Black Canyon Hydroelectric Project
FERC Project No. P-14110
Cultural Resources Study Report
February 2014

Prepared for
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LOCATION: King County, Washington
USGS QUAD: Mount Si, WA 7.5'
T, R, S: Sections 24, 25, and 26, T. 24 N, R. 8 E., and Sections 18 and 19, T. 24 N., R. 9 E., Willamette Meridian.

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1 EXECUTIVE SUMMARY

The purpose of this assessment was to identify any previously recorded cultural resources within the Project area, assess potential impacts of the Project to cultural resources, and provide context sufficient for the evaluation of significance of any cultural resources found in the study area. Assessment methods included a review of previous ethnographic, historical, and archaeological investigations in the local area, a records search at the Washington State Department of Archaeology and Historic Preservation (DAHP 2013b) for known sites in the immediate area, a review of relevant background literature and maps (including General Land Office (GLO), United States Geological Service (USGS), and Kroll maps), a site visit and an ongoing effort to complete an ethnographic survey. CRC prepared this report to ensure that potential impacts to archaeological resources are considered in development of the Project in accordance with Section 106 of the National Historic Preservation Act and other federal regulations.

Background research and a site visit have not identified any recorded historic properties within or adjacent to the Project. Review of historical maps, photographs, geological reports, and other information indicate that the landscape of the Project has a low potential to contain historic properties. Archaeological sites, if present, would be found relatively near the ground surface on the glacial outwash terrace that makes up the majority of the Project, where little if any deposition has occurred since the late Pleistocene. Historic-period archaeological materials may be present within the Project, but they are not likely to retain depositional integrity or other characteristics that would make them significant (NRHP 2002). The proposed intake location is situated in an area of alluvial deposition, which is generally considered to have relatively greater potential to contain archaeological materials.

The following actions are recommended: (1) subsurface testing is recommended in undisturbed portions of the proposed intake where alluvial sediments are present and slopes are less than 20 percent prior to construction.; (2) any final Project-specific HPMP should be submitted to appropriate personnel at the Snoqualmie and Tulalip Tribes, King County, DAHP, and FERC, or other interested parties, for review prior to the initiation of any land-altering activities; (3) in the unlikely event that ground disturbing or other activities do result in the inadvertent discovery of archaeological deposits, work should be halted in the immediate area and contact made with the State Department of Archaeology and Historic Preservation (DAHP); and (4) in the unlikely event of the inadvertent discovery of human remains, work should be immediately halted in the area,

the discovery covered and secured against further disturbance, and contact effected with law enforcement personnel, consistent with the provisions set forth in RCW 27.44.055 and RCW 68.60.055.

2 INTRODUCTION

Black Canyon Hydro, LLC, (BCH) ultimately plans to file an application for an original license for the Black Canyon Hydroelectric Project (Project), FERC Project Number P-14110, and associated facilities on the North Fork Snoqualmie River (North Fork), approximately 4-miles northeast of North Bend in King County, Washington. The Project has a proposed generating capacity of 25-megawatts (MW) and would be located predominantly on private lands. The combined maximum hydraulic capacity of the four project turbines would be 900 cubic feet per second (cfs). The run-of-river project would divert water from an approximately 2.7-mile-section of the North Fork.

