CULTURAL RESOURCES OVERVIEW OF THE 35TH AVENUE SE RECONSTRUCTION PROJECT, MILL CREEK, SNOHOMISH COUNTY, WASHINGTON

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April 15, 2014

SWCA Project Number 27724
Report Number 14-123

SWCA ENVIRONMENTAL CONSULTANTS
SEATTLE, WASHINGTON

CULTURAL RESOURCES OVERVIEW OF THE 35TH AVENUE SE RECONSTRUCTION PROJECT, MILL CREEK, SNOHOMISH COUNTY, WASHINGTON

Report Prepared for

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CULTURAL RESOURCES REPORT COVER SHEET

Author: Rinck, Brandy A.

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Date of Report: April 15, 2014

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Quad: Bothell Acres: 1.4

PDF of report submitted (REQUIRED) ☒ Yes

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TCP(s) found? ☐ Yes ☒ No

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ABSTRACT

The City of Mill Creek Department of Public Works (The City) proposes to reconstruct a segment of 35th Avenue SE between 144th Street SE and 141st Street SE. The roadway is underlain by peat deposits at the Penny Creek crossing, resulting in chronic settlement of 35th Avenue SE and seasonal flooding over the road. The project is within a culturally sensitive area that would have provided people with many plant and animal resources in the past. Standing water across most of the project area during a reconnaissance made sub-surface investigation for cultural resources difficult; however, two shovel probes were excavated. Geotechnical data was used to supplement the shovel probe results. Thick fill was identified overlying naturally deposited peat and organic-rich silt. No significant cultural materials were identified. Archaeological monitoring of project construction is recommended due to the project's sensitive setting along the margin of a kettle lake and the limited sub-surface survey. A monitoring and discovery plan with provisions for inadvertent discovery is appended to this report. Future planning should take into account the potential for discovery of unrecorded archeological sites described in this overview.

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INTRODUCTION

The City of Mill Creek Department of Public Works (The City) proposes to reconstruct a segment of 35th Avenue SE. The segment of 35th Avenue SE roadway between 144th Street SE and 141st Street SE is underlain by peat deposits at the Penny Creek crossing, resulting in chronic settlement of 35th Avenue SE and seasonal flooding over the road. The City is currently considering design options for addressing the long-term settlement of 35th Avenue SE and has retained KPFF Consulting Engineers (KPFF) to assist with the pre-design phase of work. KPFF contracted with SWCA Environmental Consultants (SWCA) to prepare a cultural resources overview for the 35th Avenue SE Reconstruction Project (the project) to contribute to the project design.

Project Location and Description

The 35th Avenue SE Reconstruction Project is southeast of Silver Lake and north of Mill Creek, Washington in Sections 32 and 33 of Township 28 North, Range 5 East, Willamette Meridian (Figure 1). The project alignment crosses over Penny Creek, just west of Thomas Lake. Penny Creek flows within a wide, flat bottomed basin that supports a seasonal marsh and wetland and 35th Avenue SE has been sinking down into the wetland at the Penny Creek crossing for many years. In 2003, Snohomish County Public Works completed geotechnical borings in the project area and reconstructed the 35th Avenue SE roadway using lightweight fill consisting of hog fuel, but settlement of the road embankment continued. Further geotechnical evaluation of the roadway was performed by Shannon and Wilson, Inc. and a study was prepared that evaluated alternatives to prevent additional sinking (Shannon and Wilson, Inc. 2013). KPFF is revisiting the past project alternatives for the City of Mill Creek and current options under consideration include 1) replacing older, heavier fill with geofoam or cellular concrete; 2) a pile-supported slab solution with drainage improvements to existing water collection and conveyance systems; and 3) possible bridge and levee solutions.

Detailed project plans are not yet available because the project is currently in design. The project limits are within the 35th Avenue SE right-of-way (ROW) up to 61 meters [m] (200 feet [ft]) south of 144th Street SE and up to 30 m (100 ft) north of 141st Street SE. The goal of construction will be to keep all ground disturbance within the roadway embankment. The depth of project disturbance will depend on which design option is selected. Excavations for placement of geofoam or cellular concrete fill could reach about 3 m (10 ft) below the surface. The concrete slab alternative would be supported by pin piles driven through the soft peat up to 12 m (40 ft) below the surface to the underlying harder glacial sediment. The project area is covered with asphalt and fill, so a traditional archaeological survey to identify cultural materials is not possible prior to construction. Instead, the results of this reconnaissance overview contribute to the evaluation of constriction options and solutions, provide information about archaeological sensitivity across the project area, and supply parameters for future archaeological monitoring of construction.

Regulatory Setting

The project is subject to the State Environmental Policy Act (SEPA) [RCW 43.21c] and the implementing rules contained within the Washington Administrative Code [WAC 197-11]. These rules require project proponents to identify any places or objects on or adjacent to the project that are listed in or eligible for national, state, or local preservation registers, and to identify sites of archaeological, scientific, or cultural importance on or adjacent to the project. Project proponents are also required to describe proposed measures to reduce or control impacts to those places, objects, and sites.

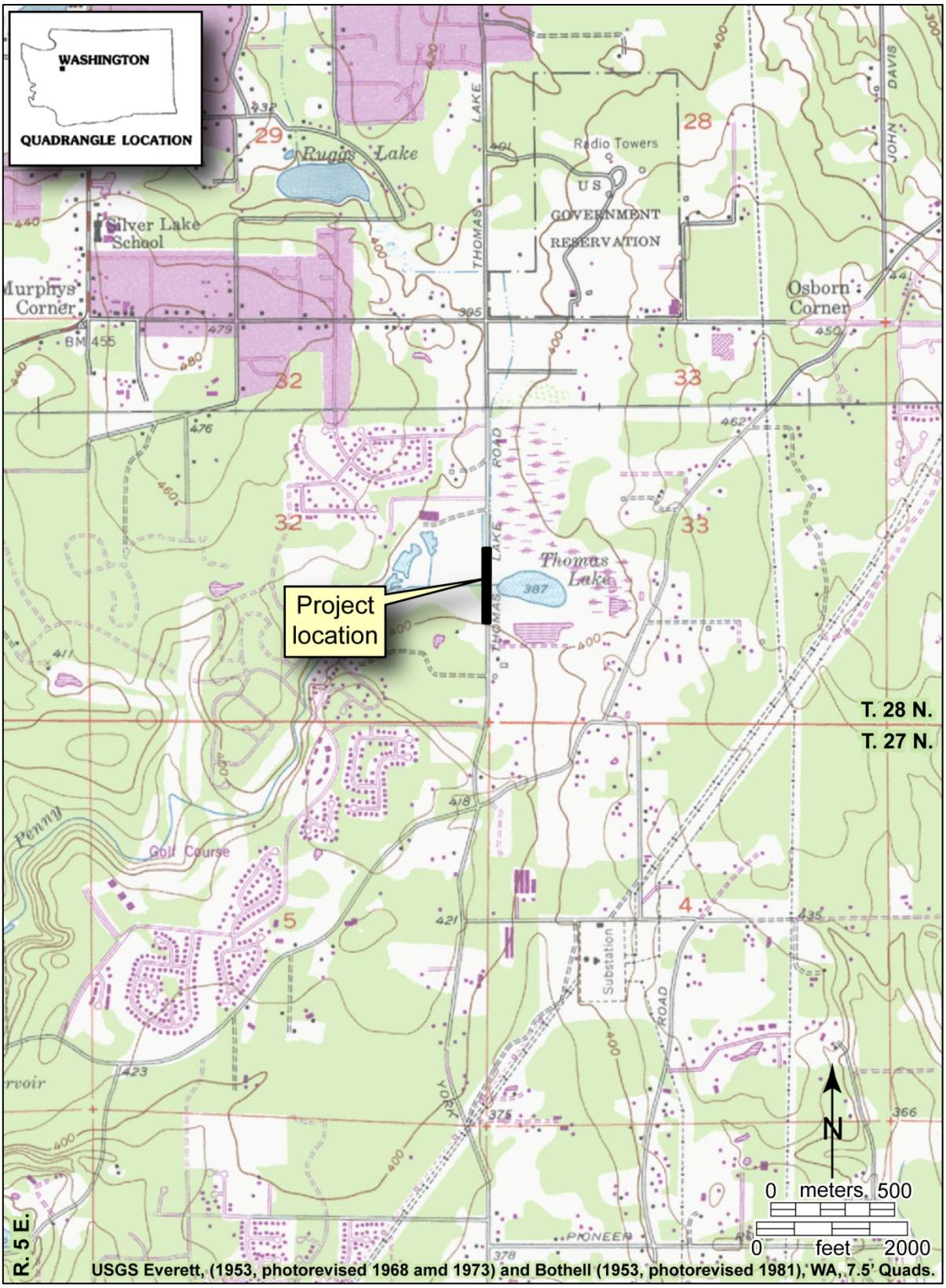

Figure 1. Project location.

Other relevant Washington state laws address archaeological sites and Native American burials. The Archaeological Sites and Resources Act [RCW 27.53] prohibits knowingly excavating or disturbing prehistoric and historic archaeological sites on public or private land. The Indian Graves and Records Act [RCW 27.44] prohibits knowingly destroying American Indian graves and provides that inadvertent disturbance through construction or other activities requires reinterment under supervision of the appropriate Indian tribe. In order to prevent the looting or depredation of sites, any maps, records, or other information identifying the location of archaeological sites, historic sites, artifacts, or the site of traditional ceremonial, or social uses and activities of Indian Tribes are exempt from disclosure [RCW 42.56.300].

Tribal Coordination

SWCA contacted cultural representatives of the Tulalip Tribes and the Stillaguamish Tribe to inform them about the project and to inquire if the Tribes have concerns for cultural resources in the Project area (Appendix A). Richard Young with the Tulalip Tribes and Kerry Lyste with the Stillaguamish Tribe were invited to meet with SWCA's geoarchaeologist during the field investigation portion of the assessment. The inquiry was for technical purposes and does not take the place of required consultation. Kerry Lyste checked in about the project by telephone after survey was complete and stated he agrees that project construction should be monitored. No response had been received from the Tulalip Tribes at the time this report was written.

NATURAL SETTING

The topography and surficial geology of the project area are the result of continental glaciations that extended south from Canada into the Puget Lowland, a structural trough that separates the Olympic Mountains to the west and Cascade Mountains to the east (Alt and Hyndman 1995). Due to the multiple advances and retreats of the ice sheets during the Pleistocene Epoch, the geomorphology of the project area is dominated by north-south trending ridges and extensive drift uplands (Crandell 1963, 1965; Galster and Laprade 1991; Mullineaux et al. 1965). The last glacial advance, called the Vashon Stade of the Fraser glaciation, reached the north Puget Sound about 18,750 calibrated years before the present (cal B.P.) (Dethier et al. 1995; Easterbrook 1963, 1986, 1993; Porter and Swanson 1998; Waitt and Thorson 1983). The Puget Lobe of the Cordilleran ice sheet reached the Seattle area by 17,590 cal B.P. during the Vashon Stade. The ice reached as far south as Tenino, about 77 miles (123 kilometers) southwest of the project, at its maximum extent about 16,950 cal B.P. (Easterbrook 2003; Porter and Swanson 1998). The ice front persisted there for a few hundred years before it began retreat due to the onset of climatic warming at the end of the Pleistocene (Borden and Troost 2001; Porter and Swanson 1998).

Large glacial lakes formed in the ice-scoured troughs between the glaciated uplands as the Puget Lobe melted. Initially, the glacial lakes drained south through the Black Hills into the Chehalis River (Bretz 1913). The project vicinity was ice-free by 16,575 cal B.P., but Glacial Lake Russell and Glacial Lake Bretz filled the Lowland until a northern spillway linking the Puget Sound and Pacific Ocean was uncovered from below the ice (Porter and Swanson 1998; Thorson 1980, 1989). The entire Puget Lowland was isostatically depressed in elevation due to the weight of the ice sheet when the glacial lakes were present, but the land began to rebound from the weight and rise in elevation as the Puget Lobe continued to melt (Clague 1983). The south Puget Lowland rebounded faster than the north end because the ice there had been thinner and had not lasted as long (Booth et al. 2003; Kovanen and Slaymaker 2004). The northern limits of Puget Sound were ice free by about 16,300 cal B.P., allowing

sea water to enter the Lowland from the Strait of Juan de Fuca (Armstrong et al. 1965; Dethier et al. 1995; Dragovich et al. 1994; Porter and Swanson 1998).

Retreat of the Puget Lobe resulted in the deposition of various glacial deposits, such as till, outwash, glaciolacustrine, and ice contact sediment in the Puget Lowland (Booth 1994; Booth et al. 2003). Today, compact glacial till that was deposited directly from glacial ice caps the uplands surrounding Puget Sound and sandy and gravelly outwash deposited by glacial meltwater blankets the lower elevations. Recessional glacial landforms that are composed of till, outwash, and ice marginal sediment and are common in the Puget Lowlands include kettle lakes, kames, and drumlins. These landforms are found on the glacial upland on which the project is situated**.** For example, depressions on the upland surface that are occupied by bogs today were created by abandoned meltwater channels and stranded ice blocks during glacial retreat (Mullineaux 1970). Examples of kettle lakes in the project vicinity are Thomas Lake immediately to the east of the project and Ruggs and Silver Lakes to the northwest. Thick accumulations of sand and gravel deposited in front of the advancing glacier and subsequently overridden by it have been mapped as Advance Outwash (Qva) in the south end of the project area (Minard 1985).The overriding glacier compacted the outwash sands and deposited the Vashon Till (Qvt), a compact mixture of sand, silt, and gravel, mapped just south of the project. Peat (Qp), a relatively young deposit that forms as grasses, sedges, reeds, sphagnum and other plants die and accumulate in areas of poorly developed drainage, relatively impervious soils, and a high or perched water table, is mapped across the surface of most of the project alignment.

Major rivers and lakes of the Puget Lowland now occupy the largest of the remnant glacial lake basins (Liesch et al. 1963; Yount et al. 1993Smaller streams have carved short, steep sided canyons along the glacial upland margins and filled in depressions on the surface of the upland (Smith 1976). The project lies within the Thomas Lake Basin that stretches about 0.75 miles (1.21 kilometers) across from 144th Street SE to 132nd Street SE. The exposed surface water in the Thomas Lake Basin is the result of beaver dams and an unconfined aquifer composed of advance outwash sands (Snohomish County Public Works 1993). Penny Creek flows out of Thomas Lake, through the Mill Creek Country Club, and empties into North Creek south of Mill Creek town center. North Creek then flows for 13 miles (21 kilometers) between Everett and the Sammamish River, following the path of a remnant glacial meltwater channel (Minard 1985; Troost and Booth, *in preparation*).

