cemeteries

No cemeteries were identified within the ½-mi radius search of the Project.

2.2.3 Historic Buildings, Structures, and Objects

Durio (2009) documented and evaluated the Burke-Gilman Trail, which was built over the former alignment of the Seattle, Lakeshore & Eastern Railroad. The trail was determined not eligible for the National Register of Historic Places (NRHP). No other historic buildings, structures, or objects are known with the APE.

2.2.4 Historic-Period Map Research

General Land Office (GLO) plats

Historic nineteenth-century plats created by the United States Geological Survey (USGS) General Land Office (GLO) depict no features in the APE (USGS 1865, 1890). The closest cultural feature is the Native American overland trail used to travel between Portage Bay (Lake Union) and Lake Washington, which runs through the APE (see Figure 4-1).

Sanborn Maps

The vicinity of the APE was not included on early Sanborn Map Company maps. The earliest Sanborn map to include the APE was created in 1905 (Sanborn 1905). This map includes the Northern Pacific Railroad Company (NPRR) alignment (which is within the APE) as well as a few structures on the blocks north and south of the APE but no features, other than the NPRR line within the APE. The 1919–1950 Sanborn map shows an increase in the number of residential and commercial structures surrounding the APE (Sanborn 1919).

2.2.5 DAHP Predictive Model

The DAHP predictive model for archaeological sites is based on statewide information, using large-scale factors. Information on geology, soils, site types, landforms, and from GLO maps was used to establish or predict probabilities for archaeological resources throughout the state. The DAHP model uses five categories of prediction: Low Risk, Moderately Low Risk, Moderate Risk, High Risk, and Very High Risk. The DAHP predictive model map indicated that the Project is located in a Very High Risk area. However, given the previous modifications in the vicinity with the construction of railroad lines, roadways, and the university, and the land alterations associated with the Alaska–Yukon–Pacific Exposition and the construction of UW facilities (discussed below), the probability for intact archaeological resources is low to moderate.

3. Environmental Context

This chapter 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 APE is located on the northern edge of Lake Union, approximately 25 ft above mean sea level (amsl).

The APE is located within the Southern Puget Sound Basin, a portion of the Puget Trough Physiographic Province (Franklin and Dyrness 1973). The north-south trough of the Puget Lowland separates the Olympic Mountains to the west from the Cascade Range on the east. The lowland was carved out during the last major glaciation of western Washington which ended approximately 16,000 years before present (B.P.) (Alt and Hyndeman 1995; Booth et al. 2004; Dethier et al. 1995; Easterbrook and Rahm 1970:49; Galster and Laprade 1991:249). As glaciers retreated, they left thick sediment deposits. This sediment forms the parent material of many soils throughout this part of King County, including the APE (Snyder et al. 1973). Sediments at the surface across the APE are glacial till deposited during the Vashon Stade of the last major glaciation (Booth et al. 2009). As glaciers retreated, the land on which they rested began to rebound, and would have become available for colonization by plant and animal communities as the climate began to ameliorate.

3.2 Climate and Vegetation

Between approximately 13,000 and 12,000 years ago, the region had developed a much cooler and drier climate, which supported an ecosystem characterized by lodgepole pine (*Pinus contorta*), sedges (*Cyperaceae* sp.), sage (*Artemisia*), and a variety of grasses and herbs. After 12,000 years ago, the climate warmed while continuing to dry, and Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), and red alder (*Alnus rubra*) joined the developing parkland forest. By around 6,000 years ago, the climate of the region had cooled and moistened to levels comparable to today's maritime regime, producing the current western hemlock (*Tsuga heterophylla*) vegetation zone. Presently, uplands are moderately to heavily forested with Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), and western red cedar (*Thuja plicata*). Red alder (*Alnus rubra*) and big-leaf

maple (*Acer macrophyllum*) represent secondary species in forested habitats and are dominant in disturbed areas (Barnosky 1984; Barnosky et al. 1987; Brubaker 1991; Whitlock 1992).

3.3 Fauna

During the late Pleistocene, western North America would have provided habitat for a number of animal taxa not found in the region after about 11,000 B.P. (Gilmour 2011). These animals would have done well in the developing forested parkland environment in the Puget Sound region, which would have provided food for both grazers and browsers and, in turn, food for large carnivores. Climatic changes undoubtedly reduced the habitat for these animals, which would eventually become extinct across the North American landscape.

Throughout the Holocene, and prior to extensive Euroamerican influence in the area, larger terrestrial mammals would have included elk (*Cervus elaphus*), deer (*Odocoileus* spp.), black bear (*Ursus americanus*), coyote (*Canis latrans*), and mountain lion (*Felis concolor*) (Johnson and Cassidy 1997). Smaller mammals that inhabited the area included snowshoe hare (*Lepus americanus*), raccoon (*Procyon lotor*), and beaver (*Castor canadensis*) (Krukeberg 1991; Larrison 1967). Avifauna found in the Puget Sound region include raptors such the bald eagle (*Haliaeetus leucocephalus*) and waterfowl (*Aix* and *Anas* species). Freshwater fish including trout (*Salmo* sp.), suckers (*Castomidae* spp.) and minnows (*Gila* sp.) would have been readily available in in Lake Washington and Lake Union. Pacific salmon and trout (*Onchorhynchus* spp.), including land locked Kokanee (*O. nerka*), would have also been readily available in the region and from waterways near the APE (Berge and Higgins 2003; WDFW 2012). Freshwater mussels (Unionidea) are found in Lake Washington and Lake Union (Xerces 2010).