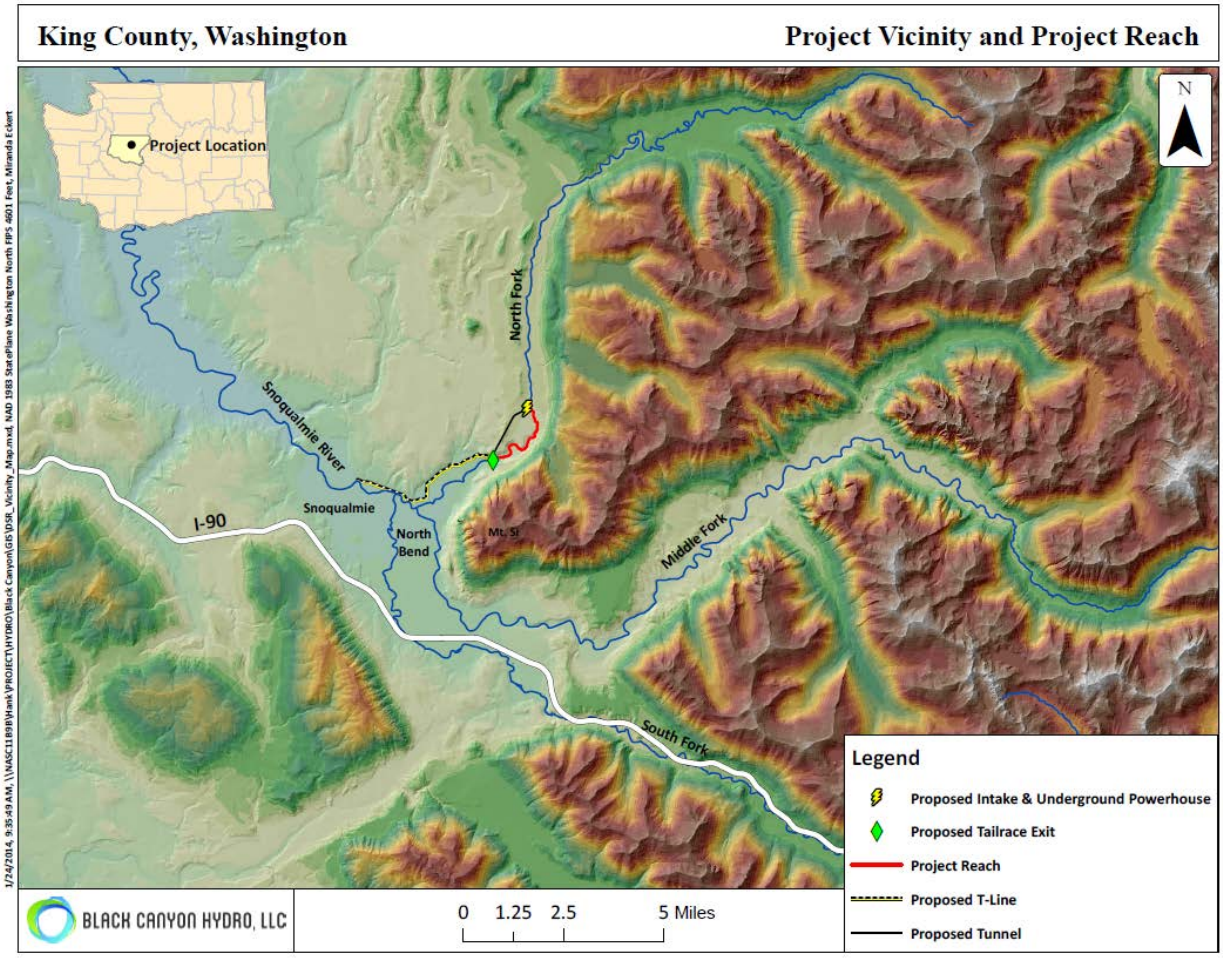

Figure 1. Project Vicinity and Project Reach

As required by the Integrated Licensing Process of FERC, BCH conducted several studies to evaluate a wide range of potential impacts associated with the Project. BCH will incorporate the information provided by these studies into ongoing Project design and operations planning. BCH conducted an environmental flows study within the segment of the North Fork that would be affected by the proposed Project. This portion of the river, which extends from approximately river mile (RM) 5.3 to RM 2.6, is referred to as the Project Reach. This document presents the study results as part of the overall program of studies evaluating how flow-dependent resources may be affected by the Project operations and informing how Project goals can be achieved.

Intake

The following description of intake features reflects an evolution in Project design since the filing of the Pre-Application Document (PAD) through scoping, stakeholder comment, and study results. As a result of completing relevant studies, two possible design alternatives have been developed for the intake. These Alternatives are called Alternative C and D. Both alternatives involve bulk water screening located at approximately RM 5.3, on the same river bend and point-bar as Alternative A. Alternative C uses a vertical plate screening system, and Alternative D uses a horizontal plate screening system.

Both alternatives would have a (1) control sill to control the normal water surface elevation and maintain a consistent river bed elevation for a side channel bulk-water intake. The control sill would consist of a concrete weir with boulders inset on the surface over top of a sheet pile cutoff wall to capture hyporheic flow. The sill would be at the newly established grade of the river bed and would allow uninterrupted flow through a natural looking re-profiled river as a roughened channel series of step pools, riffles, and boulder weirs. (2) An intake structure with a coarse trashrack, jib crane, and radial gate with sluiceway located on the east bank of the river. Diverted water would be conveyed through; (3) an open channel to a; (4) head gate control structure and into a; (5) fish and debris screening structure. (6) Fish and debris would be screened and bypassed back into the river. Screened water would then flow through a power conduit to the underground powerhouse. (7) Access to the intake site would use an existing logging road and approximately 400 feet of new roadway extending to the intake site.