Due to the natural setting, most soils mapped in the project vicinity have formed in fill, glacial sediment, or wetland deposits. Mukilteo muck, a thick soil composed of herbaceous peat is mapped across most of the project area (Debose and Klungland 1983). Mukilteo soils typically extend up to 140 centimeters below the surface (cmbs) (54 inches) in undisturbed contexts and they overlie fine sandy loam and glacial parent material. Mukilteo soils form within depressions on the glaciated upland landform. Alderwood gravelly sandy loam is mapped at the far south end of the project (Debose and Klungland 1983). Alderwood gravelly sandy loam is a glacial soil that forms in basil till on glaciated uplands. The transition from muck to glacial soils at the south end of the project alignment marks the extent of the kettle lake immediately after glacial retreat. The Thomas Lake basin has been infilling with sediment and organic matter throughout the Holocene.

With the exception of logging infrastructure and minimal farming, the project vicinity was not developed until after Paine Field was constructed in 1936. By the 1990s, the area was extensively developed for commercial, multi-family residential, and single residential uses. The entire project area is now covered with asphalt and fill. The wetlands adjacent to the 35th Avenue SE roadway have been disturbed by rock wall construction, landscaping, utility installation, and road construction. Past disturbance in the project

area is thorough, especially because the proposed excavations are mainly within the filled road embankment.

Flora

Deglaciated surfaces across the Puget Lowland were colonized at the end of the Pleistocene by lodgepole pine and bracken fern with scattered Douglas fir, white pine, spruce, and alder. A gradual expansion of forest and grasslands occurred during the subsequent early Holocene (Barnosky 1984; Barnosky et al. 1987). Vegetation continued to shift throughout the early to middle Holocene in response to fluctuations between warmer, drier climates and slightly cooler, moister conditions. After about 5,000 years ago, conditions stabilized and gradually transitioned to the modern maritime climate that supports the closed forests of western red cedar, hemlock, and Douglas fir with dense shrub and herbaceous understory of sword fern, bracken fern, salal, Oregon grape, ocean spray, blackberry, red huckleberry, and red elderberry that is typical of the *Tsuga heterophylla* zone, which marks the region today (Franklin and Dyrness 1988; Whitlock 1992).

Before the area was developed, freshwater marshes, wetlands, and lakes were common in low-lying areas across the glaciated upland surface. The wetlands would have been interspersed between stands of forest and open prairie areas (Snohomish County Public Works 2002). Wetlands and marshes typically supported plants such as cranberries, cattail, reeds, wapato, nettles, skunk cabbage, and other plant species that would have provided valuable resources to early inhabitants (Franklin and Dyrness 1988; Deur and Turner 2005). Animals would have been hunted in the forests, which also provided cedar wood and bark, as well as other resources. Prairie habitats on the glacial outwash plain were especially valuable to Native Americans for their camas and root resources, and some western Washington prairies were created and/or maintained by Native Americans who burned them to enhance the productivity of certain food plants and forage (Norton 1979; White 1980; Willis 1973). Prairies may have been near the marsh in the project vicinity.

Fauna

Large mammals, including elk, deer, black bear, coyote, bobcat, and mountain lion, once lived in the project vicinity. Smaller animals, including rabbit, squirrel, chipmunk, raccoon, weasel, beaver, and river otter, also inhabited the project area and many still exist in the vicinity (Ingles 1965). Ducks, geese, swans, loons, and other migratory waterfowl were plentiful in area waterways, such as the Penny Creek drainage and around Thomas Lake (Angell and Balcomb 1982; Larrison and Sonnenberg 1968). North Creek and its tributaries hosted several species of salmon and trout. Historically, North Creek supported runs of chinook, sockeye, kokanee, and coho salmon and steelhead and coastal cutthroat trout. Since 1997, volunteers have consistently seen chinook, coho, kokanee and sockeye at various locations along North Creek, and less commonly, chum salmon (King County 2014). In addition to the surrounding terrestrial resources, the nearby coast provided a variety of fish and shellfish to occupants of the project vicinity.

CULTURAL SETTING

The human history of the project vicinity is marked by utilization of the natural resources that the forested wetlands, river and stream valleys, and surrounding uplands have made available. Archaeological and historical evidence indicates that humans moved into the Pacific Northwest at the end of the Pleistocene, occupying western Washington for at least the past 13,000 years and taking advantage of both riverine and terrestrial resources in the region. Similar resources and landforms were favorable for Euroamerican use and settlement, beginning in the 1850s. Euroamerican settlement along major river valleys was accelerated compared to the forested upland, but small communities grew up around logging camps and railroad towns on the glacial plains. Evidence of Native American activities or Euroamerican settlement could be in the project vicinity.

Prehistory

The earliest well-established cultural period in North America, designated the Paleoindian period, is poorly defined in the Puget Sound region and is dated based on a few archaeological sites. A small number of isolated fluted projectile points that are characteristic of the Paleoindian period have been found in Washington (Avey n.d.; Carlson 1990; Kopperl et al. 2010; Meltzer and Dunnell 1987). Other evidence of possible early human occupation involving the pursuit of now-extinct fauna was found at the Manis mastodon site on the Olympic Peninsula, radiocarbon dated to about 12,000 years ago (Gustafson and Manis 1984; Kirk and Daugherty 1978). Inferences about Paleoindian lifeways have been limited to presumptions of tool function based on the isolated stone tools and their rare association with large extinct mammals with few insights on subsistence economy or other aspects of culture. The projectile point styles of the Paleoindian period did not persist past 10,000 years ago, when they were replaced by regional variants of lithic technology (Carlson and Dalla Bona 1996).

Human occupation during the early and middle Holocene is better understood than the Paleoindian period because of several archaeological sites in the region. Archaeological sites that represent the Early period from 8000 to 5000 years ago are locally termed “Olcott” (Butler 1961; Fladmark 1982; Kidd 1964; Mattson 1985). Typical Olcott artifacts are large stemmed or leaf-shaped points, scrapers, flake tools and blade cores formed of basalt and dacite toolstone (Carlson 1990). Olcott sites are usually located on glacial terraces near the coast or along lakes on the glacial uplands, such as Thomas Lake in the project vicinity (Wessen and Welch 1991). Many Olcott sites are classified as stone tool manufacturing sites and archaeological features, such as hearths, structures, and faunal and plant remains, are usually absent (Blukis Onat et al. 2000; Morgan 1999). Age estimates of Olcott sites have been inferred based on their similarity to dated components of assemblages from archaeological sites in British Columbia, as well as using projectile point cross-dating, obsidian hydration analysis, and luminescence dating of two archaeological sites near Granite Falls, Washington (Carlson and Dalla Bona 1996; Chatters et al. 2011).

River morphology changed around 5,000 years ago as a result of equilibrium reached between sea-level rise and rebound of the land from the weight of glacial ice. Immediately after glacial retreat, sea-level in the Puget Sound was up to 60 meters (198 feet) below modern sea-level (Dethier et al. 1995). During this time period the region’s rivers would have actively downcut through the glacial valley fill and use and occupation sites arose on the surrounding glacial terraces. Sea-level rose to within 5 meters (16 feet) of modern sea-level by about 5000 years ago, after which sedimentation occurred on the floodplain and useful and habitable landforms such as levees, alluvial terraces, and point bars developed (Booth et al. 2004; Dethier et al. 1995). Increased evidence of human occupation corresponds with

landform stabilization between about 5000 and 2500 years ago, called the Middle period. Socio-economic organization became more complex and population grew during the Middle period (Matson and Coupland 1995). Subsistence also gradually transitioned to a more marine resource base with a diminishing dependence on mammals (Ames and Maschner 1999). The exploitation of additional resources corresponded with a shift to seasonal economic strategies. The seasonality of subsistence is evidenced by a variety of archaeological sites, site distributions, and artifact types that date to the Middle period. For example, new artifacts types such as groundstone tools for season plant processing and toggling harpoons used for season fishing appear at resource processing sites in the local archaeological record after 5000 BP (Ames and Maschner 1999; Matson and Coupland 1995). Evidence of specialized subsistence is more common in coastal Middle period sites compared to archaeological sites in the interior valleys, such as the Snohomish River Valley to the north. The increased visibility of younger sites in the archaeological record is due, in part, to cultural shifts. Increased visibility may also relate to modern population density, as development-related site identification is concentrated along the Puget Sound shoreline that was also preferred for occupation by the Middle period people.

Native American culture shows further differentiation based on subsistence strategy between 2,500 years ago and Euroamerican contact, during the Late period. The Late period is characterized by a marine-oriented culture on the Pacific Coast, a mixed marine and terrestrial economy on the Puget Sound, and a terrestrial mammal and riverine fishing culture inland (Ames and Maschner 1999; Blukis Onat 1987). Large semi-sedentary populations occupied cedar plank houses on protected tidal shorelines and at river confluences. Seasonal camps were used for hunting, fishing, or resource gathering during the spring, summer, and fall (Ames and Maschner 1999). Archaeological evidence for these settlement and subsistence patterns can be seen in the greater diversity of hunting, fishing, plant processing, and woodworking tools made of local and imported materials found in Late period sites. Wealth-status objects, status differentiation in burials, art objects, and ornaments are also represented (Ames and Maschner 1999; Blukis Onat 1987; Fladmark 1982; Matson and Coupland 1995).

Regional Late period sites were initially investigated during Dunnell and Fuller's survey of the lower Snohomish estuary and Mattson's excavations at Hibulb, a shell mound at the mouth of the Snohomish River that represents a winter village (Dunnell and Fuller 1975; Mattson 1971). Additional shell midden sites have been found along the coast, as well as small seasonal shell midden sites and non-shell or lithic sites along river distributaries, and several radiocarbon dates from these sites date the late period settlement pattern to about 2,000 years ago (Dunnell and Fuller 1975). New types of prehistoric settlements were identified as archaeological work in the area increased through the 1970s and 1980s. For example, 45SN49, a site just east of Snohomish, was interpreted as a possible late period seasonal fishing station (Chatters and Thompson 1978).

Ethnography and Ethnohistory

The project is within the area occupied by the Snohomish, whose descendants along with those of neighboring Coast Salish groups comprise the Tulalip Tribes today. The Snohomish lived along the Snohomish River, on the southern tip of Camano Island, on Whidbey Island, and upriver as far as Monroe (Ruby and Brown 1992; Tweddell 1974). Adjacent groups included the Stillaguamish to the north who lived along the Stillaguamish River and its tributaries (Bruseth 1949). Other neighbors included the Snoqualmie whose villages were inland and upstream along the Snohomish and Snoqualmie Rivers; the Sammamish to the south along the Sammamish River and the shores of Lake Washington; and the Swinomish, Lummi, and Skagit on the islands and mainland to the north (Ruby and Brown 1992; Tweddell 1974). Trade and intermarriage relationships helped supplement the local

resources and strengthened bonds between people inland and those living on the coast to the other side of the Cascades (Blukis Onat et al. 1980; Lane and Lane 1977; Smith 1988).

In the winter, extended groups congregated in semi-permanent winter villages situated at the confluence of major rivers with smaller tributaries or near the a river's mouth on the coast (Haeberlin and Gunther 1930; Lane and Lane 1977). Family groups formed seasonal camps for fishing, hunting, and gathering as they moved throughout the territory in search of available resources such as fish runs, game and ripening berries (Blukis Onat 1980; Haeberlin and Gunther 1930; Smith 1940). Salmon formed a significant part of the native diet. Other resources included freshwater fish, deer, bear, small mammals, waterfowl, and other marine resources including sea mammals, clams, crabs, shrimp, oysters, mussels, and other invertebrates. Numerous plant species such as trees, greens, roots, bulbs, and berries were important as food, raw material, and medicinal resources. Lilies, salmon berries, crabapple, cranberries, gray currants, wild carrot, cattail, wapato, and ferns were among the important vegetable foods that would have been available in the marshy project area (Haeberlin and Gunther 1930; Suttles 1990). Marshes would have also provided alder, basket sedge, horsetail, skunk cabbage, willow, tule plants for dyes, mats, baskets, and other uses (Deur and Turner 2005). During the winter, stored foods such as salmon and game, shellfish, berries, and camas roots provided sustenance. Months passed in the winter villages were spent making or repairing tools, clothing, baskets, and other items, and in tending to social relationships through visiting, trading, and shared festivities and religious practices (Haeberlin and Gunther 1930; Miller 1999; Smith 1940). As the first greens became available in the spring, the extended group began to break into smaller task groups that left the village to move again into the season of food gathering.

As in other areas of the Pacific Northwest, increasing Euroamerican presence subjected the native inhabitants to the pressures of disease and changing lifeways (Boyd 1999; Campbell 1989). In 1855, the governor of Washington Territory Isaac Stevens oversaw the Treaty of Point Elliott that led to establishment of reservations. The Tulalip Reservation was authorized under the treaty and enlarged in 1873 as the home for various groups, including the Snohomish, Stillaguamish, Snoqualmie, Skykomish, and other allied tribes and bands known today as the Tulalip Tribes of Washington. Some among these groups moved to reservation lands, while others remained living in their traditional lands. A significant cultural and economic milestone occurred in 1979 when the U.S. Supreme Court upheld the 1974 Boldt decision (U.S. vs. Washington), reinforcing the tribal fishing rights reserved in the Point Elliott Treaty.

Euroamerican History

European exploration of the area that is now Washington State began at the start of the 18th century with Spanish explorations in the Strait of Juan de Fuca and the southern Strait of Georgia. In 1792, Captain George Vancouver's expedition mapped and named a number Puget Sound features (Hayes 1999). In the 1820s and 1830s, the Hudson's Bay Company's established Fort Langley, Fort Nisqually, Fort Vancouver, and Fort Victoria on Vancouver Island. Prospectors and surveyors followed the fur traders into the region (Hayes 1999). With the Donation Land Claim Act of 1850, migrants seeking homestead lands made their way north and after logging the land, they began to farm.

Euroamerican settlement began on the Puget Sound coast where small mills could be situated to extract timber and water transport facilitated the movement of supplies to mills and transport of logs to market. Inland settlement was slowed by the shallow waters of the Snohomish River and log jams on the Skagit and Stillaguamish Rivers that prevented up-river navigation by boat into rough and remote terrain. Settlement generally followed a pattern of homestead or mining claims, small towns, and saw mill operations making their way upriver and along major tributaries. Settlements grew as trails turned

to wagon roads. Logging that initially began with small scale land-clearing for homesteads grew into a major industry throughout Snohomish County, accelerated by the arrival of the railroads.