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 Puget Sound 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 current understanding of Pacific Northwest precontact lifeways is derived from the archaeological record, which is constantly changing as our knowledge grows. How archaeologists see archaeological data is conditioned by a number of factors, including natural (e.g., rising sea levels) and cultural (e.g., excavation, curation) processes, which selectively modify what remains for modern investigators to observe and analyze (Schiffer 1987). New discoveries can either change or reinforce prior notions of human lifeways, but the continually growing body of archaeological data helps give archaeologists a better understanding of the past (Trigger 2002).

In order to organize current knowledge of Pacific Northwest precontact lifeways, numerous investigators have proposed chronologies for the region's archaeological record (e.g., Ames and Maschner 1999; Kidd 1964; King 1950). Ames and Maschner's (1999) chronology is used here to structure discussion of precontact archaeology and inferred lifeways. Their chronological sequence is divided into three basic developmental periods: Paleoindian, Archaic, and Pacific. The archaeological evidence from these periods suggests a gradual shift from small nomadic groups relying on generalized hunting and gathering to larger sedentary groups with increased social complexity and specialized reliance on marine and riverine resources (Ames and Maschner 1999). In essence, the archaeological record in the region documents a shift from foraging to collecting strategies (*sensu* Binford 1980) and cultural change toward ethnographically observed lifeways.

4.1.1 Paleoindian (Approximately 12,500 B.C. to 10,500 B.C.)

Evidence for late Pleistocene occupation of western North America comes from a very small number of archaeological sites, including Paisley 5-miles Cave in Oregon (Gilbert et al. 2008) and sites on California's Channel Islands (Erlandson et al. 2011). Data from these sites have reinforced

the idea that these first inhabitants of the region lived in small groups, were probably highly mobile, and followed the migration patterns of animals across the landscape. Mounting evidence (e.g., Dillehay et al. 2008) suggests that occupants of the "new world" exploited both marine and terrestrial environments, contrary to long held hypotheses (e.g., Martin 1967). Up to now, no archaeological sites dating to the late Pleistocene have been discovered in the Puget Sound region.

The earliest sites in the Pacific Northwest date to the early Holocene and are commonly associated with Clovis points, an iconic large spear point found across much of North America during this time (Meltzer and Dunnell 1987; Osborne 1956). These sites are said to represent the remains of mobile hunting activities and are scarce in the Pacific Northwest. Clovis points have been recovered from sites across the Puget Sound, including Olympia (Osborne 1956). Other early western Washington sites dating to this period include the Manis Mastodon Site (45CA218) near Sequim, and Site 45KI839 on Bear Creek in Redmond. The Manis Site dates to roughly 11,800 B.P., and consists of the remains of a mammoth found in a peat bog with a human-made bone point lodged in a rib fragment (Waters et al. 2011). Site 45KI839 dates to approximately 10,000 to 12,000 B.P., and consists of a highly diverse stone tool kit (Kopperl et al. 2010). This site has been interpreted as a short term occupation site and has yielded evidence of mammal, fish, and plant exploitation. The Manis and Bear Creek sites have demonstrated that the earliest inhabitants of western Washington were not simply big game hunters who used large stone tools to kill game. These sites demonstrate the implementation of diverse toolkits and subsistence strategies, signaling an excellent working knowledge of the landscape and available resources.

4.1.2 Archaic (10,500 B.C. to 4400 B.C.)

Sites dating to the Archaic period, especially prior to 5000 B.P., are rare, at least in part because of natural processes, like sea level rise, which have undoubtedly obscured sites that are currently underwater. The current view of this period is generally one of stasis, but this is likely at least partially conditioned by the rarity of sites dating to this period.

Lifeways during the Archaic period are thought to have changed little from the Paleoindian period. In essence, people are thought to have hunted game, exploited marine environments, and lived in small highly mobile egalitarian groups, as foragers (*sensu* Binford 1980). Microblades and leaf shaped projectile points (i.e., Cascade points) have been used to argue for Archaic period occupation across Western (e.g., Chatters et al. 2011; Greengo and Houston 1965). Identifiable faunal remains are rare at Archaic period sites, making inferences about subsistence difficult, but mammal and fish remains have been reported from Archaic period sites in the Puget Sound region (Chatters et al. 2011; Tait Elder, personal communication 2013; Stilson and Chatters 1981).

The most discussed sites dating to the Archaic period are often referred to as "Olcott" sites (Kidd 1964). These sites typically lack good absolute dates, are highly disturbed, are located near rivers, and

contain expedient tools such as scrapers, flaked cobbles, and debitage in addition to large lanceolate and stemmed projectile points. Much discussion of these sites has taken place in the last 50 years (e.g., Chatters et al. 2011; Dancey 1969; Kidd 1964; Morgan 1999; Stilson and Chatters 1981). The sites were thought to represent short-term camps where hunting and game processing was the primary focus of activity (Kidd 1964). Investigators like Dancey (1969), Morgan (1999), and others have refuted Kidd's (1964) initial interpretation, and Chatters et al. (2011) have recently suggested that "Olcott" sites represent the cultural remains of a group of people well adapted to unpredictability who used both at both plants and animals but were still highly mobile.

A number of Archaic period sites have been recorded in King County. Greengo and Houston (1965) excavated at the Marymoor Site, located in Marymoor Park, during the 1950s. This site yielded a large array of Archaic period artifacts, including large projectile points, modified cobbles, and microblades. The earliest component of the West Point sites (discussed below) also falls into the Archaic period.