Powerhouse

The powerhouse location would be located underground beneath the selected intake site. This would include a (1) 450-feet tall, 30-foot diameter vertical shaft to allow space for

the power penstock(s), elevator, stairs, ducting, mechanical, and electrical chases. Screened water from the intake screen system would be delivered down a (2) vertical power penstock(s) to the powerhouse. The powerhouse would (3) use four Pelton Turbines each rated at 6.25-MW, as well as appurtenant facilities. The (4) powerhouse substation and (5) elevator building would be located near the intake structure.

Tailrace

The tailrace will be an approximately (1) 8,600 foot long 12 foot diameter tunnel, and is anticipated to be constructed primarily in bedrock. The tailrace water return to the North Fork would be located at approximately the same location as proposed in the PAD at approximately RM 2.6.

Transmission

Transmission would consist of a 34.5-kilovolt underground transmission line and overhead transmission that transmits project power to the regional grid. The transmission line would be sited predominantly on an existing power line corridor. The transmission line would originate at the powerhouse substation located at the intake site at river mile 5.3. Subsurface transmission would follow the vertical shaft to the underground powerhouse, and down the 1.6 mile long tunnel. After exiting the tunnel the transmission would travel underground 1.0 miles on new and existing roads then 4.2 miles as 34.5-kilovolt overhead transmission line predominantly following an existing power line corridor to the point of interconnection. The point of interconnection is located at an existing overhead transmission line near the intersection of 396th Drive SE and SE Reinig Road approximately 0.4 miles from the City of Snoqualmie. A new switch and substation would be added at the point of interconnection to transform voltage from 34.5-kilovolt to 115-kilovolt.

3 DESCRIPTION OF STUDY

The goal of CRC's assessment was to identify any previously recorded cultural resources within the Project, assess potential impacts of the Project to cultural resources, and provide context sufficient for the evaluation of significance of cultural resources in the study area. Assessment methods included a review of previous ethnographic, historical, and archaeological investigations in the local area, a records search at the Washington State Department of Archaeology and Historic Preservation (DAHP 2013b) for known sites in the immediate area, a review of relevant background literature and maps (including General Land Office (GLO), United States Geological Service (USGS), and Kroll maps), a site visit and an ongoing effort to complete an ethnographic survey. This assessment utilized research design that considered previous studies, the magnitude and

nature of the undertaking, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the Projects, as well as other applicable laws, standards, and guidelines (per 36 CFR 800.4 (b)(1)).

4 METHODS

The Project is subject to licensing by the FERC and is therefore considered a federal undertaking. Properties included in, or eligible for, the National Register of Historic Places (NRHP) could be affected by development of the Project. The FERC licensing process includes consideration of cultural resources as mandated by a variety of Federal laws and regulations. These include the National Historic Preservation Act (NHPA); the National Environmental Policy Act (NEPA); the Archaeological Resources Protection Act (ARPA); the American Indian Religious Freedom Act (AIRFA); and the Native American Graves Protection and Repatriation Act (NAGPRA). Guidelines for implementing these authorities for federal undertakings have been published as 36 CFR Part 800, and the Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation.

BCH has filed a cultural resources study plan as a part of the integrated license application process (ILP) in accordance with 18 CFR 5.11. This assessment allowed for the identification of sites that could be affected by the Project, the development of an evaluative framework for assessing site significance and potential impacts, and, ultimately supplies the background information for the formulation of a comprehensive plan for managing any cultural resources for the life of the license if necessary.

The language used to describe cultural resources in this assessment is consistent with professional cultural resource management terminology in the State of Washington, based upon relevant regulations (e.g., 36 CFR 800; RCW 27.53) and guidelines (DAHP 2013a; NRHP 2002; OAHP n.d.).

The term "cultural resources" is used to refer to a broad range of resources including archaeological or historic sites, structures, buildings, places, and objects reflecting human use or modification of the environment (DAHP 2013a:6). For the purposes of this assessment, components of the built environment that are 50 years old are older are referred to as "historic structures" or "historic sites." Historic sites are buildings, structures, objects, places, or sites dating to the historic period. DAHP requires that all such sites 50 years old or older be recorded for the State of Washington Historic Property Inventory (DAHP 2013a:39). "Archaeological sites" are considered to be geographic

locations that contain artifacts, features, structures, or other physical evidence of past human behavior (RCW 27.53.030). Ruins of buildings, structures, objects, places, or sites 50 years old or older are recorded as archaeological sites (DAHP 2013a:37).