Early landowners in the same section as the project include Peter Mills, who bought land in 1872, and Charles Seybert, who bought land nearby in 1873. The general land office (GLO) plat from the 1871 land survey shows no historic features related to these landowners, but Penny Creek and Thomas Lake are shown as a wetland in the project area (Office of United States Surveyor General 1871). Farming was a common occupation for the settlers of the project vicinity because they were able to take advantage of the freshwater marshland. By 1883, the settlers successfully began ditching and draining the wetlands to raise berries, produce, and cattle (Whitfield 1926). Thomas A. Davis and John G. F. Heir both filed homestead claims around Thomas Lake in 1890. John G. Thomas, George Kattenhorn, William Lee, C. S. Shook, Henry H. Rice, and Henry B. Reynolds all bought land in the project vicinity between 1890 and 1892 (U.S. Department of the Interior Bureau of Land Management 2014). A wetland with a lake is shown on an 1897 USGS map of the project area and although no buildings are shown in the immediate project vicinity, roads and homes are south and east of the project area by that time (USGS 1897) (Figure 2). On the historic map, the wetland is shown as slightly smaller than soil maps illustrate the maximum extent of wetland soils. This suggests the margins of the wetland were infilling during the early historic period.

Situated between the expanding city of Seattle to the south and the towns of Everett and Mukilteo to the north, the project area grew up around transportation that linked timber enterprises with their markets. The Military Road from Seattle to Ft. Bellingham in the north was the first wagon road to pass through Snohomish County. In 1889, the Great Northern Railroad arrived in Western Washington. Local transportation began to develop, including the Seattle and Montana Railroad, which ran north to Bellingham through Snohomish County and on to Canada by 1890 (Cameron et al. 2005). Speculation that the Great Northern transcontinental Railroad would choose Everett as its terminus accelerated growth in the town and surrounding areas. Even though Seattle was chosen as the terminus when the railroad was completed in 1893, growth related to the mining and timber industries around Everett continued, bringing opportunity to the whole area. Small logging railroads proliferated in Snohomish County as logging companies and mills sought to exploit timber deeper inland. But it was development of the Everett-Seattle Interurban Railway beginning in 1906 that really spurred on growth of smaller surrounding communities in the project vicinity. In 1907, the railway reached Lynnwood, southwest of the project vicinity, and within a few years continued north through virgin timberlands to Everett. The railway provided transport for passengers as well as farm and dairy produce, enabling small sellers to participate in more expanded markets and integrating the outlying farms and dairy operations into the market systems of Seattle, Everett, and Tacoma.

In 1910, the land on the west side of what is now 35th Avenue SE was owned by Thomas Davis and John Thomas. Land on the east side of what is now 35th Avenue SE was owned by Henry Martin and Ashbel M. Fuller (Anderson Map Company 1910). Thomas Davis' homestead appears on the east side of 35th Ave SE in 1910, just south of the wetland associated with Thomas Lake (Anderson Map Company 1910) (Figure 3). By 1927, Thomas Davis' land was split up and sold to R. Atnold, Morgan Davis, and A. C. Edwards (Metsker Map Company 1927). John G. Thomas still owned the land north of the project and the Martin family still owned land on the east side of what is now 35th Avenue SE in 1927, but Ashbel Fuller's land was sold to Everett G. Clark (Metsker Map Company 1927). By 1934, the Lakeview Farms development was platted southwest of the project and John G. Thomas' land in the west half of the project area had been sold to W.P. Lockwood. The Edwards and Martin families retained the land in the east half of the project area and Everett G. Clark passed his land on to Esther Clark-Morgan. No structures are shown in the immediate project vicinity on any of these historical maps.

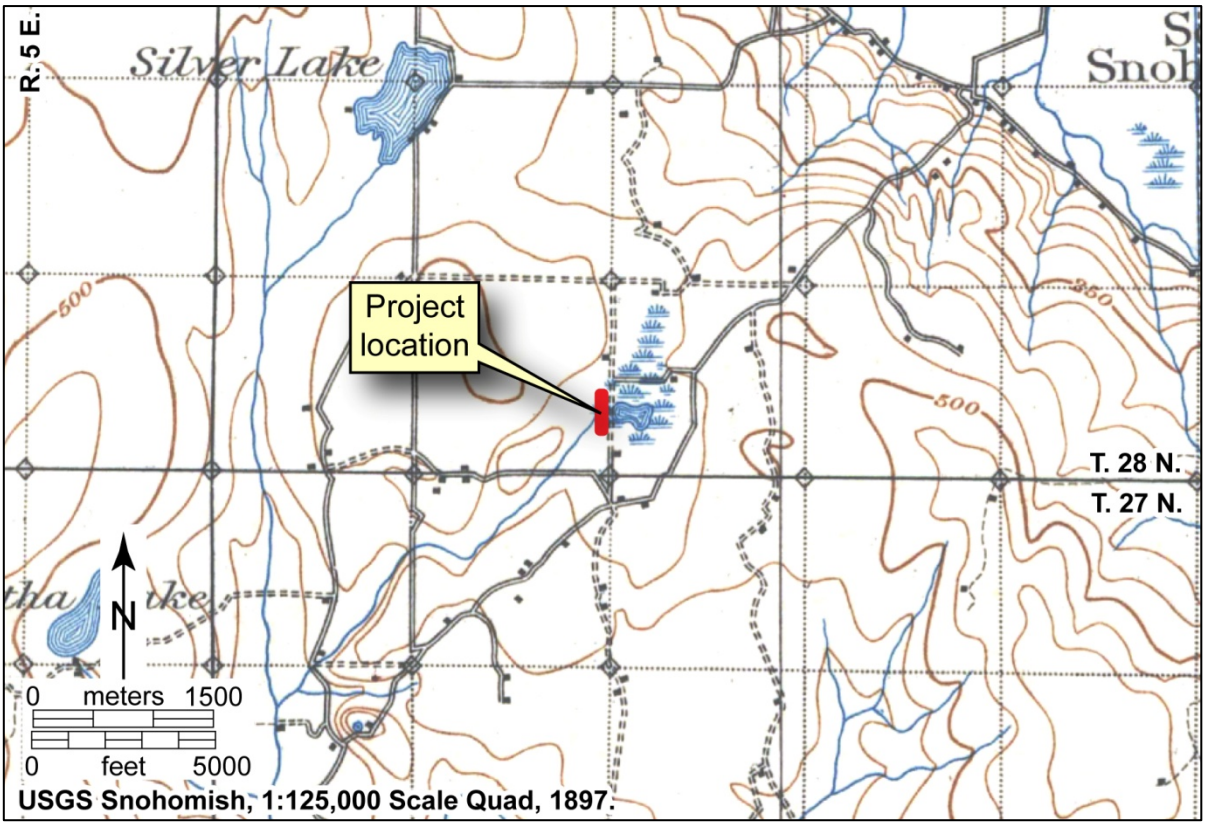

Figure 2. Historic map, 1897, showing Thomas Lake, the wetlands in the Project area, and roads to the south and east.

In 1936, Paine Field, named in honor of World War 1 Air Corps pilot Topliff Olin Paine, was built in south Everett, northwest of the project area. Originally planned as a commercial airport for Snohomish County and funded by the Works Progress Administration, it became a military field during both World War II from 1941 to 1946 and the Korean Conflict in 1951. The airway was used for both military and commercial purposes until the mid-1960s when Snohomish County, which still manages the site, took it over for commercial use (Riddle 2007). Purchase of adjacent land in 1966 by the Boeing Corporation as the building site of its 747 Jumbo Jet aircraft led to development of Paine Field as an important aviation center that has housed Alaska Airlines, the Willard Flying School, Curtiss-Wright Flight Systems, Crown Aviation, Honeywell, and Goodrich Aviation Technical Services that all brought more people to the project vicinity (Riddle 2007). Rapid residential and commercial development in the late 1990s and 2000s occurred to accommodate the growing population related to Snohomish County jobs in the technology sector. Today, the area consists of a variety of residential homes and commercial development.

PREVIOUS INVESTIGATIONS

The project area lies in a portion of Washington State that has received relatively little attention from archaeologists. For example, no archaeological sites have been previously recorded within one mile of the project. One cemetery, the Advent Lutheran Church columbarium at 4306 132th Street SE recorded as 45SN603, is 0.7 miles (1.1 kilometers) northeast of the project area (DAHP 2014). The closest

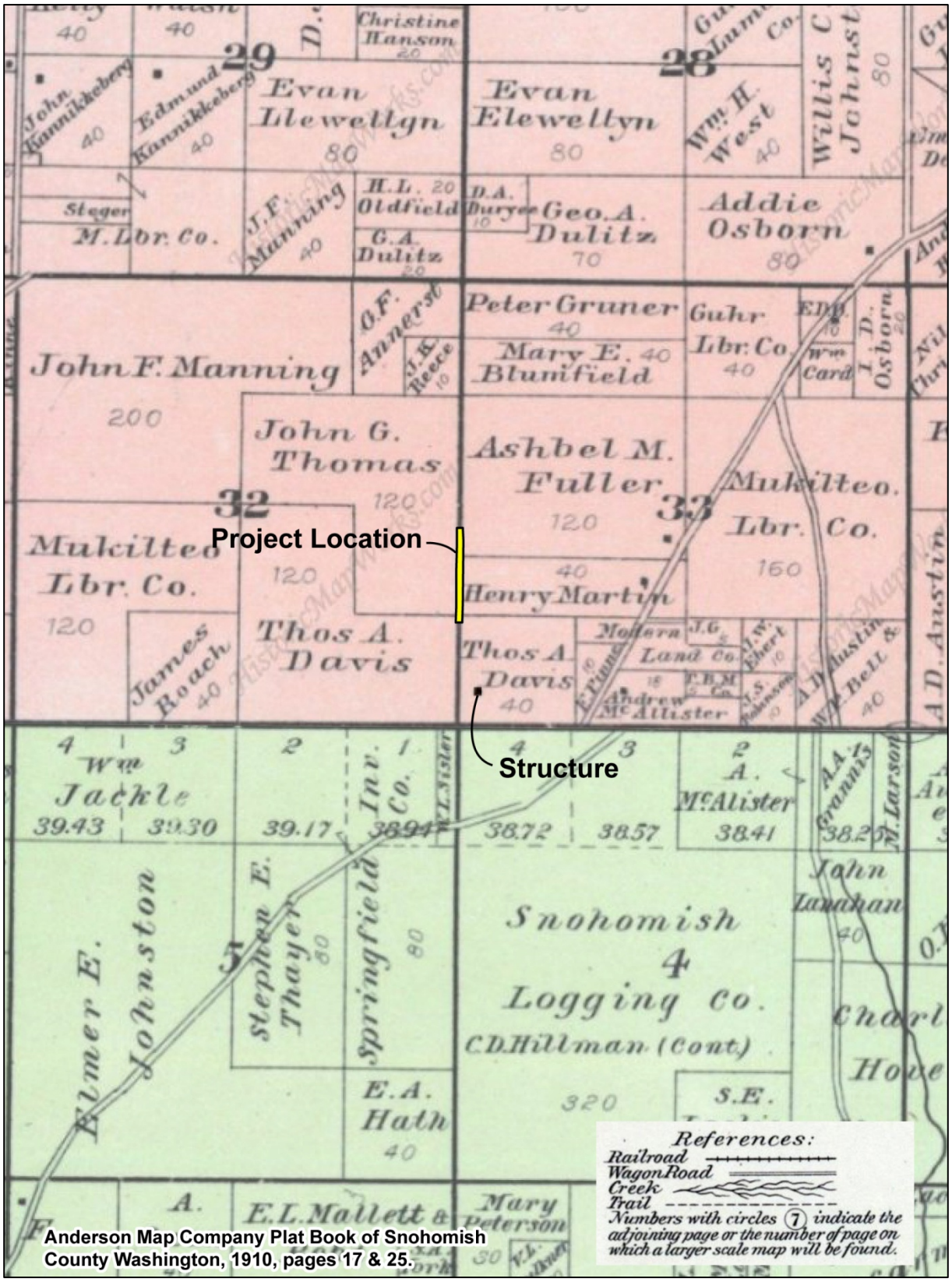

Figure 3. Anderson Map Company map, 1910, showing a structure on Thomas A. Davis' land south of the project area.

previously recorded site to the project area is 45SN44, which is a precontact basalt bipoint isolate dated by style to the Olcott period, identified 1.6 miles (2.6 kilometers) northeast of the project area along an unnamed creek on the edge of the Snohomish River valley (Mattson 1976; Obermayr 1991). The low number of recorded archaeological resources may be partially due to the limited available data, as only a few surveys have been previously completed in the vicinity. Just five cultural resources investigations have been completed within one mile of the project and only one of the five investigations included a sub-surface survey component.

Earlier cultural resources investigations of the area tended to be in the form of large overviews and inventories (Table 1). For example, Thompson and Schwin (1978) presented an overview of the prehistoric and historic resources known to exist along 132nd Street SE in 1978 for Washington State Department of Transportation roadway improvements. They identified two buildings considered potentially eligible for listing in the National Register of Historic Places around Murphy's, Rees, and Osborn Corners and they discussed 45SN44. All three of these potentially significant resources are far northeast of the project area.

Table 1. Previous Cultural Resource Investigations Within Approximately One Mile of the Project Area.

AUTHOR	DATE	PROJECT	RELATION TO PROJECT AREA	RESULTS*
Thompson and Schwin	1978	An Overview of Prehistoric and Historic Resources for the 132nd S.E. Roadway Improvement and Extension Project	0.6 mi N	None
Blukis Onat	1987	Resource Protection Planning Process Identification of Prehistoric Archaeological Resources in the Northern Puget Sound Study-Unit	Encompasses	None
Miss and Campbell	1991	Prehistoric Cultural Resources of Snohomish County, Washington	Encompasses	None
Snohomish County Historical Commission	2005	Snohomish County Cultural Resource Inventory: 2005	Encompasses	None
Elder et al.	2013	Cultural Resources Survey Report Seattle Hill Road Improvement Project (RC 1653)	0.4 mi E	None

*Newly recorded cultural material identified within one mile of project area.