4.1.3 Pacific (4400 B.C. to A.D. 1775)

Based on the archaeological record, the Pacific period is the most culturally dynamic precontact period in the Pacific Northwest (Chatters 1987; Larson and Lewarch 1995; Lewarch 2006; Lewarch and Larson 2002). Over time, changing technologies and site locations suggest increased sedentism and specialization in the use of particular environments and resources (Ames and Maschner 1999). During this period, evidence of exploitation of the littoral environment increases, and shell middens become a prominent site type across Puget Sound. After about 5000 B.P., populations on or near the Puget Sound coast grew and became more complex in organization. Technological organization and subsistence practices became increasingly complex during the Pacific period as well. During this period, there is apparent increasing emphasis on the use of plants including berries and root-vegetables. Social stratification and inequality, a hallmark of Northwest coast cultures, is thought to be less pronounced in the Puget Sound than in other parts of the Pacific Northwest; however, objects like labrets, indicative of social stratification, appear early in the Pacific period in the Puget Sound at sites like West Point (45KI248) (Larson and Lewarch 1995). By shortly after 2500 B.P., a variety of bone, chipped stone, and groundstone artifacts represent coastal marine-oriented cultures and inland hunting/fishing/gathering cultures (Ames and Maschner 1999; Nelson 1976, 1990).

A number of shell midden sites dating to the past several thousand years have been recorded in and around the Puget Sound area. The West Point sites (45KI428 and 45KI429), located at Discovery Park in West Seattle, have been interpreted as long-term camping and food-processing activity areas (Larson and Lewarch 1995). Five distinct cultural components indicate use of the sites between 4200 and 200 B.P. These sites included a number of personal items, including beads, bracelets, and labrets, which may be related to developing social inequality in the region (Ames and Maschner

1999). The West Point sites also yielded a highly diverse tool kit, including bone as well as ground and chipped stone implements used for capturing and processing prey (Larson and Lewarch 1995). The highly diverse faunal assemblage includes sea mammals, fish, terrestrial mammals, birds, and shellfish, indicating exploitation of a number of available niches.

4.2 Ethnographic Background

The APE is located within the traditional territory of the Duwamish Indians, members of the Coast Salish cultural group that spoke Southern Lushootseed (Suttles 1990). The Duwamish traditionally lived in winter villages on the shores of Elliott Bay, Salmon Bay, Lake Washington, and Lake Union, as well as along the Black, Cedar, and Duwamish Rivers (Ruby and Brown 1992; Stevens 1854; United States Court of Claims 1927). Ethnographer T. T. Waterman (in Hilbert et al. 2001:15–16), who worked in the Puget Sound region during the 1920s, pointed out that the Duwamish, like other groups, identified themselves in relation to their local geography. For example, a group who lived in the vicinity of the APE around Lake Union identified themselves as the *Xa^{3}tcuaÉbc* (Waterman orthography), or "people of the small lake." While this distinction is taken into account ethnographically, these groups have historically been grouped into a larger entity (the Duwamish) based on shared culture and language.

Ethnographic and archaeological evidence suggests that the Salish Lushootseed-speaking Duwamish, whose name means "inside [the bay] people," practiced their life way of hunting, fishing, and gathering for centuries before contact with white settlers (Hilbert et al. 2001). Duwamish settlement and subsistence were inextricably linked throughout the year.

The Duwamish, like other Coast Salish groups, spent the majority of the winter inside large longhouses made from cedar planks that had "shed" roofs, which Waterman and Greiner (1921) note were common among tribes around the Sound. These houses could be massive, providing room for very large extended families and much of the food they would need for the cold months. The houses were often arranged into villages of two to five structures. The Duwamish occupied extended family villages and established a flexible system of intermarriage with the surrounding peoples, including the Sammamish and Snohomish (Ruby and Brown 1992). Winter was spent engaged in storytelling and ceremonial performances (Amoss 1972).