Section 106 of the NHPA, as amended, requires federal agencies to "take into account the effects of their undertakings on historic properties" (36CFR800.1). The term "historic property" is used to denote historically significant properties, which are included on or eligible for inclusion on the NRHP (36 CFR 800.16(l)(1)). Resources are typically defined as significant or potentially significant if they are identified as of special importance to an ethnic group or Indian tribe or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the NRHP. Based on NRHP assessment criteria developed by the National Park Service, historical significance is conveyed by properties:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
B. That are associated with the lives of persons significant in our past; or
C. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. That have yielded, or may be likely to yield, information important in prehistory or history [NRHP 2002:2].

According to the NRHP guidelines, the "essential physical features" of a property must be intact for it to convey its significance, and the resource must retain its integrity, or "the ability of a property to convey its significance." The seven aspects of integrity are:

- Location (the place where the historic property was constructed or the place where the historic event occurred);
- Design (the combination of elements that create the form, plan, space, structure, and style of a property);
- Setting (the physical environment of a historic property);
- Materials (the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property);

- Workmanship (the physical evidence of the crafts of a particular culture or people during any given period of history or prehistory);
- Feeling (a property's expression of the aesthetic or historic sense of a particular period of time); and
- Association (the direct link between an important historic event or person and a historic property) [NRHP 2002:44].

Archaeological sites are most commonly determined eligible for inclusion in the National Register based on Criterion D because they "have yielded or may be likely to yield information important in prehistory or history" (NRHP 2002). In some cases, other National Register criteria may apply to archaeological sites as well. However, in order to be eligible under these other criteria, a property must also retain integrity. For historical archaeological sites, eligibility under Criteria A, B, or C is rare. To meet National Register Criterion D, information derived from a historical archaeological site must be significant. The information must be able to add to our understanding of the historic context or theme it represents, and it must not be available in existing sources, including oral history, or from more intact examples of the resource type.

Criteria used for assessment of potential eligibility for the Washington Heritage Register (WHR) are similar to NRHP criteria (OAHP n.d.). Criteria to qualify include:

- Age of at least 50 years, or if newer, documented exceptional significance.
- The resource should have a high to medium level of integrity.
- The resource should have documented historical significance at the local or state level.

Since the Project is within King County, consideration will also been given to cultural resources for their potential eligibility for nomination as King County Landmarks (KCL). Criteria for eligibility as a King County Landmark are essentially the same as those established for the NRHP, along with requirements of integrity and an age of at least 40 years (King County Historic Preservation Program [KCHPP] 1999).

Potential eligibility for historic registers is related to a site or structure's integrity and historical significance, as well as its age. Integrity is defined as the "ability of a property to accurately represent the past through original design qualities, materials, landscape, setting, etc." (OAHP n.d.). Impacts to archaeological historic properties can often result from activities that occur in the vicinity of the resource. Ground disturbing, excavation,

earthmoving, and construction activities typically have the potential to cause adverse impacts to buried archaeological deposits.

The evaluative context for determining significance is guided by research domains as suggested in regional archaeological literature (e.g., Blukis Onat et al. 2001; Hollenbeck 1987; Nelson 1990; Wessen and Stilson 1987). Significance of precontact sites in the Project area could potentially be related to post-glacial settlement of the region, changes in site types, and use of environmental resources over time (Blukis Onat 2001:1-32 – 1:33; Lewarch et al. 2002:16-17). Additionally, precontact sites may potentially have significance as Traditional Cultural Properties to one or more tribal and/or ethnic groups (Parker and King 1990). Frequencies of materials found at high-density historic-period artifact scatters may provide economic data relevant to larger historical trends, and potentially may be suggestive of relative economic status and possibly ethnicity. However, twentieth century disturbances from logging have most likely destroyed the integrity of archaeological deposits that may have been present, seriously compromising their potential significance.

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

5 RESULTS

5.1 Record Search and Literature Review

Determining the potential for the property to contain cultural resources was partly based upon review and analysis of previously collected environmental and cultural information for the local area. Sources reviewed for this assessment included archaeological, historic, and ethnographic records on file at DAHP; selected local historical, environmental, and ethnographic data; geological maps and reports; and historic maps and newspaper articles

on file at the Seattle Public Library's Seattle Room. Primary sources included plat maps and cadastral surveys of the late nineteenth and early twentieth centuries produced by the General Land Office (USSG 1897, 1899, 1903).