Blukis Onat (1987) completed an inventory of prehistoric archaeological resources in northern Puget Sound for the Office of Archaeology and Historic Preservation (OAHP [now DAHP]), which included Snohomish County. The overview report provides a wide range of detailed information on the natural and cultural setting of the region, as well as a summary of previous archaeological research. The inventoried sites were classified by site type and were divided by landform association. Blukis Onat (1987) did not include any sites in the project vicinity in her inventory, as most Snohomish County sites are recorded along the Snohomish River in the lowlands north and west of the project. Miss and Campbell (1991) prepared another prehistoric overview for DAHP (then OAHP) to locate and update the 98 prehistoric sites in Snohomish County recorded prior to 1983. Miss and Campbell (1991) reiterate Blukis-Onat's (1987) conclusions about site type and landforms associations, and they provide an even more specific natural and cultural setting context. They also describe all the previous excavations that occurred at Snohomish County sites recorded as of 1983, and as a result, identified data gaps where limited new reconnaissance survey was undertaken. At the end of their overview study, they provide research domains and data categories to use when evaluating the Snohomish County sites. Cultural materials were not identified in the project vicinity; however, the background information in these overview studies applies to the project area.

DAHP also commissioned a study of historical resources in Snohomish County. The Snohomish County Historical Commission (2005) inventoried the county's historical resources to provide them with an overview of the historic resources in the county and to give them a framework within which to work in

providing for the protection and preservation of those resources, organized by chronology, geography and theme. The inventory started with an examination of the overall history of the county and an attempt to include properties that were representative of each era. The actual field work followed the geography of the county along the coastal plain and then up the river valleys. The Bates-Tanner Farm, the North Creek School, and the Winningham Farm in Bothell, as well as the Willis D. Tucker Home and Linert Residence in Snohomish are the closest of the 67 properties identified in during the study. However, no historical resources were identified within a mile of the project. The report provides a good historical context and useful research domains.

Finally, Elder et al. (2013) conducted cultural resources investigations near the Project area for improvements to Seattle Hill Road between 35th Ave SE and 132nd Street SE for Snohomish County Public Works, which included pedestrian survey, shovel probe excavations, and historic resources reconnaissance. Residences at 13717 Seattle Hill Road and 3601 Seattle Hill Road were found to be older than 45 years of age, but they were determined not eligible for the NRHP. No archaeological materials were identified during their survey

EXPECTATIONS

The project area holds an overall moderate potential for harboring significant cultural resources because of its natural and cultural setting. The glacial upland as a whole generally exhibits low potential for buried cultural resources; however, specific sub-environments on the glacial upland signal heightened sensitivity for archaeological materials. Such sub-environments include creek valleys, wetland and lake margins, and overlooks or viewpoints. If cultural materials are present in the project area, they may be identified near the surface or buried deeply, depending on the specific depositional environment and the local thickness of fill. Most archaeological resources associated with glacial outwash, which underlies the south end of the project alignment, would be identified near the surface where fill is absent. Archaeological materials near Penny Creek or its wetlands could be more deeply buried within younger alluvium and below fill. The fill may include significant historical cultural materials if stable surfaces are identified between episodic fill layers.

There is moderate potential for encountering significant, intact, precontact archaeological resources in the project area. This is especially true along the margins of Thomas Lake and the associated Penny Creek wetlands, as these landforms represented favorable locations for past resource procurement and processing. Penny Creek flows into North Creek, known as *Ctcel* by Native Americans, the largest waterway in the North Creek Basin that feeds into Lake Washington. North Creek is a salmon bearing stream that almost certainly provided Native Americans living in the vicinity with fish and other resources over the past approximately 10,000 years (Waterman 2001).

Isolated Clovis points have been found in other Puget Lowland peat bogs. One point was identified in peat deposits near Yukon Harbor, approximately 29 miles (mi) (47 kilometers [km]) southwest of the project, and a second was associated with peat from Maple Heights, approximately 30 mi (48 km) south of the project (LeTourneau 2010; Meltzer and Dunnell 1987). The Clovis points were not found in an archaeological context, but a PaleoIndian site with basally-thinned, concave-base projectile points that are similar to Clovis points was identified beneath peat dated to about 10,000 years old on the Sammamish River, about 14 mi (22.5 km) south of the project (Kopperl et al. 2010). The identified artifacts show that kettle lakes were important landforms to Native Americans living on the glacial upland.

The types of precontact archaeological sites that might be identified at the far south end of the project area include small temporary camps or processing and cooking areas. Isolated artifacts that were dropped or discarded during use in the wetland could be identified throughout the project area. The ancient margins of kettle lakes are commonly buried below younger muck and fill and burial of the lake margins could have preserved any associated cultural materials. The ancient margin of Thomas Lake is approximately at 144th Street SE. The effects of past road construction and sinking along the project alignment does temper the likelihood of encountering intact precontact period cultural resources.

There is low to moderate potential for encountering significant, intact historical cultural resources in the project area. The area would have required filling or ditching and draining in order to be useful to early settlers. The most probable evidence of early historical activities to be encountered in the project area would be in the form of an older buried road surface, old bridge features, water management features, small structural elements, or ditches. The southeast corner of the project area hosts the highest potential for encountering significant historical archaeological resources because it is drier and is nearest to an early homestead. The fill across the project area may contain buried stable surfaces with associated cultural materials that were buried as the land depressed; however, road construction and sinking along the project alignment also tempers the likelihood of encountering intact historical cultural resources.

METHODS

Following completion of a utilities locate [RCW 19.122], reconnaissance survey of the alignments was completed by the SWCA project geoarchaeologist and a technician in order to identify cultural resources, as well as note historic and modern disturbance and the elevation of the road surface above (or below) the original grade. During survey, the geoarchaeologist assessed the potential for buried archaeological deposits and their likely locations. The geoarchaeologist took notes documenting the road conditions and associated disturbance on standard forms. The geoarchaeologist and archaeologist took photographs of the entire project area and sub-surface excavations, and kept logs of all photographs taken during the survey.

Sub-surface survey included excavation of two shovel probes (SP) measuring 40 centimeters [cm] (1.3 ft) in diameter. The shovel probes were excavated to depths ranging from 100 to 200 centimeters below the surface [cmbs] (3.3 to 6.6 ft below the surface [fbs]) by the archaeologist, at which depths impenetrable objects were encountered. A 10-cm-diameter (4-inch-diameter) bucket auger was used to advance SP-2 beyond 100 cmbs (3.3 fbs). The probes were excavated in 20 cm (8-inch) increments and all sediments from the shovel probes were screened through ¼-inch (0.6 cm) hardware mesh. After the sediments were examined for cultural materials and their lithologic characteristics, such as color, texture, soil formation, sorting, and inclusions were recorded on standard forms, the probes were backfilled. The archaeologists collected UTM coordinates of the probes with a handheld Trimble GPS.

RESULTS

The south end of the project area is characterized by a glacial plain riser that dips gently north. Wetlands associated with Penny Creek are at the west edge of Thomas Lake at the toe of the riser slope (Figure 4). 35th Avenue SE stretches across the glacial sediment at the south end of the project and onto the wetland deposits at the north end of the project. According to previously drilled geotechnical

Figure 4. Overview of the project area, looking north from the toe of the glacial plain riser onto the lower elevation wetlands associated with Penny Creek and Thomas Lake.

boreholes and as-built road plans, up to 3.3 m (10 ft) of woody and gravelly fill was used to raise the road above standing water in the wetlands and over Penny Creek, which now passes under 35th Avenue SE through a culvert. The fill was placed as road bed during different periods of road construction in the past. Less fill was placed at the south end of the project where the road prism meets the glacial plain and more fill was used to fill in the wetlands to the north. Naturally deposited wetland sediment is below the thicker fill, overlying the deeply buried glacial deposits. Two archaeological shovel probes allowed further characterization of the fill across the project area and the naturally deposited sediment below the fill at the south end of the project. No significant cultural materials were identified.

Geotechnical Borehole Analysis

Existing geotechnical reports provide information on the sediment below the asphalt across the project area. Shannon & Wilson, Inc. (2013) prepared a concept level geotechnical study for the project area and summarized all the previous boreholes drilled by Snohomish County Public Works and AGRA Earth and Environmental (AGRA 1995; SCPW 1993). The existing borehole results were entered into Rockworks, a database software program that allows the user to construct representative cross-sections to scale and analyze stratigraphic data.

Results of ten previously drilled geotechnical boreholes show four strata in the project area (Figures 5 and 6). From bottom to top, they are advance outwash, till, peat, and fill (Table 2) (Shannon & Wilson 2013). Gravelly, sandy advance outwash was identified below peat across the project area. The upper contact of the outwash dips from the modern surface at the south edge of the project to between 12.8 and 14.3 m below the surface [mbs] (42 and 47 fbs) below Penny Creek. This boundary rises to 4.1 mbs (13.5 fbs) north of the project area.

Figure 5. Locations of the previously drilled geotechnical boreholes used for the borehole analysis.

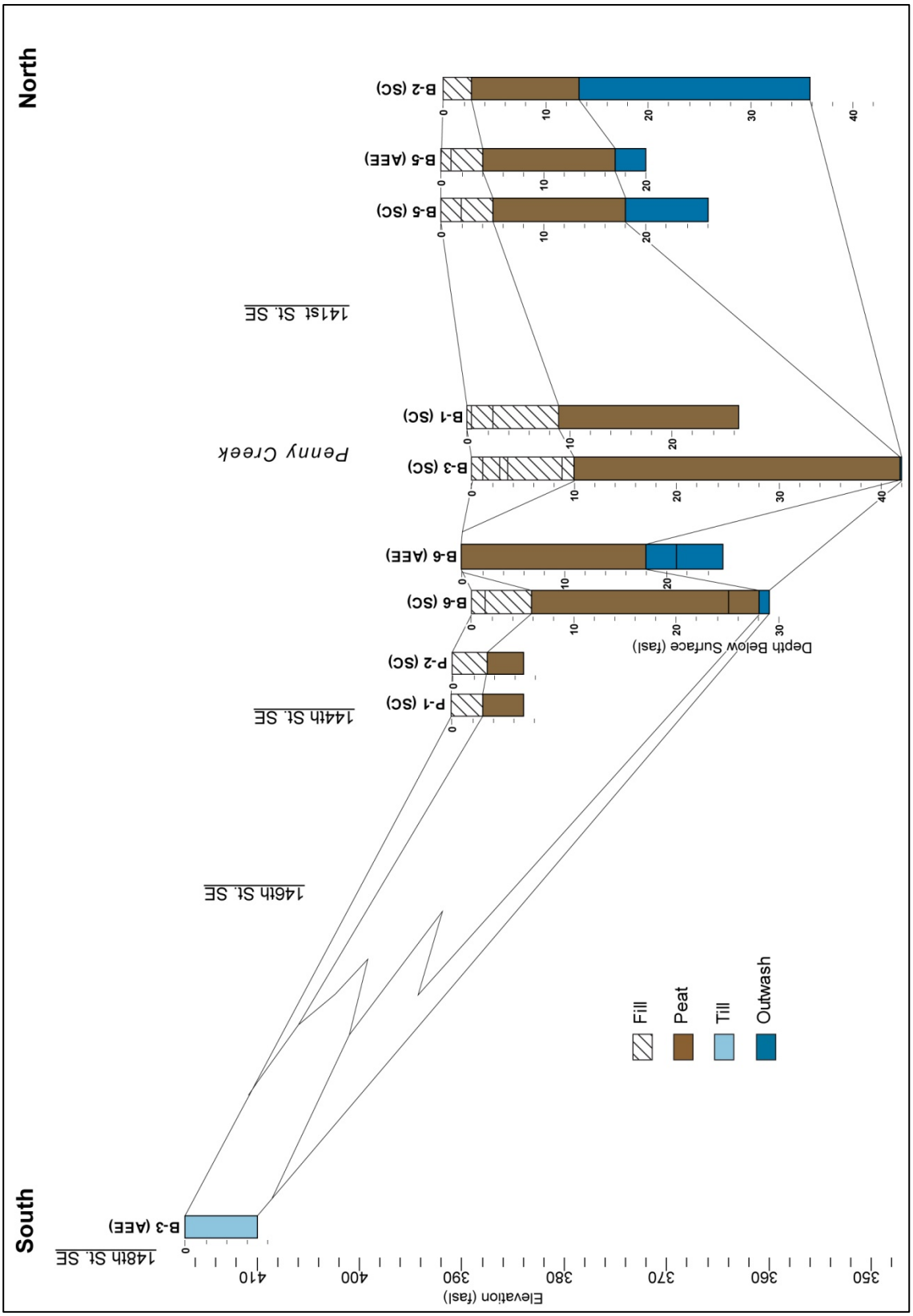

Figure 6. Cross-section of the project area, showing results of previously drilled boreholes.

Table 2. Typical Descriptions of the Strata Identified in Boreholes Drilled along 35th Avenue SE.

STRATUM	DESCRIPTION
Fill	Variable deposit; usually consists of dark brown to gray, sandy gravels or sometimes silty, gravelly, fine to very coarse sand with few to many roots and small to large woody debris; gravels are common to many, sub-rounded to sub-angular, very small pebbles to large cobbles; few layers of brown, gravelly, fine to coarse sandy, wood chips.
Peat	Brown to reddish brown, sometimes clayey, silty, peat with many fine organic fibers, few fine roots, and common, small woody debris.
Till	Bluish to brownish gray, gravelly, silty, fine to very coarse sand; poorly-sorted.
Advance Outwash	Gray; gravelly, fine to coarse sand or very silty, gravelly, fine to medium sand; gravels are few, small to medium pebbles; compact.

Till was identified on top of outwash in boreholes drilled south of the project area where the till is about 2.15 m (7 ft) thick. Silty peat was identified on top of the outwash and below fill, marking the ancient extent of Thomas Lake. The peat is interbedded with gravel and sand near Penny Creek. The previous geotechnical investigations show 50 cm to 3.3 m (1.5 to 10 ft) of road fill overlying up to 9.8 m (32 ft) of saturated peat and organic-silt. The borelog for B-3(SC) mentions that the fill contains a buried layer of asphalt and an even more deeply buried layer of logs that may represent an earlier historical road surfaces at 82 cmbs (2.7 fbs) and 2.7 to 3 mbs (8.8 to 10 fbs), respectively. A summary of the geotechnical borelogs and basic interpretations are in Appendix B.

Shovel Probe Survey

Placement of fill and construction of the 35th Avenue SE road embankment caused disturbance of the surface sediments in both the wetland and across the glacial plain. Other sources of disturbance along the project alignment include sidewalks, fences, utilities, power and telephone poles, a detention vault at the southeast corner of the project, and drainage ditches. These elements, in addition to standing water that varied from 25 to at least 90 cm (10 inches to 3 ft) deep in the wetland portions of the project area, limited surface visibility and made survey challenging (Figure 7). It was difficult to determine the thickness of the road embankment, for example, due to the standing water (Figure 8). The margins of the wetland are drier during the summer, but the wetland is extensive and probably does not dry out completely most years.