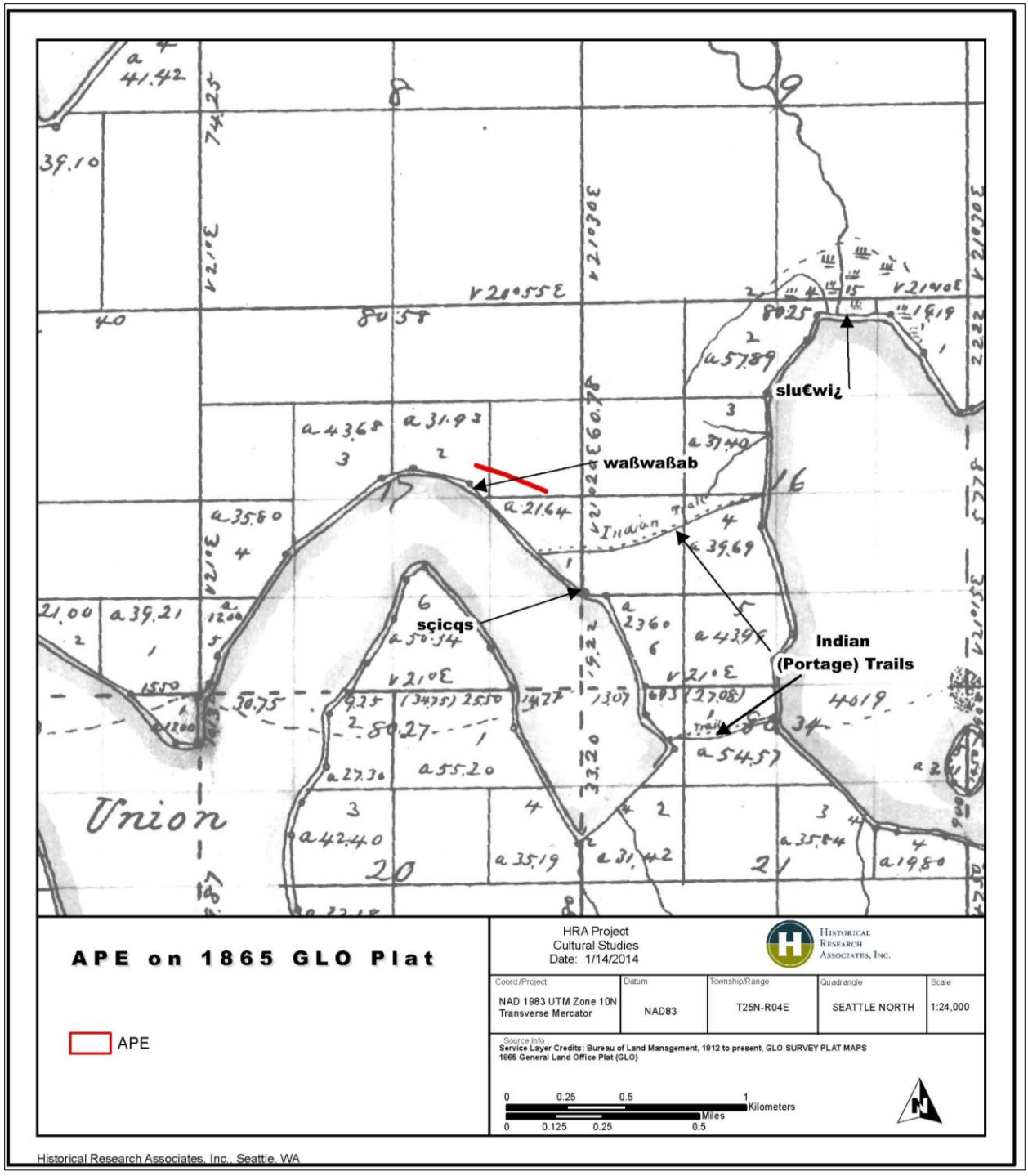

Figure 4-1 Native American place names in the vicinity of the APE (Hilbert et al. 2001; USGS 1865).

During spring, fall, and summer, people from the winter villages dispersed to hunt, fish, and gather plant foods for immediate consumption and winter storage (Buerge 1984; Haeberlin and Gunther 1930). Summer camps usually consisted of small, temporary reed or grass-mat structures occupied by a single family, although several families might join together to build a larger mat house (Haeberlin and Gunther 1930; Suttles 1990; Suttles and Lane 1990). Upland forested environment, not only attracted and supported deer and elk populations for hunting, but likely also provided a variety of plant resources such as berries, nuts, and root foods.

T. T. Waterman (Hilbert et al. 2001) identified several Duwamish ethnographic place names in the vicinity of the APE. He described identifiable physical locations along the lake shores and nearby landforms. Approximately 0.1 mi south of the APE is a location called ***waq̓waq̓ab***, translated as "like a frog." At this location, a small creek drains into Portage Bay. Along the Portage Bay shoreline, and approximately 0.2 mi southeast of the APE, Waterman's informants identified a small promontory (now the location of the UW Boat Club) as ***sqʷicqs***, "down river promontory." The marsh between Laurel Point and the UW, now filled in, and the location of parking lots for the UW and Husky Stadium, was known as ***sluʔwił***, translated as "perforation for a canoe." A village with at least five longhouses was located here, along with a fish weir. This is the closest identified village, roughly 1.2 mi away from the APE. The small cove west of Laurel Point was referred to as ***ʔadid(a)***, or "dear me/for gosh sakes"(Hilbert et al. 2001:77–80; Thrush 2007:251). This location is nearly 2.0 mi from the APE. An "Indian Trail" depicted on the 1865 GLO connects Lake Washington and Lake Union is approximately 0.3 miles east of the APE (USGS 1865). This trail, along with one located slightly further to the south, both likely canoe portage routes, is evidence of the heavily used transportation corridor stretching between Shilshole Bay and Lake Washington, bringing people from various neighboring tribes into and through the project area vicinity (Miller and Blukis Onat 2004:70; USGS 1865).

4.3 Historic Background

European visitation to the Puget Sound region began in 1792 when George Vancouver and his crew explored the region. Within the next 100 years, native populations would plummet due to repeated outbreaks of introduced diseases such as small pox, influenza, and typhoid fever (Boyd 1990; Suttles and Lane 1990). Fort Nisqually, located approximately 40 mi southeast of the Duwamish headwaters, was established as a trading post by the Hudson's Bay Company in 1833. The Treaty of Washington in 1852 conveyed the territory to the United States, and the Donation Land Claim Act drew settlers into land occupied by the Duwamish and their neighbors. In 1855, members of the Duwamish and neighboring Puget Sound tribes signed the Treaty of Point Elliott, which provided for the removal of tribal members to reservations, including the Port Madison Reservation (Suquamish/Fort Kitsap). Some Duwamish people continued to live in and around Seattle,

maintaining friendly relations, working for, and trading with incoming settlers. Many others, meanwhile, relocated to the Port Madison Reservation, but due to undesirable conditions were compelled to leave. Many then attempted to return to their ancestral lands, and a few were able to claim or purchase land (Ruby and Brown 1992; Thrush 2007).