5.1.1 Environmental Context

Archaeological evidence suggests human occupation in the Puget Sound region began following the last glacial retreat at the end of the Pleistocene, approximately 14,000-10,000 years ago. The environmental changes produced by deglaciation, including alterations to landscapes, climate, and vegetation significantly influenced the spatial distribution of human activities, based on the availability of resources and the suitability of certain landforms for occupation. The potential distribution of archaeological resources in the vicinity of the property, and the identification of conditions that may have affected contemporaneous preservation of these resources, are informed by understanding changes to the local environment over time.

The Project is geographically situated on the eastern edge of the Puget Lowland, on the North Fork, in the Snoqualmie River Watershed, within the Snohomish River Basin. Present-day topography is characterized by the narrow, steep-walled North Fork channel bordered by terraces (Figure 2).

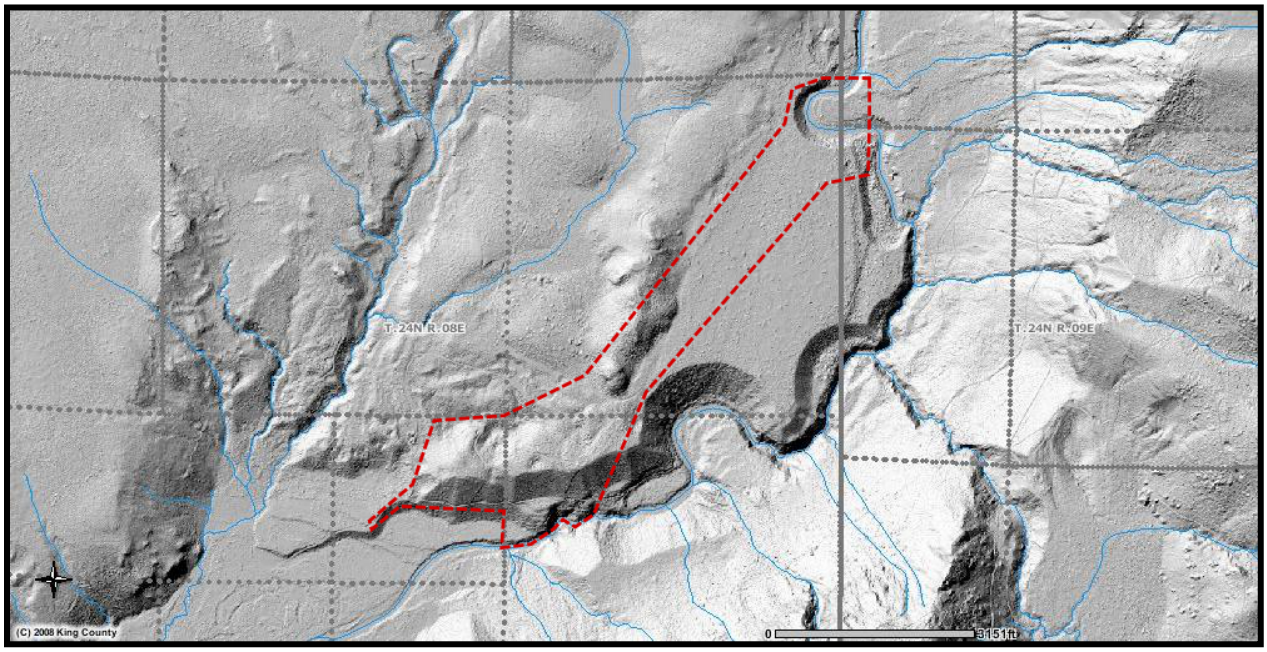

Figure 2. Shaded relief imagery (King County 2013)

Elevation in the Project ranges from approximately 480 feet above sea level at the southwest end in the proposed transmission line, to 1,000 feet in the vicinity of the

proposed intake and 1,280 feet on a hill between the proposed tailrace exit and intake (Figure 3).