Still, the archaeologists were able focus sub-surface survey investigations on drier portions of the project area, at the north and south ends where the elevation is slightly higher (Figure 9). Fill was identified between 0 and 100 cmbs (0 and 3.3 fbs) in SP-1 and SP-2. No significant cultural materials were identified in the probes, but scattered fragments of plastic and one shard of clear flat glass were identified in the fill. A summary of the shovel probes is in Appendix B. In SP-1, the fill above 60 cmbs (2 fbs) was composed of loose, gravelly, silty, sandy, woody debris, while the fill from 65 to 100 cmbs (2.1 to 3.3 fbs) was comprised of mottled bluish and brownish gray, silty, gravelly sand with a compact, sticky consistency that suggests the lower fill originated as till (Figure 10). A surface within the fill is represented by a woody layer with roots from 60 to 65 cmbs (2 to 2.1 fbs), but no cultural materials were identified. This surface within the fill may correlate with the road surface identified at 82 cmbs (2.7 fbs) in geotechnical borehole B-3(SC). The boundary between the fill and peat was not intersected by SP-1 and the potential remains for buried archaeological materials to be within more deeply buried fill or the underlying peat at the north end of the project (Figure 11).

In SP-2, the fill above 80 cmbs (2.6 fbs) is loose and contains sandy gravels with many woody debris (Figures 12 and 13). Brown to reddish brown, sometimes clayey, silty, peat with organic fibers and small woody debris is below the fill from 80 to 155 cmbs (2.6 to 5 fbs). This peat deposit is interpreted as historical peat based on its stratigraphic position. Two 10 to 15 cm (4 to 6 inch) thick interbeds of

Figure 7. Standing water across the wetland near the intersection of 35th Avenue SE and 144th Street SE, view northeast toward 35th Avenue SE.

Figure 8. At least 1 meter (3.3 feet) of standing water at the Penny Creek crossing near the lowest point in 35th Avenue SE, view northeast from 35th Avenue SE.

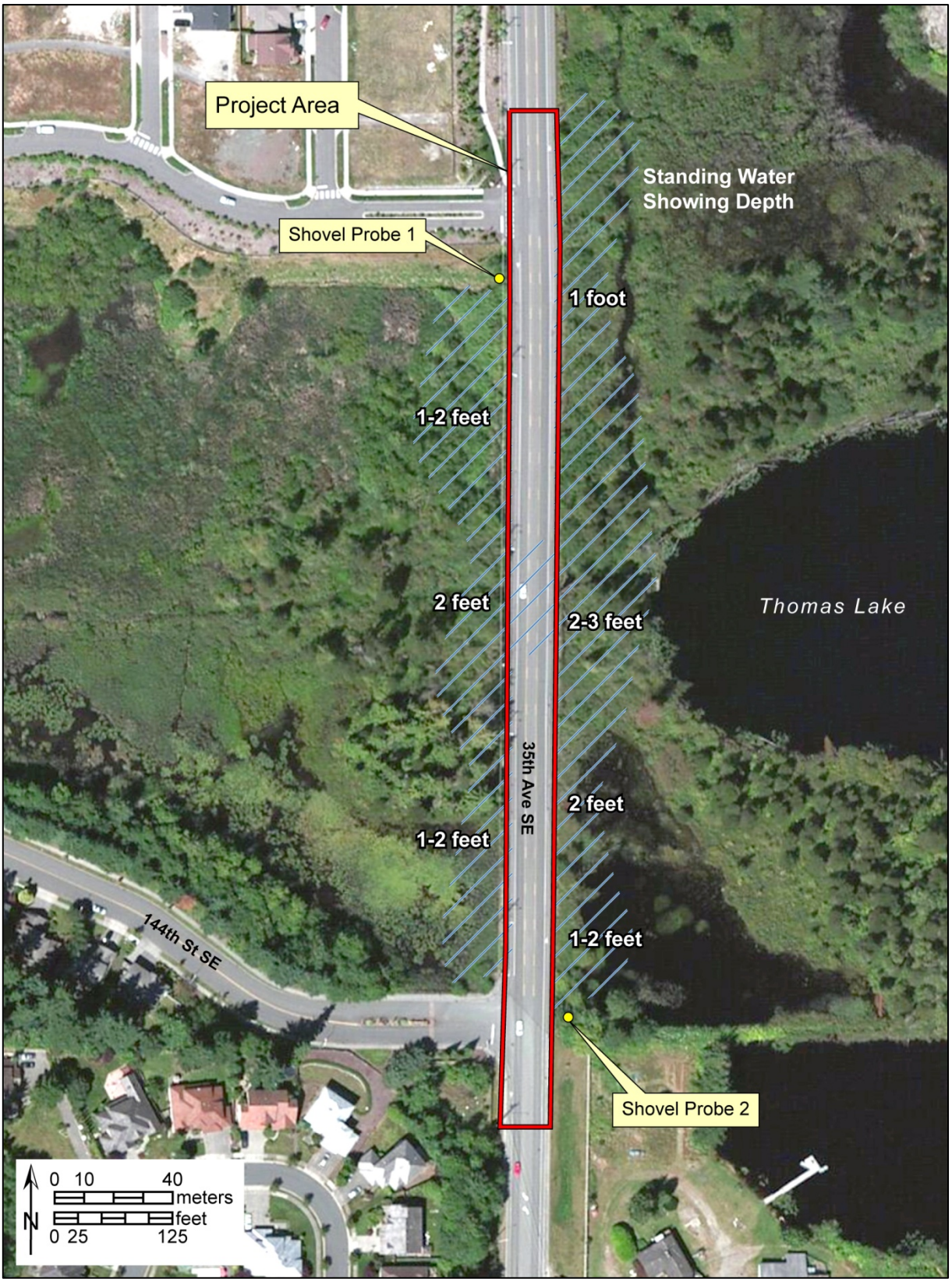

Figure 9. Project area, showing the shovel probe locations and extent of standing water across the wetlands.

Figure 10. SP-1 excavated to 100 cmbs (3.3 fbs), showing woody fill above the water table at 60 cmbs (2 fbs).

Figure 11. Overview of SP-1 location at the northwest corner of the project area where the fill is just thick enough to raise the elevation above the wetland, view south along 35th Avenue SE.

Figure 12. Overview of SP-2 location at the south edge of the wetland near Thomas Lake, view northwest from a filled area toward 35th Avenue SE.

Figure 13. SP-2 excavated to 200 cmbs (6.6 fbs), showing fill above the water table at 45 cmbs (1.5 fbs).

gravelly sand lie between 155 and 165 cmbs (5 and 5.4 fbs). The beds were interpreted to be historical alluvium or historically disturbed outwash. Additional layers of older silty peat were identified between 165 and 175 cmbs (5.4 to 5.7 fbs), overlying glacial sediment (Figure 14). Glacial deposits were encountered between 175 and 200 cmbs (5.7 and 6.6 fbs). The upper contact of the glacial sediment marks the extent of sensitivity for buried cultural resources at the south end of the project area, where the Holocene-aged peat laps onto the glacial plain.

Figure 14. Sediment from about 165 to 185 cmbs in SP-2; trowel points toward the top of the auger sample.

RECOMMENDATIONS AND CONCLUSION

Although cultural materials were not identified, future planning should take into account the potential for discovery of unrecorded archeological sites described in this overview. SWCA recommends the City select the construction alternative with the smallest overall ground disturbance footprint. SWCA also recommends archaeological monitoring of construction based on the potential for buried archaeological resources in the project area and the limited access prior to construction due to asphalt cover and thick woody fill. Archaeological materials, if present in the project area, would most likely be associated with buried surfaces in the lower fill or uppermost peat. Based on existing borehole data and limited sub-surface testing, SWCA recommends that the archaeological monitor observe excavations between 0 and 100 cmbs (0 and 3.3 fbs) south of 144th Street SE and excavations below about 50 cmbs (1.6 fbs) north of 144th Street SE. Archaeological monitoring should focus on the south end of the alignment because potential for encountering buried cultural materials increases along the margins of the wetland and glacial plain. No additional archaeological investigations are recommended prior to commencement of the project.

Archaeological monitoring of the project should be carried out under the attached *Cultural Resources Monitoring and Discovery Plan for the 35th Avenue SE Reconstruction Project* (Appendix C). The plan includes a protocol to follow in the event cultural materials are discovered within or below the road fill. The plan also details the types of cultural materials that could be in the project area and specify which types may be potentially significant. SWCA recommends the City allow the archaeologist to review the project drawings and construction methodologies to refine the monitoring specifics once an alternative is selected.

In the event that historic or precontact cultural resources are discovered at any time during construction and an archaeological monitor is not on site, the City's contractors should cease activities at once and follow the inadvertent unmonitored discovery protocol outlined in the *Cultural Resources Monitoring and Discovery Plan for the 35th Avenue SE Reconstruction Project* (Appendix C), beginning with contacting an archaeologist to confirm and evaluate the discovery. If construction in any area encounters human remains, whether burials, isolated teeth, bones, or potential mortuary items, work in that area should be stopped immediately and the area around the discovery secured [RCW 68.50.645 and RCW 27.44.040].

This assessment is based on anticipated project elements and impacts provided by KPFF at the time fieldwork was conducted. If the construction plans change, particularly if the footprint is expanded to include areas beyond the 35th Avenue SE road embankment, additional assessment may be required.

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APPENDIX A: CORRESPONDENCE

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5418 20th Avenue NW, Suite 200,
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March 5, 2014

Cultural Resources
3310 Smokey Pt Dr; PO Box 277
Arlington 98223-0277
Submitted via email to klyste@stillaguamish.com

RE: Upcoming Cultural Resources Assessment for the SE 35th Avenue Reconstruction Project

Dear Kerry Lyste,

The SE 35th Avenue Reconstruction Project near Silver Lake north of Mill Creek, WA in Sections 32 and 33 of Township 28 North, Range 5 East, Willamette Meridian is proposed by the City of Mill Creek Department of Public Works (Figure 1). A segment of 35th Avenue SE between 144th Street SE and 141st Street SE is underlain by peat deposits, resulting in chronic settlement of the 35th Avenue SE roadway and seasonal flooding of Penny Creek over the road (Figure 2). Unsuccessful attempts to repair the sinking road have been made in the past, so the City of Mill Creek is considering many options for addressing long-term settlement of 35th Avenue SE during the current pre-design analysis phase of work.

In 2003, Snohomish County Public Works reconstructed the 35th Avenue SE roadway using lightweight fill consisting of hog fuel, but settlement of the road embankment continued. Further geotechnical evaluation of the roadway was performed by Shannon and Wilson in 2012 and study was prepared that evaluated alternatives to prevent additional sinking. A pile-supported slab solution was selected as the preferred alternative, along with drainage improvements to existing water collection and conveyance systems. KPFF is currently revisiting the past project alternatives for the City of Mill Creek. KPFF retained SWCA to conduct a cultural resources assessment for the project during pre-design analysis. Other project stakeholders include interested representatives from Community Transit, the Mill Creek School District, the Snohomish County Public Works Traffic Division, WSDOT, and franchise utilities. There is currently no federal nexus in terms of funding or permitting of this project.

Prior to fieldwork, SWCA will conduct a check of records at DAHP's WISAARD to gather information on sites and previous reports in or near the project area. Other information will be collected from recent geotechnical work for the project, environmental sources, ethnographic and historic accounts, maps, and photographs. Following completion of a utilities locate, field survey of the alignments will be completed by the SWCA project geoarchaeologist and a small field crew. Fieldwork is currently scheduled for Monday, March 10th or Tuesday, March 11th. The survey will attempt to identify cultural resources, as well as note historic and modern disturbance and the elevation of the road surface above (or below) the original grade. The geoarchaeologist will assess the potential for buried archaeological deposits and their likely locations, and excavate shovel and/or auger probes in accessible locations. Please call me if you would like to observe survey excavations or discuss the project during fieldwork. The results of research and field investigations will be presented in a report

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for submission to the City of Mill Creek, DAHP, the Tribes, and other concerned parties. Because most of the project is beneath pavement on existing roadways, monitoring is a likely recommendation. An appendix to the report will include a Monitoring and Discovery Plan for use during construction.

At first glance, there are no previously recorded historic properties in the project area and the project area has not been surveyed before. There is high potential for buried pre-contact archaeological resources to be associated with the margins of Thomas Lake and the associated Penny Creek floodplain, as these landforms represent favorable locations for past resource procurement and processing. There is lower potential for encountering historical cultural resources in the immediate project area. If any archaeological resources are present, they may be buried deeply below road fill or older naturally deposited alluvium, within or below peat beds mapped in the project vicinity. At this time, SWCA does not have detailed plan drawings showing the vertical and horizontal extent of the project. We assume the project will not extend further than 20 meters west and east of 335th Avenue SE (see Figure 2) and project excavations could reach deeper than the range of traditional archaeological investigation. We can send you copies of the project plans once they become available if you are interested.

SWCA would like to know if the Stillaguamish Tribe has any concerns for cultural resources in or near the project area. If so, please contact us at your earliest convenience so these locations can be taken into account during planning and reporting. We respect any concerns the Tribe may have about sharing sensitive information with us and we will be happy to work with you regarding these concerns. This letter is a technical inquiry and is not intended to replace government-to-government consultation required by state regulations. We look forward to hearing from you regarding this project.

Sincerely,

Brandy A. Rinck
Geoarchaeologist, M.A., RPA

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Seattle, Washington 98107

March 5, 2014

Richard Young, Cultural Resources
Hibulb Cultural Center & Natural History Preserve
6410 23rd Avenue, N.E.
Tulalip, WA 98271
Submitted via email to ryoung@tulaliptribes-nsn.gov

RE: Upcoming Cultural Resources Assessment for the SE 35th Avenue Reconstruction Project

Dear Richard,

The SE 35th Avenue Reconstruction Project near Silver Lake north of Mill Creek, WA in Sections 32 and 33 of Township 28 North, Range 5 East, Willamette Meridian is proposed by the City of Mill Creek Department of Public Works (Figure 1). A segment of 35th Avenue SE between 144th Street SE and 141st Street SE is underlain by peat deposits, resulting in chronic settlement of the 35th Avenue SE roadway and seasonal flooding of Penny Creek over the road (Fgiure 2). Unsuccessful attempts to repair the sinking road have been made in the past, so the City of Mill Creek is considering many options for addressing long-term settlement of 35th Avenue SE during the current pre-design analysis phase of work.