Tribal lands and fishing rights continued to be eroded through the late 1800s and 1900s, culminating, in the late 1900s, in a series of lawsuits and court cases that upheld certain treaty rights (Marino 1990; Ruby and Brown 1992). The Duwamish Tribe is not currently federally recognized, but continues to fight for this distinction.

The first Euroamerican settlers in the vicinity of the project area were the Denny Party, who arrived in 1851 (Bagley 1929). Within a decade, the 302 ambitious settlers living in Seattle had requested and been granted the right to open the State University in the young city. In 1861, the first university building was constructed on 10 acres of "Denny's Knoll," which would eventually become Seattle's commercial downtown district. The population of Seattle boomed in the following decades, to over 40,000 by the late 1880s. The city needed a university as well a major rail line; over the next decade it would get both.

In 1885, the Seattle, Lake Shore & Eastern Railroad (SLS&E) Company became a corporation (Bagley 1929). The company formed as a result of the efforts of Thomas Burke, a local judge, and Daniel Gilman. Although Seattle was a vibrant city during the late 1880s, major rail road companies like the Northern Pacific Railroad (NPRR) had yet to build a line through the town. Gilman and Burke, along with others, saw this as an opportunity, and built the SLS&E line to connect the burgeoning city to Canada. After years of dispute between NPRR and the city, the SLS&E line eventually became incorporated into the NPRR line in 1892. The line was actually acquired by NPRR in 1913.

The present UW campus location was selected in the early 1890s (Courtois & Associates 2003). In 1891, William Boone was the first architect to develop a campus plan. While his plan was never realized, it illustrates hypothetical building placement and also appears to show that the campus and surrounding areas, including the APE, were forested at the time of his design. Construction on the campus began with the building of Denny Hall in 1895, followed by at least seven more buildings, including Lewis and Clark Halls, the Observatory, the Assay Laboratory (now demolished), Water Tank (later Chimes Tower, demolished), Powerhouse (demolished), and the Armory and Gymnasium (Bagley 1929; Courtois & Associates 2003:2; Johnston 2001:1–4).

Historic maps (e.g., Sanborn Fire Insurance Maps) demonstrate that as the University of Washington grew during the twentieth century, the area surrounding the campus grew as well (Courtois & Associates 2003; Sanborn 1905, 1930). Commercial and residential development focused both on the university as well as local fishing and timber industries drove this trend.

Historically, commercial development in this area followed much the same trajectory as the rest of the City of Seattle. This growth came with a necessary expansion of public utilities to supply electricity, water, and sewer services to the buildings surrounding Lake Washington and Lake Union. In 1908, Seattle constructed an 8-ft diameter sewer by tunneling roughly 20 ft below surface in the vicinity of East Pacific Street, adjacent to the APE (Seattle Public Utilities 2013). Waterlines, natural gas lines, and a number of other utilities including fiber optic and electrical lines were installed in the vicinity of the APE during the late twentieth century (Jacobs, personal communication 2013; Seattle Public Utilities 2013).

The NPRR, owners of the segment of line within the APE, continued heavy use of the line until 1963 (City of Seattle 2011). The NPRR merged with two other railroad companies, Burlington and The Great Northern, in 1970, and the new company, the Burlington Northern Railroad, abandoned the line that would become the Burke-Gilman Trail in 1971. The first section of the line to be paved and turned into the Burke-Gilman Trail connected Gas Works Park (west of the APE) within Tracy Owen Park in Kenmore (north of the APE).

5. Expectations for Hunter-fisher-gatherer, Ethnographic Period, Historic Indian, and Historic Euroamerican Cultural Resources

Based on archival research, as well as the environmental and the cultural settings of the APE, there is a moderate to high probability for observing precontact to ethnohistoric period cultural remains. Settings similar to that of the APE would have been the focus of hunting and gathering activities and would have been ideal locations for long term occupation as well. Expected artifacts and features would relate to these activities. Although the APE has been the subject of significant development over the past 120 years, anticipated materials could include fragments of fire-modified rock (FMR), either singly or in intact clusters (sometimes with charcoal and/or oxidized soils), indicating the presence of cooking or processing hearths; lithic and/or bone tools and tool fragments; and isolated bone tools and tool fragments.

The likelihood of finding historic-period archaeological remains is moderate to high, given the use of the APE as an important transportation corridor early in the history of the development of Seattle. Historic features and artifacts encountered would likely be associated with the SLS&E railroad and NPRR. Some artifacts associated with the AYPE may be encountered as well. Artifacts and features may include railroad spikes, brick, nails, glass and metal refuse, building foundations, and objects related to operation of the railway (e.g., portions of signals).

6. Field Strategy and Methods

6.1 Archaeological Inventory

Surface and subsurface survey were performed along the APE in order to identify archaeological materials and to assess the potential of the APE to contain archaeological materials.

Utility locations were marked along the trail, within the APE. Representatives from two utilities met HRA archaeologists on site during the first day of fieldwork to discuss the scope and scale of the subsurface survey and the location of known natural gas and Seattle City Light electrical lines. A representative from Seattle City Light marked areas that included many electrical lines on aerial photographs of the APE. These areas were avoided during shovel probing.

6.1.1 Pedestrian Survey

HRA archaeologists walked parallel transects on the north and south sides of the Burke-Gilman Trail along the length of the APE. Surface survey was designed to identify cultural resources visible above ground, as well as marked utilities and other evidence of disturbance. Representative photographs were taken during the course of the survey in order to document the landscape, development, and the location of marked utilities.