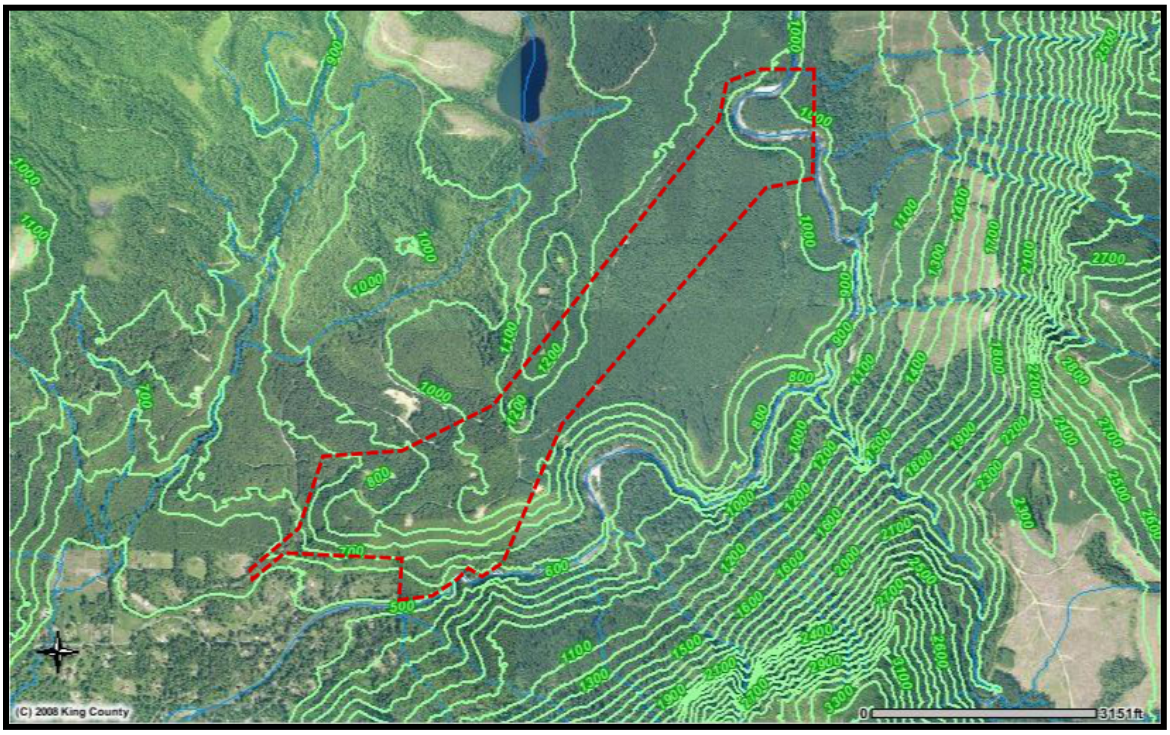

Figure 3. Aerial imagery labeled with 100-ft elevation contours (King County 2013)

The Project is in the Tsuga heterophylla (western hemlock) vegetation zone, which is characterized by forests of western hemlock, western red cedar, and Douglas fir (Franklin and Dyrness 1973). General Land Office surveyors who surveyed the Project area in the late nineteenth century noted a heavily timbered landscape with rolling topography "broken by the deep and narrow cañon of the North Fork" (USSG 1897:171). Vegetation consisted of hemlock, fir, cedar, alder, cottonwood, and maple trees, and dense understory of salmonberry, huckleberry, vine-maple, and devil club (USSG 1897). A variety of mammals, fowl, and fish could be found in the Project area, many of which were useful to precontact and historic human populations (Hollenbeck 1987). Passage of anadromous fish to the upper Snoqualmie River Basin is blocked by Snoqualmie Falls but other species, including lampreys, trout, and mountain whitefish, would have been available (Baenen 1981; Wydoski and Whitney 1979).

The topography and geology of the area were formed during the Late Pleistocene, following the advance of several glaciations that originated from Canada and extended between the Cascade and Olympic mountain ranges into the Puget Lowland (Kruckeberg 1991:12). The most recent glacial event in the Puget Sound, termed the Vashon Stade, is

largely responsible for the region's contemporary landscape; glacial advance and retreat scoured and compacted underlying geology while meltwaters carved drainage channels into glacial outwash deposits (Booth et al. 2003).

The North Fork is a relict subglacial stream channel carved by glacial meltwater that flowed below the Puget Lobe glacier near its edge on Mount Si (Booth 1990). The river incised Fraser-age (Vashon Stade) glacial outwash deposits as the glacier retreated from the area, and the channel would have been aerially exposed as an ice marginal channel once the glacier retreated. Following rising temperatures, the glacier retreated rapidly to the north and left the regional landscape ice-free and suitable for inhabitants by approximately 11,000 years ago (Kruckeberg 1991:22). Land surfaces that had been covered by ice uplifted. This isostatic rebound varied locally and was much more subtle in the southern Puget Lowland than in the north (Thorson 1989).