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Prior to fieldwork, SWCA will conduct a check of records at DAHP's WISAARD to gather information on sites and previous reports in or near the project area. Other information will be collected from recent geotechnical work for the project, environmental sources, ethnographic and historic accounts, maps, and photographs. Following completion of a utilities locate, field survey of the alignments will be completed by the SWCA project geoarchaeologist. Fieldwork is currently scheduled for Monday, March 10th or Tuesday, March 11th. The survey will attempt to identify cultural resources, as well as note historic and modern disturbance and the elevation of the road surface above (or below) the original grade. The geoarchaeologist will assess the potential for buried archaeological deposits and their likely locations. Shovel and/or auger probes will be excavated in accessible locations. Please call me if you would like to observe survey excavations or discuss the project during fieldwork. The

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results of research and field investigations will be presented in a report for submission to the City of Mill Creek, DAHP, the Tribes, and other concerned parties. Because most of the project is beneath pavement on existing roadways, monitoring is a likely recommendation. An appendix to the report will include a Monitoring and Discovery Plan for use during construction.

At first glance, there are no previously recorded historic properties in the project area and the project area has not been surveyed before. There is high potential for buried pre-contact archaeological resources to be associated with the margins of Thomas Lake and the associated Penny Creek floodplain, as these landforms represent favorable locations for past resource procurement and processing. There is lower potential for encountering historical cultural resources in the immediate project area. If any archaeological resources are present, they may be buried deeply below road fill or older naturally deposited alluvium, within or below peat beds mapped in the project vicinity. At this time, SWCA does not have detailed plan drawings showing the vertical and horizontal extent of the project. We assume the project will not extend further than 20 meters west and east of 335th Avenue SE (see Figure 2) and project excavations could reach deeper than the range of traditional archaeological investigation. We can send you copies of the preliminary project plans once they become available from KPFF if you are interested.

SWCA would like to know if the Tulalip Tribes have any concerns for cultural resources in or near the project area. If so, please contact us at your earliest convenience so these locations can be taken into account during planning and reporting. We respect any concerns the Tribes may have about sharing sensitive information with us and we will be happy to work with you regarding these concerns. This letter is a technical inquiry and is not intended to replace government-to-government consultation required by state regulations. We look forward to hearing from you regarding this project.

Sincerely,

Brandy A. Rinck
Geoarchaeologist, M.A., RPA

APPENDIX B: SHOVEL PROBE AND PREVIOUSLY DRILLED CORE LOG SUMMARY

Table B-1. Shovel Probe Summary.

SP NO.	UTM (Zone 10N, NAD83) NORTHING	EASTING	DEPTH (cmbs)	DESCRIPTION	INTERPRET-ATION	CULTURAL MATERIAL
1	5302111.379	560907.719	0-60	Brown, organic-rich, gravelly, very silty, fine to coarse sand; gravels are common, sub-rounded to angular, small pebbles to small cobbles; common woody debris and roots; water table at 60 cmbs.	Fill - Recent	**0-20:** Plastic fragments **20-45:** 1 shard of clear flat glass; common plastic bag and hard plastic fragments
			60-65	Brown to gray, gravelly, silty, fine to coarse sand with many large roots, woody debris, and log fragments; gravels are common, sub-rounded to angular, small pebbles to small cobbles.	Fill - Possible surface in fill	
			65-100	Mottled bluish gray and yellowish brown, slightly clayey, silty, gravelly, fine to coarse sand; sticky; gravels are few, small to medium pebbles; scattered organic fibers and wood debris. * Began augering at 75 cmbs due to wood.	Fill - Till used as fill mixed with mill debris	
			Probe terminated on large wood obstruction at 100 cmbs.			
2	5301860.739	560931.17	0-20	Dark brown, gravelly, fine to coarse sandy wood fragments and organic debris; gravels are common, sub-rounded to sub-angular, small pebbles to small cobbles.	Fill - Recent	**0-80:** Plastic debris, wrappers, and hard plastic fragments.
			20-45	Brown, gravelly, fine to coarse sand and wood chips; gravels are few to common, sub-rounded, small to medium pebbles; about 50% wood chips; water table at 45 cmbs.		
			45-60	Dark brown, fine to coarse sandy, small to medium pebbles and woody debris with many, small to large roots.		
			60-80	Grayish brown, gravelly, fine to coarse sand with scattered woody debris; common to many, small to very large roots; one large cobble or boulder.		
			80-155	Brown, silty peat; locally fibrous; few, fine roots, small woody debris; and fine organic fibers throughout. * Began augering at 100 cmbs.	Historical Peat	
			155-165	Brownish gray, gravelly, fine to coarse sand; few small roots and woody debris; gravels are few, rounded, small pebbles; one large, decomposing wood fragment at 165 cmbs.	Historical Alluvium or Disturbed Outwash	
			165-175	Brown, silty peat; locally fibrous; few, fine roots, small woody debris; and fine organic fibers throughout.	Older Peat	
			175-190	Brownish gray, gravelly, fine to coarse sand; gravels are few, rounded, small pebbles; few to common, small organic fibers and small woody debris.	Outwash	
			190-200	Yellowish brown, silty, gravelly, fine to medium sand; gravels are common, angular to rounded, very small to very large pebbles.	Ice contact deposit or older Outwash	
			Probe terminated on large pebbles.			

Table B-2. Geotechnical Borehole Summary.

BOREHOLE	UTM (Zone 10N, NAD83) EASTING	NORTHING	ELEVATION (feet amsl)	TOP (fbs)	BOTTOM (fbs)	STRATUM	DESCRIPTION
B-1 (SC)	560924.76	5302019.86	389.5	0	0.5	Fill	Asphalt and concrete.
				0.5	2.5	Fill	Gray, sand and gravel; trace to slightly silty; oiled; compact; damp.
				2.5	9	Fill	Gray, sandy gravel to gravelly sand; trace to slightly silty; compact; wet; trace organics at 5 fbs.
				9	26.5	Peat	Brown, locally fibrous, peat to organic-rich silt; soft, wet.
B-2 (SC)	560916.74	5302295.74	392	0	0.2	Fill	Gravel.
				0.2	3	Fill	Gravelly sand.
				3	13.5	Peat	Peat; soft to very soft.
				13.5	36	Outwash	Compact to very compact sand.
B-3 (AEE)	560912.81	5301460.66	417	0	7	Till	Gravelly, silty sand; compact to very compact.
B-3 (SC)	560918.52	5302010.92	389	0	1	Fill	Asphalt and permeable base.
				1	2.7	Fill	Brown, sandy gravel with trace silt; gravel rounded to 2.5", small cobbles; gravel borrow.
				2.7	3.5	Fill	Asphalt with gravel base.
				3.5	8.8	Fill	Grayish brown, gravelly, fine to coarse sand; wet; compact.
				8.8	10	Fill	Logs; puncheon mat from original road construction.
				10	41.8	Peat	Reddish brown, fibrous peat with occasional gravel and sand lenses; saturated; very soft.
				41.8	42	Outwash	Gravelly sand; very compact.
B-5 (AEE)	560911.13	5302240.58	392	0	1	Fill	Gravel fill.
				1	4	Fill	Gravelly sand.
				4	17	Peat	Very soft to soft, peat.
				17	20	Outwash	Sand; moderately to very compact.
B-5 (SC)	560917.79	5302234.84	392	0	2	Fill	Gravel.
				2	5	Fill	Gravelly sand.
				5	18	Peat	Soft to very soft peat.
				18	26	Outwash	Sand; moderately to very compact.
B-6 (AEE)	560911.68	5301931.85	390	0	18	Peat	Reddish brown, fine fibrous peat; very soft; moist to wet.
				18	21	Outwash	Bluish gray, sandy silt; medium stiff; saturated.
				21	25.5	Outwash	Gray, silty, fine to coarse sand; very dense.
B-6 (SC)	560919.37	5301926.74	389	0	1.25	Fill	Asphalt and permiable gravel base.
				1.25	5.8	Fill	Gravel interbedded with gravelly sand; some oil-treated layers; wet; moderately compact; gravel borrow.
				5.8	25	Peat	Reddish brown, decomposed peat with common rootlets; wet; very soft; becomes fibrous at 9 fbs; becomes yellowish brown, non-fibrous and silty below 20 fbs.
				25	28	Peat	Light gray, clayey silt; plastic; some organic interbeds; wet; soft.
				28	29	Outwash	Gray, silty, gravelly, fine to medium sand; very moist to wet; very dense.
P-1 (SC)	560921.8	5301877.71	391	0	3	Fill	Gravel.
				3	7	Peat	Silty, clayey peat.

Table B-2. Geotechnical Borehole Summary.

BOREHOLE	UTM (Zone 10N, NAD83) EASTING	NORTHING	ELEVATION (feet amsl)	TOP (fbs)	BOTTOM (fbs)	STRATUM	DESCRIPTION
P-2 (SC)	560914.39	5301887.39	391	0	3.5	Fill	Gravel
				3.5	7	Peat	Silty, clayey peat.

APPENDIX C: MONITORING AND DISCOVERY PLAN

CULTURAL RESOURCES MONITORING AND DISCOVERY PLAN FOR THE 35TH AVENUE SE RECONSTRUCTION PROJECT, MILL CREEK, SNOHOMISH COUNTY, WASHINGTON

Prepared for

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By

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SWCA Project No. 27724

CONTAINS CONFIDENTIAL INFORMATION – NOT FOR GENERAL DISTRIBUTION

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INTRODUCTION

The City of Mill Creek Department of Public Works (The City) proposes to reconstruct a segment of 35th Avenue SE between 144th Street SE and 141st Street SE. The roadway is underlain by peat deposits at the Penny Creek crossing, resulting in chronic settlement of 35th Avenue SE and seasonal flooding over the road. SWCA completed a cultural resources overview of the subsiding roadway segment and determined the 35th Avenue SE Reconstruction Project is within a culturally sensitive area that would have provided people with many plant and animal resources in the past (Rinck 2014). Standing water across most of the project area during survey made sub-surface investigation for cultural resources difficult, but two shovel probes were excavated. The results of shovel probing were compared to the results of ten previous geotechnical boreholes. Thick fill was identified overlying naturally deposited peat and organic-rich silt, but no significant cultural materials were identified. Archaeological monitoring of project construction was recommended due to the project's sensitive setting and the limited sub-surface survey.

Project Location and Description

The 35th Avenue SE Reconstruction Project is southeast of Silver Lake and north of Mill Creek, Washington in Sections 32 and 33 of Township 28 North, Range 5 East, Willamette Meridian (Figure 1). The south end of the project area is characterized by a glacial plain riser that dips gently north. Wetlands associated with Penny Creek are at the west edge of Thomas Lake at the toe of the riser slope. 35th Avenue SE stretches across the glacial sediment at the south end of the project on to the wetland deposits at the north end of the project. According to previously collected geotechnical borehole data and as-built road plans, up to 3.3 m (10 ft) of woody and gravelly fill was used to raise the road above the standing water in the wetlands and over Penny Creek, which now passes under 35th Avenue SE through a culvert. The fill was placed as road bed during different periods of road construction in the past. Less fill was placed at the south end of the project where the road prism meets the glacial plain and more fill was used to fill in the wetlands to the north. Naturally deposited wetland sediment is below the thicker fill, overlying the deeply buried glacial deposits.

The project alignment crosses over Penny Creek, just west of Thomas Lake. Penny Creek flows within a wide, flat bottomed basin that supports a seasonal marsh and wetland and 35th Avenue SE has been sinking down into the wetland at the Penny Creek crossing for many years. In 2003, Snohomish County Public Works completed geotechnical borings in the project area and reconstructed the 35th Avenue SE roadway using lightweight fill consisting of hog fuel, but settlement of the road embankment continued. Further geotechnical evaluation of the roadway was performed by Shannon and Wilson, Inc. and a study was prepared that evaluated alternatives to prevent additional sinking (Shannon and Wilson, Inc. 2013). KPFF is revisiting the past project alternatives for the City of Mill Creek and current options under consideration include 1) replacing older, heavier fill with geofoam or cellular concrete; 2) a pile-supported slab solution with drainage improvements to existing water collection and conveyance systems; and 3) possible bridge and levee solutions.

Detailed project plans are not yet available because the project is currently in design. The project limits are within the 35th Avenue SE right-of-way (ROW) up to 61 meters [m] (200 feet [ft]) south of 144th Street SE and up to 30 m (100 ft) north of 141st Street SE. The goal of construction will be to keep all ground disturbance within the roadway embankment. The depth of project disturbance will depend on which design option is selected. Excavations for placement of geofoam or cellular concrete fill could reach about 3 m (10 ft) below the surface. The concrete slab alternative would be supported by pin piles driven through the soft peat up to 15 m (50 ft) below the surface to the underlying harder