6.1.2 Subsurface Survey

Shovel probes (SP) were excavated across the APE in order to identify buried cultural resources. Shovel probes were only excavated in unpaved areas where utilities were not located. Sediments recovered from each SP were screened through ¼-inch hardware mesh. Observations regarding SP sediments were documented on standardized forms. These observations included sediment grain size (e.g., sand, silt), gravel size and shape, contacts (e.g., abrupt, difuse), color, presence of water, presence of roots, signs of soil development, origin of sediment, and disturbance. Cultural materials recovered during SP excavation were noted. Precontact and historic artifacts, if observed, would have been photographed from multiple angles. GPS points were taken for each SP in order to document their locations. Shovel probe excavation was terminated when impassible objects (e.g., large cobbles, wood) were encountered or when *in situ* (i.e., in place/not disturbed) glacially deposited sediment was encountered. Shovel probes were excavated to approximately 60 centimeters (cm) because this was the vertical extent of the APE.

If a SP was found to contain an artifact, shovel probes were excavated five meters away in each of the four cardinal directions, where possible. These radial shovel probes were excavated in an attempt to discover if the artifact was representative of an archaeological deposit or an isolate. This process was repeated until no artifacts were encountered in the radial shovel probes or until excavation of shovel probes was impeded.

7. Archaeological and Architectural Inventory Results

7.1 Archaeological Inventory

HRA archaeologists Alexander Stevenson, Kainoa Little, and Angus Raff-Tierney performed archaeological inventory within the APE on December 17, 2013.

7.1.1 Pedestrian Survey

In general, the landscape along the APE was developed (e.g., landscaping, pavement and building) and included numerous underground utilities (Figures 7-1 and 7-2). Figure 7-2 depicts marked subsurface utilities, water, natural gas, and fiber optic lines near the west end of the APE. These utilities continued for the length of the APE. Natural gas lines were marked along the northern edge of the trail as well although they cannot be seen in Figures 7-2. Seattle City Light personnel noted that there were many subsurface electrical lines on the south side of the trail; these areas are marked in green on Figure 7-1.

No cultural materials were observed during surface survey. Utility markings were observed along much of the Burke-Gilman Trail within the APE. Natural gas lines were located along the northern boundary of the trail edge and fiber optic lines were marked along the length of the APE on the south side of the trail.

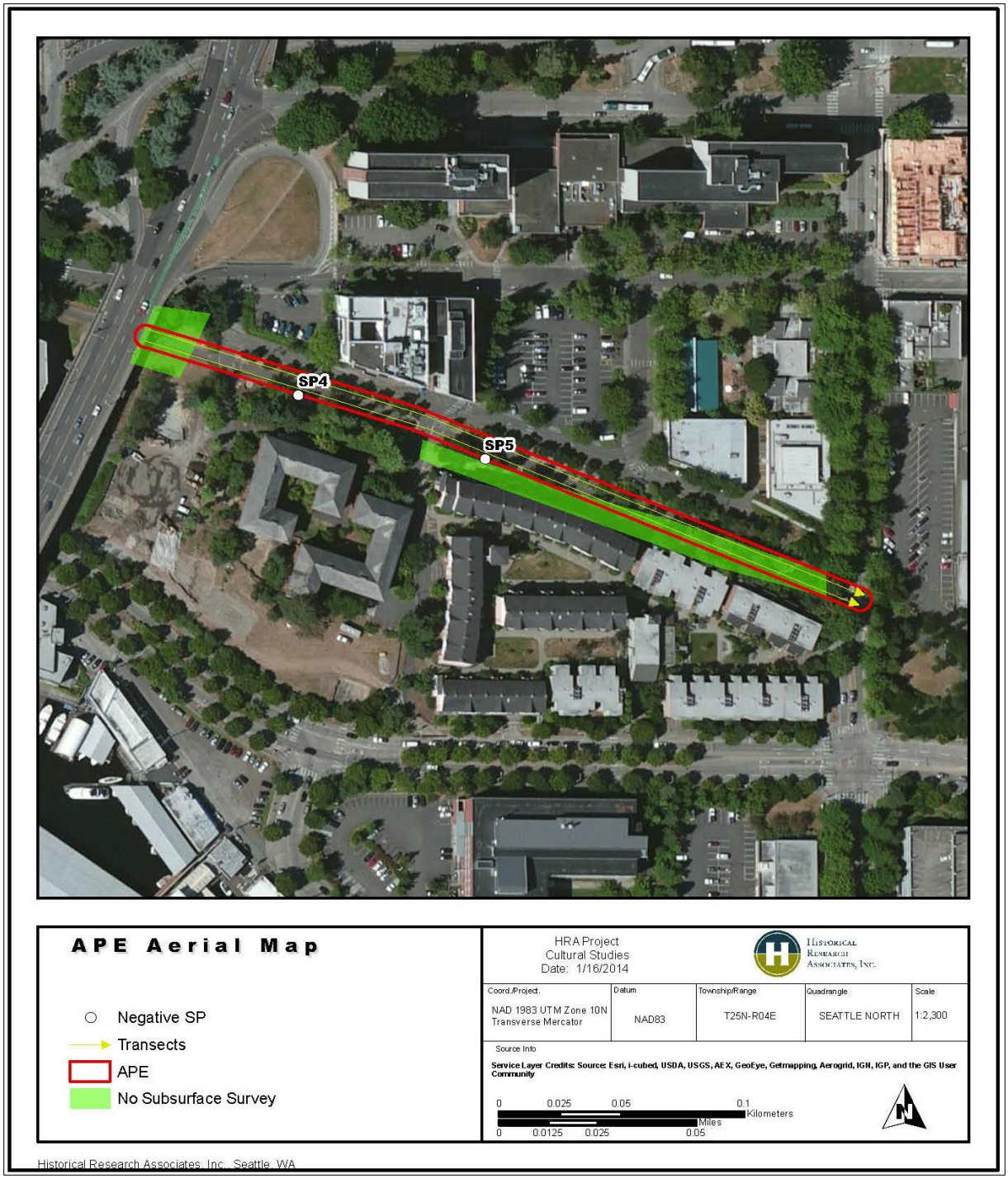

Figure 7-1. Shovel probe locations (note: green area indicates area with many subsurface utilities).