While sedimentation during glacial times was widespread and voluminous, active deposition in nonglacial periods including the present day has been more restricted. Surface geologic deposits mapped in the Project are Qgo (Pleistocene glacial outwash) along the majority of the North Fork valley and surrounding hills, KJmm(wa) (argillite and graywacke of the western melange belt, which are Cretaceous-Jurassic marine sedimentary rocks) on hills with rock outcrops between the proposed intake and tailrace exit, and Qa (Quaternary alluvium) in the southwesternmost part of the Project near the upstream edge of the North Fork's floodplain (WA DNR 2013).

Locally mapped soils include Sauk silt loam, 0 to 8 percent slopes; Ogarty gravelly loam, 30 to 65 percent slopes; Klaus sandy loam 0 to 8 percent slopes; Blethen gravelly loam, 30 to 65 percent slopes; and Barneston gravelly sandy loam, 0 to 8 percent, 8 to 30 percent, and 30 to 65 percent sloes (USDA NRCS 2013).

The Sauk and Klaus soils are mapped on the inside of the bend in the river channel at the north end of the Project. Klaus sandy loam formed on terraces in volcanic ash and alluvium over glacial outwash. This soil typically has a profile of sandy loam over gravelly sandy loam, very gravelly sand, and extremely gravelly sand. Sauk silt loam also formed on terraces, in parent material composed of volcanic ash and alluvium. The typical profile contains silt loam, fine sandy loam, and very gravelly loamy sand (Goldin 1992:103, 198).

The Barneston soils formed on terraces and escarpments in volcanic ash and glacial outwash parent material. These soils are mapped on the outside of the bend in the river channel at the north end of the Project, through most of the area between the proposed intake and tailrace exit, and on upslope areas of the banks of the river near the tailrace exit and the terrace edge north of the proposed transmission line. The typical profiles contain gravelly sandy loam, very gravelly sandy loam, and extremely gravelly sand (Goldin 1992:24-26).

The Ogarty and Blethen soils are mapped on a prominent hill with rock outcrops in the route between the tailrace exit and the intake. The Blethen soil formed on mountain slopes in volcanic ash and slope alluvium derived from glacial drift, and is composed of gravelly loam, very gravelly sandy loam, and extremely gravelly sandy loam. The Ogarty soil formed on hillslopes in volcanic ash and colluvium and residuum derived from andesite and tuff breccia. The typical profile is composed of gravelly loam and extremely gravelly fine sandy loam overlying unweathered bedrock at a depth of 37 to 47 inches below surface (Goldin 1992:33-34, 145-146).

The Snoqualmie River Basin contains multiple seismic faults. Nearest to the Project are an unnamed concealed fault rending northward along Tate Creek west of the Project, the Rattlesnake Mount fault zone, the Tokul Creek fault, and the Snoqualmie River fault (Dragovich et al. 2009). Historical records of seismic activity include two earthquakes in the vicinity of the study area: a magnitude 5 event in 1891 on the southwest side of Mount Si, and a magnitude 5 event on the south side of Teneriffe Mountain in 1957. Deformation or other surface features associated with these or other past earthquakes are not reported in the Project area (WA DNR 2013).

Paleontological resources in the vicinity of the Project are largely unknown. Pre-Fraser age sedimentary deposits are not mapped in the study area, and are rare in the upper Snoqualmie valley due to erosion prior to the most recent glaciation. Deposits from the most recent glaciation directly overlie bedrock in most places (Booth 1990). Late Pleistocene remains of now-extinct fauna such as giant bison or mastodons could be found in sediments deposited in the last glacial period. However, remains of these animals are generally found around bogs or lakes (Gustafson et al. 1979; Kenady et al. 2011). Lakes, such as McLeod Lake, dot the North Fork watershed, and GLO notes describe a “swamp” along the west edge of Section 24 of T. 24 N., R. 8 E. and “shaking bogs” elsewhere in the township (USSG 1897:176, 187). Marshy areas are depicted on topographic maps of the area, particularly west of Tate Creek (USGS 1989, 1993), but

the Project does not contain such environments, nor does it appear to have in the past. The Cretaceous-Jurassic marine sedimentary rocks northwest of the Project could potentially hold marine fossils. However, this potential may be diminished because these rocks were intensively sheared and deformed as the rocks were scraped off the top of a crustal plate as it underwent subduction, and as a result, they were subject to metamorphism and deformation. In the Snoqualmie area, rocks of the middle Eocene-age Raging River Formation are known to be highly fossiliferous. This formation outcrops in the Preston area, about eight miles west of the Project (Bethel 2004:7, Figure 3).