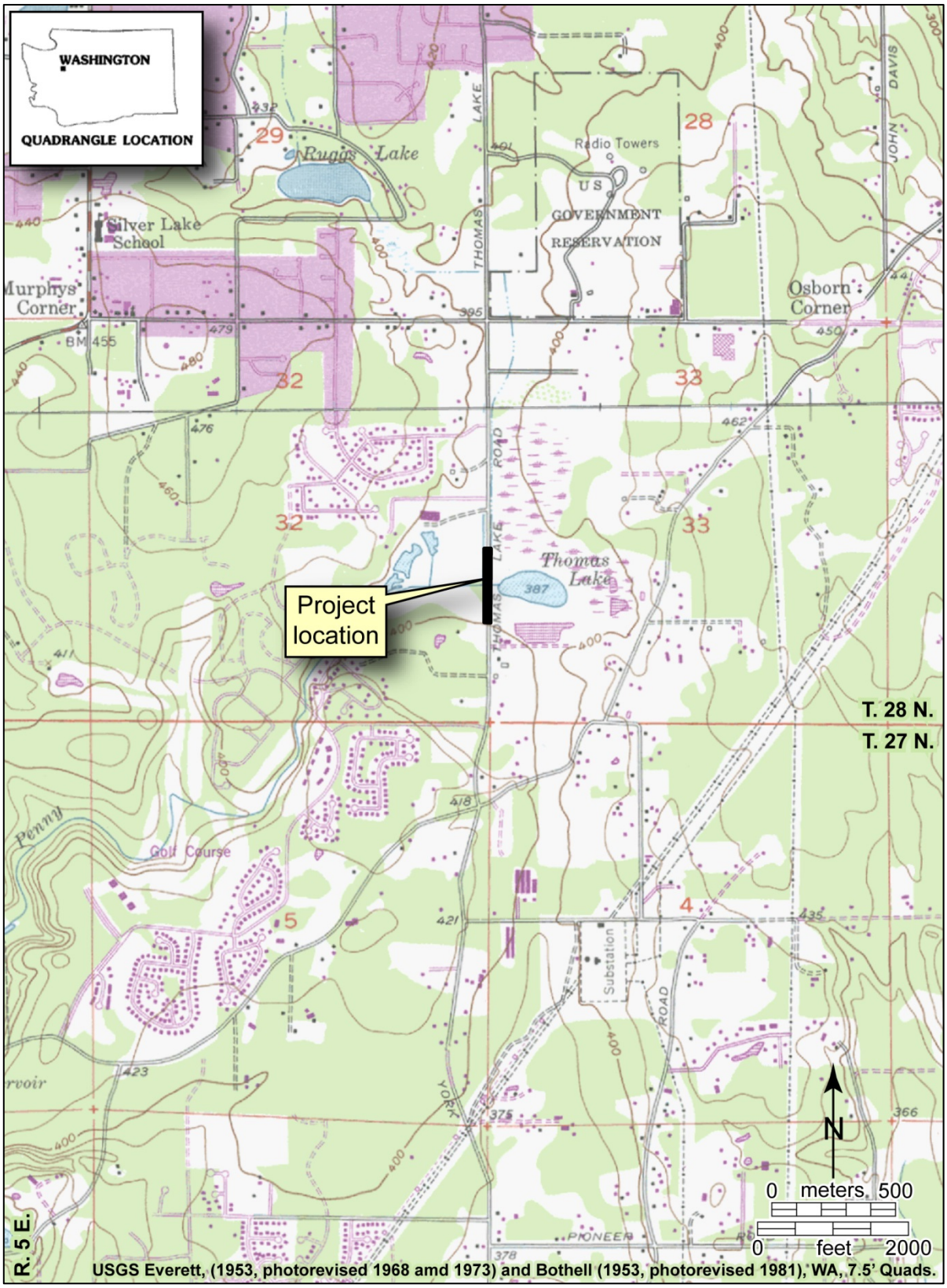

Figure 1. Project location.

glacial sediment. The project area is covered with asphalt and fill, so a traditional archaeological survey to identify cultural materials was not possible prior to construction. SWCA recommended the City select the alternative with the smallest overall ground disturbance footprint and that an archaeologist review the project drawings and construction methodologies to refine the monitoring specifics once an alternative is selected.

Regulatory Setting

The project is subject to the State Environmental Policy Act (SEPA) [RCW 43.21c] and the implementing rules contained within the Washington Administrative Code [WAC 197-11]. These rules require project proponents to identify any places or objects on or adjacent to the project that are listed in or eligible for national, state, or local preservation registers, and to identify sites of archaeological, scientific, or cultural importance on or adjacent to the project. Project proponents are also required to describe proposed measures to reduce or control impacts to those places, objects, and sites.

Other relevant Washington State laws address archaeological sites and Native American burials. The Archaeological Sites and Resources Act [RCW 27.53] prohibits knowingly excavating or disturbing prehistoric and historic archaeological sites on public or private land. The Indian Graves and Records Act [RCW 27.44] prohibits knowingly destroying American Indian graves and provides that inadvertent disturbance through construction or other activities requires reinterment under supervision of the appropriate Indian tribe. In order to prevent the looting or depredation of sites, any maps, records, or other information identifying the location of archaeological sites, historic sites, artifacts, or the site of traditional ceremonial, or social uses and activities of Indian Tribes are exempt from disclosure [RCW 42.56.300].

Archaeological Background and Potential for Discovery

The project area lies in a portion of Washington State that has received relatively little attention from archaeologists. For example, no archaeological sites have been previously recorded within one mile of the project. The closest previously recorded site to the project area is 45SN44, which is a precontact basalt bipoint isolate dated to the Olcott period by style that was identified 1.6 miles (2.6 kilometers) northeast of the project area along an unnamed creek on the edge of the Snohomish River valley (Mattson 1976; Obermayr 1991).

The project area holds an overall moderate potential for harboring significant cultural resources because of its natural and cultural setting. The glacial upland as a whole generally exhibits low potential for buried cultural resources; however, specific sub-environments on the glacial upland signal heightened sensitivity for archaeological materials. Such sub-environments include creek valleys, wetland and lake margins, and overlooks or viewpoints. If cultural materials are present in the project area, they may be identified near the surface or buried deeply, depending on the specific depositional environment and the local thickness of fill. Most archaeological resources associated with glacial outwash, which underlies the south end of the project alignment, would be identified near the surface where fill is absent. Archaeological materials near Penny Creek or its wetlands could be more deeply buried within younger alluvium and below fill. The fill may include significant historical cultural materials if stable surfaces are identified between episodic fill layers.

There is also moderate potential for encountering significant, intact, precontact archaeological resources in the project area specifically. This is especially true along the margins of Thomas Lake and the associated Penny Creek wetlands, as these landforms represented favorable locations for past

resource procurement and processing. Penny Creek flows into North Creek, the largest waterway in the North Creek Basin. It feeds into Lake Washington and is a salmon bearing stream that almost certainly provided Native Americans living in the vicinity with fish and other resources. The types of precontact archaeological sites that might be identified at the far south end of the project area include small temporary camps or processing and cooking areas. Isolated artifacts that were dropped or discarded during use in the wetland could be identified throughout the project area, especially at the upper boundary of the peat. The ancient margins of kettle lakes are commonly buried below younger muck and fill and burial of the lake margins could have preserved any associated cultural materials. The ancient margin of Thomas Lake is approximately at 144th Street SE and the historical margin is slightly father north. The effects of past road construction and sinking along the project alignment does temper the likelihood of encountering intact precontact period cultural resources.

Still, it is important to note that isolated Clovis points have been found in other Puget Lowland peat bogs. One point was identified in peat deposits near Yukon Harbor, approximately 29 miles (mi) (47 kilometers [km]) southwest of the project, and a second was associated with peat from Maple Heights, approximately 30 mi (48 km) south of the project (LeTourneau 2010; Meltzer and Dunnell 1987). The Clovis points were not found in an archaeological context, but a PaleoIndian site with basally-thinned, concave-base projectile points that are similar to Clovis points was identified beneath peat dated to about 10,000 years old on the Sammamish River, about 14 mi (22.5 km) south of the project (Kopperl et al. 2010). The identified artifacts show that kettle lakes were important landforms to Native Americans living on the glacial upland.

There is low to moderate potential for encountering significant, intact historical cultural resources in the project area. The area would have required filling or ditching and draining in order to be useful to early settlers. The most probable evidence of early historical activities to be encountered in the project area would be in the form of an older buried road surface, old bridge features, water management features, small structural elements, or ditches. The south end of the project area also hosts the highest potential for encountering significant historical archaeological resources because it is drier and is nearest to an early homestead. The fill across the project area may contain buried stable surfaces with associated cultural materials that were buried as the land depressed; however, road construction and sinking along the project alignment also tempers the likelihood of encountering intact historical cultural resources.

Results of ten previously drilled geotechnical boreholes and two archaeological shovel probes were reviewed during the cultural resources assessment (Figure 2). The excavations show four strata in the project area (Figure 3) (Rinck 2014). From bottom to top, they are advance outwash, till, peat, and fill (Table 1) (Shannon & Wilson 2013). The upper contact of the glacial sediment marks the extent of sensitivity for buried cultural resources. Glacial deposits were encountered between 175 and 200 centimeters below the surface [cmbs] (5.7 and 6.6 feet below the surface [fbs]) at the south end of the project area where the Holocene-aged peat laps onto the glacial plain. Farther north, the upper boundary of the glacial sediment is up to 13.7 mbs (45 fbs). Silty peat was identified on top of outwash and below fill, marking the ancient extent of Thomas Lake. The peat is interbedded with gravel and sand near Penny Creek and in general, the peat is thickest in the north half of the project alignment. Up to 9.8 m (32 ft) of saturated peat and organic-silt was recorded. The sub-surface investigations show 50 centimeters [cm] to 3.3 m (1.5 to10 ft) of road fill overlies the peat. Buried surfaces may be within the fill from 60 to 82 cmbs (2 to 2.7 fbs) and 2.7 to 3 mbs (8.8 to 10 fbs).

Figure 2. Locations of the previously drilled geotechnical boreholes and archaeological shovel probes used during the cultural resources assessment.

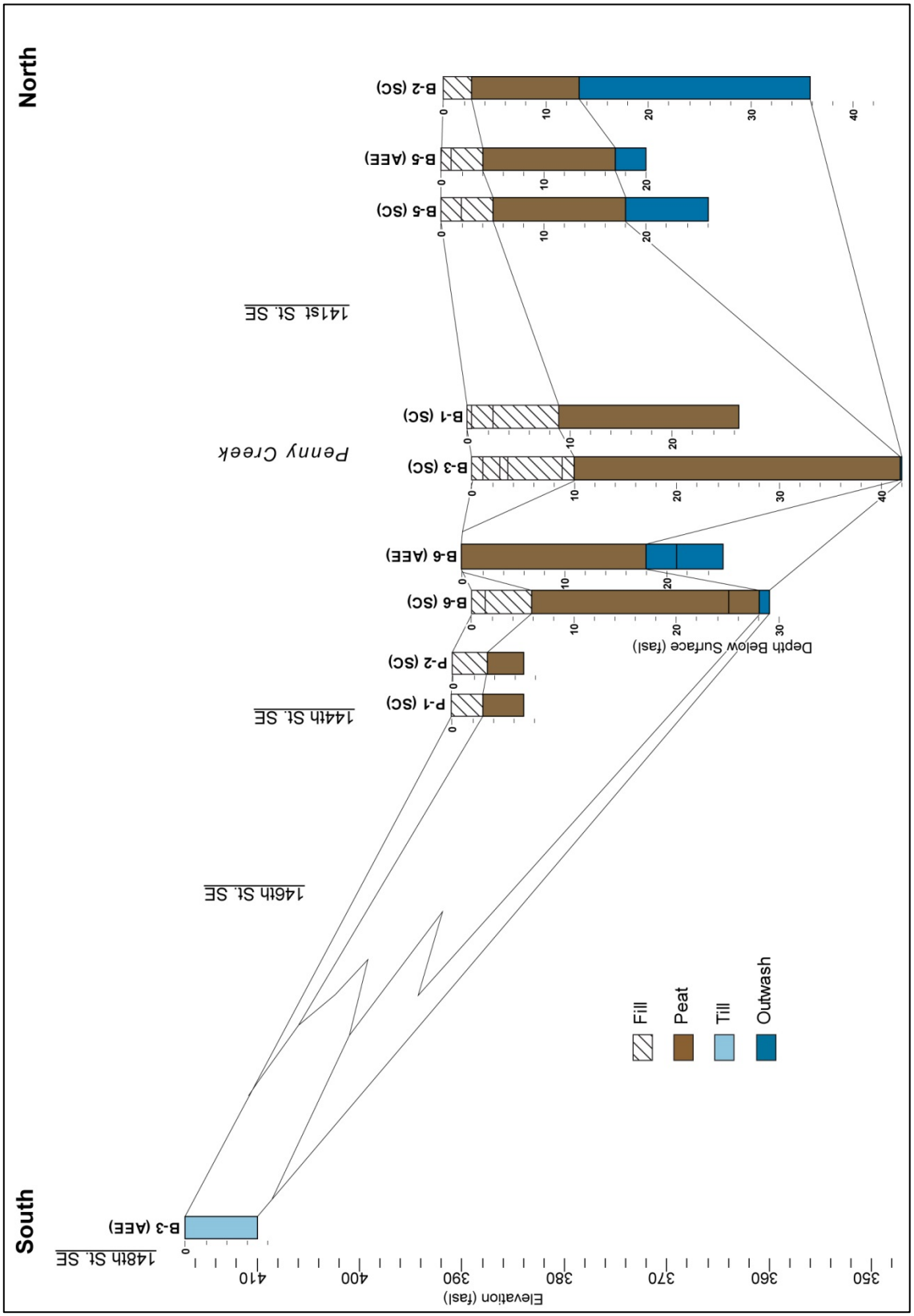

Figure 3. Cross-section of the Project area, showing results of previously drilled boreholes.

Table 1. Typical descriptions of the strata identified in boreholes drilled along 35th Avenue SE.

STRATUM	DESCRIPTION
Fill	Variable deposit; usually consists of dark brown to gray, sandy gravels or sometimes silty, gravelly, fine to very coarse sand with few to many roots and small to large woody debris; gravels are common to many, sub-rounded to sub-angular, very small pebbles to large cobbles; few layers of brown, gravelly, fine to coarse sandy, wood chips.
Peat	Brown to reddish brown, sometimes clayey, silty, peat with many fine organic fibers, few fine roots, and common, small woody debris.
Till	Bluish to brownish gray, gravelly, silty, fine to very coarse sand; poorly-sorted.
Advance Outwash	Gray; gravelly, fine to coarse sand or very silty, gravelly, fine to medium sand; gravels are few, small to medium pebbles; compact.

Briefing

Prior to construction, the SWCA *Archaeological Monitor* or *Monitoring Supervisor* will brief the *Construction Superintendent* and key construction equipment operators directly involved in ground-disturbing activity on cultural resource issues. The briefing will include information on the legal context of cultural resources protection and on the prehistoric, ethnographic, and historic cultural resources likely to be present in the construction area. The goals of the briefing are to familiarize key construction personnel with SWCA personnel and the procedures to be followed in the event there is a discovery of cultural material, outlined in detail below; and to provide contact protocol and review current project plans. As a general policy, and as far as practically feasible, all cultural resources, precontact and historic, and buried human remains, will be avoided and actively protected in place.

Collection of artifacts by employees, construction personnel or others with access to the construction zone is prohibited.

Personnel Qualifications and Chain of Communication

The *Archaeological Monitor* will be a professional archaeologist, trained in archaeological monitoring. Though the monitor is not required to be onsite throughout the entire execution of the project, SWCA will ensure a monitor is available throughout the duration of the project in case of an inadvertent discovery. The *Archaeological Monitor* will coordinate scheduling with the *Construction Superintendent*, the KPFF *Project Manager,* and with SWCA's *Monitoring Supervisor*. For other than emergency situations, a minimum of 48 hours notification of the need for an *Archaeological Monitor* is required. Qualified personnel will respond within 8 hours or less in the case of an inadvertent discovery of human remains.

During construction, the *Archaeological Monitor* will communicate with the *Construction Superintendent* and construction crew about equipment movement, placement of spoils for examination, to access trench excavations, and to determine appropriate timing and procedures for access to construction trenches. Any communication that directs the equipment operator to stop excavation or modify excavation techniques will go through the *Construction Superintendent*, and the *Project Manager* if necessary.