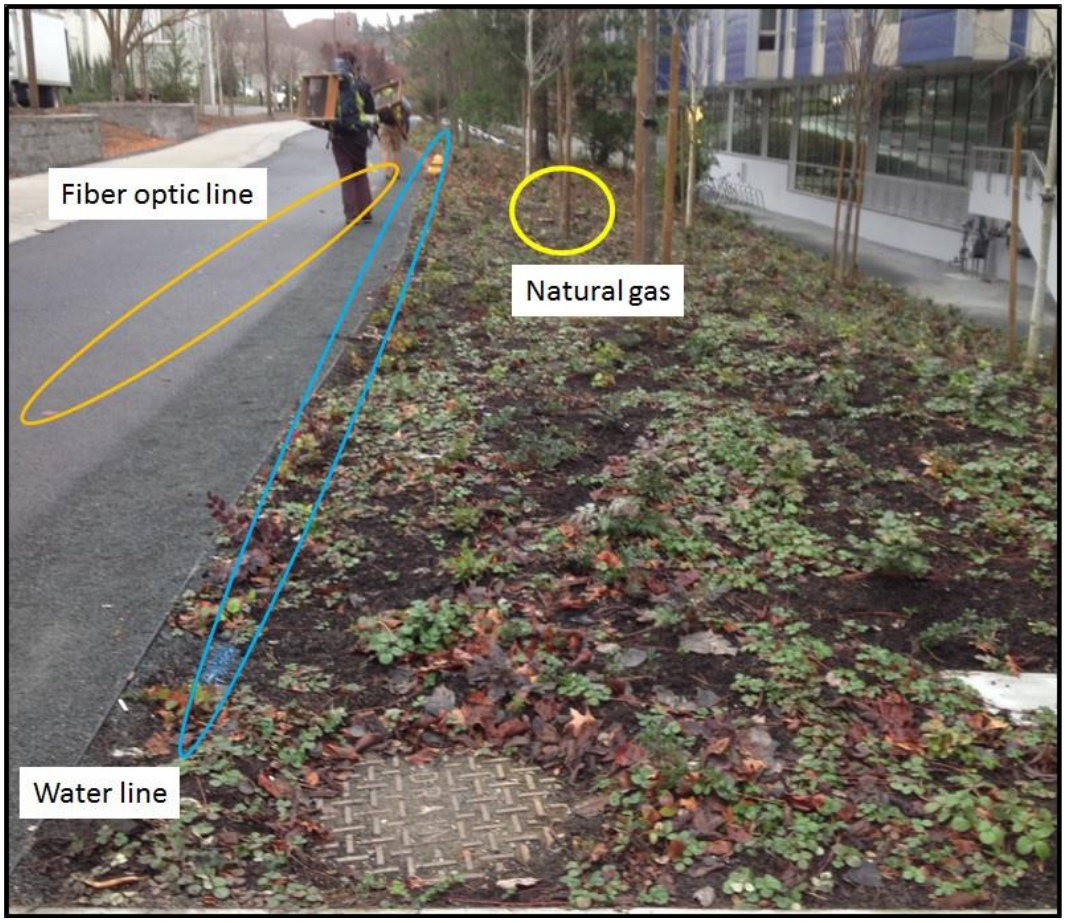

Figure 7-2. Marked utilities along APE, view east.

7.1.2 Shovel Probes

Only two shovel probes were excavated within the APE because the area had been paved and developed and included numerous subsurface utilities (Table 7-1; see Figure 7-1).

Table 7-1. Results of shovel test probes in the APE.

Shovel Probe	**Maximum Depth (cm)**	**Description (cm): Description – *Comments***	**Cultural Materials**
4	51	0-7: Wood chips. 7-34: Dark grayish brown sandy silt, some rounded and subrounded small to medium sized gravels – *Safety fencing noted approximately 25 cmbs* 34-51: Light grayish-brown silty sand, many rounded and subrounded small to medium gravels, coal fragments throughout – *disturbed outwash* Terminated close to vertical extent of APE.	None None 1 purple glass fragment (40-50 cmbs)
5	50	0-50: Dark brown sandy silt, few subrounded gravels, coal fragments throughout – *fill* Terminated at exposure of intact PVC utility pipe.	1 glass fragment, 1 miscellaneous metal fragment (0-30 cmbs)

Sediments observed during shovel probe excavation within the APE were indicative of glacially deposited sediment that had been recently disturbed (see Table 7-1). Sediments were generally brown to gray sandy silt with some round to subrounded gravels. No significant soil development was noted. Opaque purple glass (not amethyst glass) fragments recovered from 40–50 cm below surface (bs), as well as the presence of safety fencing in SP4, indicate the sediments were highly disturbed (Figures 7-3 and 7-4).

Figure 7-3. Safety fencing observed in SP4.

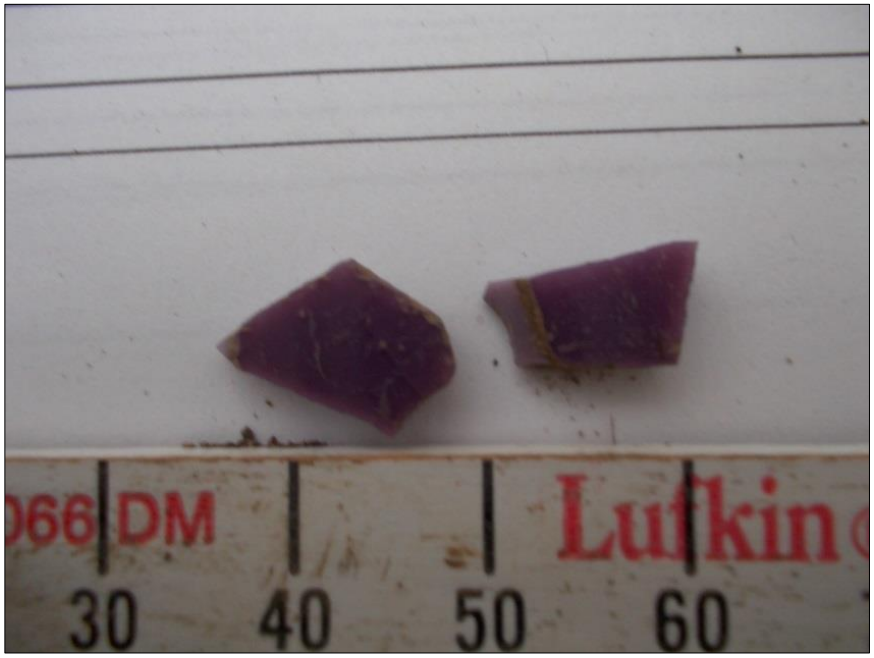

Figure 7-4. Opaque purple glass observed in SP4 (not amethyst glass).

SP5 was placed off the southern edge of the Burke-Gilman Trail, prior to consultation with Seattle City Light representatives (Figure 7-5). This SP encountered buried electrical conduit but only scratched the PVC conduit casing (Figure 7-6). Sediments observed in this SP were similar to those seen in SP4 and were obviously disturbed (Figure 7-6).

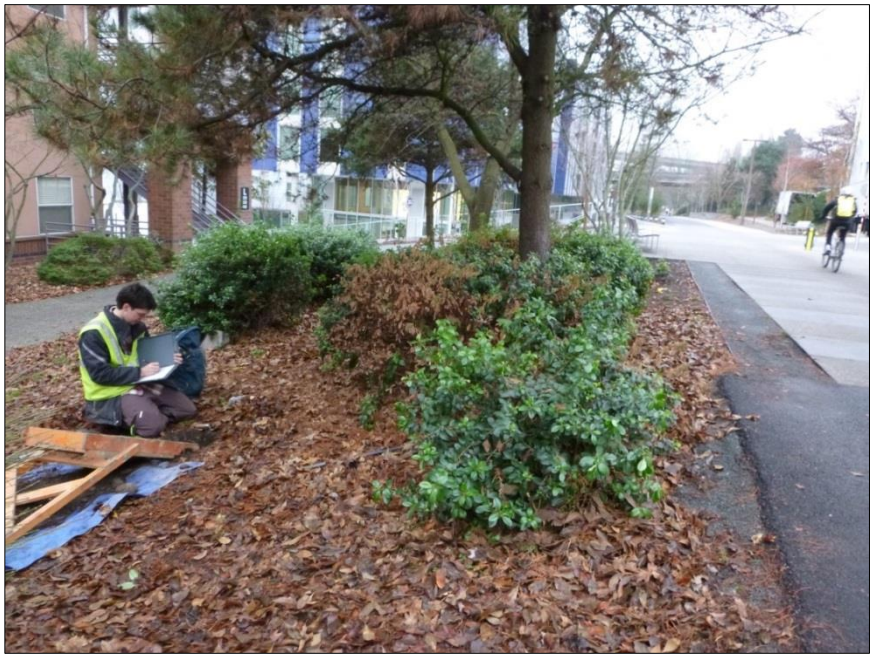

Figure 7-5. Overview of SP5 location, view west.

Figure 7-6. Electrical conduit in SP5.

8. Summary and Recommendations

8.1 Archaeological Resources

Surface and subsurface survey within the APE identified no archaeological resources. The APE has been the subject of a great deal of recent development including paving, building, and utility installation. As many as four subsurface utilities were located in the APE. Subsurface survey further demonstrated that the APE has been highly disturbed.

Despite the presence of known ethnographic sites in the vicinity of the APE, no further cultural resources work is recommended within this APE because of the significant disturbance observed during the archaeological survey. However, if this project undergoes significant design changes additional archaeological work may be required..

8.2 Accidental Discovery of Archaeological Resources

In the event that archaeological deposits are inadvertently discovered during construction in any portion of the APE, ground-disturbing activities should be halted immediately, and the University of Washington should be notified. The University of Washington would then contact DAHP and the interested Tribes, as appropriate.

8.3 Discovery of Human Remains

Any human remains that are discovered during construction of the Project will be treated with dignity and respect.

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, and the area of the find must be secured and protected from further disturbance. In addition, the finding of human skeletal remains **must** be reported to the county coroner **and** local law enforcement in the most expeditious manner possible. The remains should not be touched, moved, or further disturbed.

The county coroner will assume jurisdiction over the human skeletal remains, and make a determination of whether those remains are forensic or non-forensic. If the county coroner determines the remains are non-forensic, they will report that finding to the 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. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

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