The *Project Manager* will ensure that the provisions of this document are carried out, and the *Monitoring Supervisor* will report to the *Project Manager* to facilitate this. The *Archaeological Monitor* will be responsible for notifying the *Construction Superintendent*, *Monitoring Supervisor*, and *Project Manager* of any discoveries. The *Project Manager* is then responsible for coordinating with the concerned parties including the City of Mill Creek *Project Representative*, the *State Historic Preservation*

Officer (SHPO) at the Department of Archaeology and Historic Preservation (DAHP), the *Tulalip Tribes Cultural Resources Representative*, the *Stillaguamish Tribe Cultural Resources Representative*, and if necessary, the *Snohomish County Medical Examiner* and *Sheriff*.

IDENTIFICATION OF CULTURAL RESOURCES

Typical markers of precontact cultural activity include discarded shell, fire-modified rock, animal bone, lithic debitage, flaked or ground stone tools, burned earth, cordage or fiber, charcoal, ash and exotic rocks and minerals. Typical markers of historic activity, dating prior to the 1950s, includes milled lumber, masonry features, concrete, glass, ceramic, brick, metal fragments, old bottles, nails, wire or other evidence of early historic occupation and industry. Newly discovered archaeological sites or site components that may be significant would include resources with intact, stratified deposits or diagnostic artifacts or features that could provide chronological data as well as information about pre-contact Native American lifeways or historic activities.

Unmonitored Inadvertent Discovery

If archaeological precontact Native American, ethnographic, or historical artifacts, features, structures, or human remains are discovered when the *Archaeological Monitor* is not present, the following protocol should be followed:

Cultural Resources

1) If a potential cultural resource is discovered, construction work should temporarily stop in the immediate location of the discovery. The potential resource will be left in place and the person who makes the discovery will notify the *Construction Superintendent*.

2) The *Construction Superintendent* will contact the *Project Manager*, who will contact the *Monitoring Supervisor* to view the discovery. The *Project Manager* will also contact the *Project Representative* at the City of Mill Creek. The City of Mill Creek *Project Representative* will contact the *Washington State Historic Preservation Officer (SHPO)* at the Department of Archaeology and Historic Preservation (DAHP) to seek consultation regarding appropriate treatment.

3) The City of Mill Creek *Project Representative* and the *Project Manager* will coordinate to secure the work site, if determined necessary by the *SHPO*. The *Construction Superintendent* shall enforce appropriate security measures to prevent vehicles, equipment, or unauthorized personnel traversing the area of the find and inform all parties that they are not to pick up, touch, or disturb the item(s) in any way.

4) The *Project Manager* will consult with the City of Mill Creek *Project Representative*, *SHPO,* the *Tulalip Tribes Cultural Resources Representative*, and the *Stillaguamish Tribe Cultural Resources Representative*, as necessary, to determine appropriate treatment of the find.

5) Work may resume upon notification by *SHPO* and the City of Mill Creek *Project Representative*.

Human Remains

Preserved human skeletal material and the material evidence of burials have been identified in the region in the past. If any construction activity exposes anything that appears to be human remains, either burials or isolated teeth or bones, or other mortuary items, construction in the vicinity of the find will halt immediately. Suspected human remains will not be handled by anyone other than tribal representatives, archaeologists, or law enforcement. With the exception of archaeological documentation, photographing the remains is prohibited. The protocol listed below follows RCW 68.50.645, RCW 27.44.055, and RCW 68.60.055. In the event that human remains are discovered in the project area, the following protocol will be followed:

1) Construction crew members will ensure that any discovered human remains and artifacts are treated with dignity and respect. All ground disturbing activity within 50 feet (15 meters) of the discovery will be stopped immediately and the site secured from any possible disturbance. The remains will be kept covered and they will not be removed from the ground.

2) The *Construction Superintendent* will be contacted immediately. The *Construction Superintendent* will notify the *Project Manager*, who will contact the *Sherriff*, the *Medical Examiner*, the City of Mill Creek *Project Representative*, and the *State Physical Anthropologist* at DAHP.

3) The *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 *Medical Examiner* determines that the remains are part of a crime scene (forensic), the *Sheriff* has jurisdiction over the remains. If the *Medical Examiner* determines that the remains are not part of a crime scene (non-forensic), the *Medical Examiner* will notify DAHP, and the *SHPO* will then take over jurisdiction over the remains. The *SHPO* will notify all affected *Tribes* and any appropriate cemeteries of the find.

4) The *State Physical Anthropologist* at DAHP will determine if the remains are of Native American ancestry. If the *State Physical Anthropologist* determines the remains are of Native American ancestry, he will report the findings to appropriate cemeteries, the affected *Tribes*, and the City of Mill Creek *Project Representative*. The *DAHP* will be responsible for consultation with the appropriate *Tribes,* the City of Mill Creek *Project Representative*, and any other involved parties to determine appropriate treatment of the remains. If the *State Physical Anthropologist* determines the remains are non-Indian, the *SHPO* will handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Monitored Discovery Procedures

The *Archaeological Monitor* will be present when ground-disturbing construction activities (grading, trenching, or other excavation) extend beyond 50 cmbs (1.6 fbs) north of 144th Street SE. The *Archaeological Monitor* will also observe excavations between 0 and 100 cmbs (0 and 3.3 fbs) south of 144th Street SE. Archaeological monitoring efforts should focus on the south end of the alignment, along the pre-fill wetland margins. Monitoring will continue at the *Archaeological Monitor*'s discretion and depending on the stratigraphy, continuous monitoring may transition to spot checking or intermittent monitoring after older naturally deposited sediments are observed below the fill.

The *Archaeological Monitor* will examine surfaces exposed by grading, trenching or other excavation to identify any previously undocumented pre-contact or historic archaeological materials. The *Archaeological Monitor* will be observing construction equipment and sediment removal from multiple

perspectives around and in front of working equipment, requiring close communication with the *Construction Superintendent* and equipment operators. The *Archaeological Monitor* will be safely stationed to observe excavation and will coordinate through the *Construction Superintendent* and *Project Manager* to enter trenches, excavations, or shored spaces. In addition, the *Archaeological Monitor* will examine excavation spoils. The *Archaeological Monitor* will be responsible for maintaining daily work records and documenting any discoveries. The *Monitoring Supervisor* will notify the *Tulalip Tribes Cultural Resources Representative* and the *Stillaguamish Tribe Cultural Resources Representative* to inform them when the *Archaeological Monitor* will be monitoring construction and to provide them with contact information should they wish to observe fieldwork.

The following procedures outline the steps and contact protocol that will occur if pre-contact or significant historical archaeological resources are discovered during archaeological monitoring:

1) The *Archaeological Monitor* will record all precontact and historic cultural material on standard forms, ensuring proper documentation and assessment of finds. Initial effort will focus on establishing the nature, provenience and integrity of any discovery. Documentation methods will include photographs, sketches, scaled drawings, and written descriptions. The *Archaeological Monitor* may take samples and collect isolated artifacts for identification or analysis. The primary goal of archaeological monitoring will be discovery and documentation of previously unknown intact cultural deposits in the project area. Isolated artifacts will be examined, but generally will not cause work stoppage. Where complex or extensive cultural remains are encountered, the *Monitoring Supervisor* may assign a team of archaeologists to provide timely documentation and assessment of the identified resource or potential resource.

2) If in the opinion of the *Archaeological Monitor*, potentially significant cultural material has been encountered, the *Archaeological Monitor* will immediately contact the *Construction Superintendant,* the *Monitoring Supervisor,* and the *Project Manager* to arrange for the re-direction or the halt of construction, as needed, and for preliminary evaluation of the find. The *Project Manager* will contact the City of Mill Creek *Project Representative.* If the *Archaeological Monitor* does not anticipate additional project effects to the resource, project construction may continue with an *Archaeological Monitor* as needed while cultural resource evaluation proceeds. If the *Archaeological Monitor* is of the opinion that continued construction could cause additional impacts to such resources, project activities may be stopped as described in the "*Work Stoppage*" section below.

3) Newly discovered cultural material will be reported by the *Archaeological Monitor* to the *Construction Superintendant* and *Monitoring Supervisor* upon discovery. The *Monitoring Supervisor* will ensure that the *Tulalip Tribes' Cultural Resources Representative*, the *Stillaguamish Tribe's Cultural Resources Representative*, and the *Project Manager* are fully briefed on the discovery, as well. The *Project Manager* may also ask the *Monitoring Supervisor* to describe the discovery to the City of Mill Creek *Project Representative*.

4) The *Monitoring Supervisor* will assemble all documentation produced by the *Archaeological Monitor* and compose a preliminary assessment of significance that will accompany draft site records. If warranted, site registration forms will be filed with the Washington State Department of Archaeology and Historic Preservation (DAHP). Criteria and integrity requirements for listing on the National Register (36 CFR 60.4) will provide the standards for identification and evaluation of significance for any identified cultural material.

5) If project effects to a significant historic property cannot be avoided, the City of Mill Creek will need to develop a treatment plan in consultation with the *SHPO* at DAHP, and possibly with the Tribes. The DAHP may require that the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation apply to the treatment plan, including provisions for a Research Design, documentation, reporting, and curation. Additional ground disturbance in the vicinity of the identified resource may require an excavation permit.

6) Any samples or artifacts collected during archaeological monitoring will be held in secure storage until such a time as they can be analyzed, conveyed to a repository that meets federal standards (36 CFR part 79), or returned to their original location.

Work Stoppage

If the *Archaeological Monitor* determines that archaeological resources considered significant may be exposed by construction excavation in a particular area, the *Archaeological Monitor* may ask the *Construction Superintendent* to have their crew modify construction excavation procedures to provide exposures of subsurface stratigraphy in order to confirm the presence of any such resources in that area. Work may be stopped in an area sufficient to assess the significance of the identified resources and time will be provided for evaluation by field archaeologists. The following steps will be taken if significant cultural resources are identified during monitoring and a work stop is required to evaluate the cultural materials:

1) The *Archaeological Monitor* will call a stop work by notifying the *Construction Superintendent* that potentially significant cultural resources were identified. The *Archaeological Monitor* will notify the *Monitoring Supervisor*.
2) The *Monitoring Supervisor* will contact the *Project Manager*, who will contact the City of Mill Creek *Project Representative*, the *SHPO* at DAHP, the *Tulalip Tribes' Cultural Resources Representative*, and the *Stillaguamish Tribe's Cultural Resources Representative*, as needed, within one working day.
3) The City of Mill Creek *Project Representative* shall arrange for all parties to conduct a joint viewing of the discovery within forty-eight (48) hours of the notification, or, if that is not feasible, at the earliest time thereafter.
4) The City of Mill Creek *Project Representative* shall consult with the DAHP and possibly the *Tulalip Tribes' Cultural Resources Representative* and the *Stillaguamish Tribe's Cultural Resources Representative*, on a data recovery plan. Resumption of work in the area of the discovery will be dependent on and consistent with the results of the consultation.

Human Remains

If any ground disturbing activity exposes anything that appears to be human remains, either burials or isolated teeth or bones, or other mortuary items, during archaeological monitoring then provisions of RCWs 68.50.645, 27.44.055, and 68.60.055 will be followed. Protocol for monitored discovery of human remains is similar to those used during unmonitored discovery, except that the *Archaeological Monitor* makes the initial notifications.

1) If human remains are identified, the Archaeological Monitor will immediately notify the *Construction Superintendent,* the *Monitoring Supervisor,* and the *Project Manager*. The *Project Manager* will contact the Snohomish County *Sherriff*, *Medical Examiner*, and the City of Mill Creek *Project Representative*. The City of Mill Creek *Project Representative* will immediately notify the *State Physical Anthropologist* at DAHP. Construction crew members and the *Archaeological Monitor* will

ensure that any discovered human remains and artifacts are treated with dignity and respect. All ground disturbing activity within 50 feet (15 meters) of the discovery will be stopped immediately and the site secured from any possible disturbance. The remains will be kept covered and they will not be removed from the ground. The *Construction Superintendent* will ensure the remains are not left unattended without sufficient provisions to keep them safe and in place.

2) The *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 *Medical Examiner* determines that the remains are part of a crime scene (forensic), the *Sheriff* has jurisdiction over the remains. If the *Medical Examiner* determines that the remains are not part of a crime scene (non-forensic), the *Medical Examiner* will notify DAHP, and the *SHPO* will then take over jurisdiction over the remains. The *SHPO* will notify any appropriate cemeteries and all affected *Tribes* of the find.

3) The *State Physical Anthropologist* at DAHP will determine if the remains are of Native American ancestry. If the *State Physical Anthropologist* determines the remains are of Native American ancestry, he will report the findings to appropriate cemeteries, the affected *Tribes*, and the City of Mill Creek *Project Representative*. The *DAHP* will be responsible for consultation with the appropriate *Tribes,* the City of Mill Creek *Project Representative*, and any other involved parties to determine appropriate treatment of the remains. If the *State Physical Anthropologist* determines the remains are non-Indian, the *SHPO* will handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

4) The *Monitoring Supervisor* will compile the *Archaeological Monitor*'s notes and photos to prepare a report that describes the discovery, notification of concerned parties, steps taken in response to the discovery and the final disposition of the remains.

CONFIDENTIALITY

Archaeological properties are of a sensitive nature, and sites where cultural resources are discovered can become targets of vandalism and illegal removal activities. All parties shall keep and maintain as confidential all information regarding any discovered cultural resources, particularly the location of known or suspected archaeological property, and exempt all such information from public disclosure consistent with the NHPA and RCW 42.56.300. While any party is in possession of this confidential information, such party shall limit access to these records to authorized persons with a need to know the information and shall keep a log identifying all persons who access the record, that person's governmental agency or private affiliation, the date the access was permitted, any materials copied, and the purpose and for whom such records were copied. The DAHP will keep all information received permanently secured and confidential.

REPORTING

The *Monitoring Supervisor*, with the help of the *Archaeological Monitor*, will prepare a report documenting the results of the archaeological monitoring within 30 days of the conclusion of monitoring activities that will be provided to KPFF, the City of Mill Creek, the DAHP, the Tulalip Tribes, and the Stillaguamish Tribe. The report will include an inventory of cultural resources results, if any are identified, a comprehensive description of the monitoring methods and results, and any analysis of identified cultural resources. The analysis will include a discussion of the integrity of the resources and determination of whether a resource is eligible for inclusion on the National Register of Historic Places or the Washington Heritage Register, if warranted.

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CONTACTS

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