Lithic raw material sources are not indicated for the Project or immediate vicinity by geologic maps (WA DNR 2013). Mount Si and Fuller Mountain are composed of marine metasedimentary rocks, metavolcanic rocks, and gabbro, and granodiorite and marine metasedimentary rocks, respectively. The east side of Rattlesnake Mountain, approximately 5 miles southwest of the Project, contains andesite, an igneous rock that can be flaked to produce tools. Andesite outcrops are also mapped in the Tokul Creek valley 3.8 miles northwest of the Project, and on the ridge north of Calligan Lake, 4.5 miles north-northeast of the Project. Quartz crystal can be found in the Middle Fork Snoqualmie River, and cherts may be available in clastic deposits or lag in streambeds or eroding hills (Blukis Onat et al. 2001:xvii; LeTourneau and Stone 2001:7-16). Sources of cryptocrystalline silicates (e.g., chert or flint) and obsidian have not been identified in the Project or immediate vicinity (Hollenbeck 1987; WA DNR 2013).

5.1.2 Archaeological Context

Thousands of years of human occupation in Puget Sound region have been summarized in a number of archaeological, ethnographic, and historical investigations over the past several decades that provide a regional context for evaluating the project area (e.g., Hollenbeck 1987; Nelson 1990). Human use of the area is generally structured around the value of natural resources available in local environments including fresh water, terrestrial and marine food resources, forests, and suitable terrain. Archaeological context for evaluating this Project area is provided by information regarding the local and regional chronological sequence and research problem domains as described by Blukis Onat et al. (2001), Wessen and Stilson (1987), and others.

The landscape of the Project area would have been available for occupation once the Puget Lobe and meltwaters receded, over 10,000 years ago, and archaeological evidence from the region supports this (Carlson 1990). Archaeological sites from the Paleoindian period are scarce in the Puget Lowland and Cascades. Recently, a Paleoindian

component was identified in stratified sediments at a site on Bear Creek, a tributary of the Sammamish River (Kopperl et al. 2010), approximately 20 miles northwest of the Project.

Evidence has been found for human occupation of the Snohomish River Basin in the early and middle Holocene. The lithic artifacts of this period in western Washington are called Olcott, and include leaf-shaped points, flake tools, and other implements commonly made from igneous rocks including basalt and dacite (Carlson 1990; Kidd 1964; Rooke and Chatters 2010). One well-documented site from this time period is 45KI464 on the Tolt River (Blukis Onat et al. 2001), approximately ten miles north-northwest of the Project.

Characteristic of the ethnographic pattern in the region, seasonal residence and logistical mobility occurred from about 3000 BP. Organic materials, including basketry, wood and food stuffs, are more likely to be preserved in sites of this late precontact period, both in submerged, anaerobic sites and in sealed storage pits. Sites dating from this period represent specialized seasonal spring and summer fishing and root-gathering campsites and winter village locations. These kinds of sites have been identified in the Puget Lowland, typically located adjacent to, or near, rivers or marine transportation routes. Fish weirs and other permanent constructions are often associated with large occupation sites. Common artifact assemblages consist of a range of hunting, fishing and food processing tools, bone and shell implements and midden deposits. Similar economic and occupational trends persisted throughout the Puget Lowland until the arrival of European explorers.

Native American villages in this region were typically located very near or adjacent to water bodies (Suttles and Lane 1990). Nineteenth century maps reviewed in this assessment (e.g., General Land Office maps) do not depict Indian villages or sites near the Project; however negative “evidence” should not be construed as a measure of the lack of archaeological potential, as it is possible that cartographers failed to record Indian settlements. However, the steep wooded slopes of the Project and the high-gradient reach of river involved in the Project are less hospitable environments than can be found downstream. It is probable that the main precontact human activity areas were located in less densely vegetated areas with more level ground, rather than on the terrace tread and riser above that constitute the majority of the Project, although activities such as hunting and plant gathering might have occurred here. Wetlands, streams, and lakes west of the Project were likely used as grounds for hunting, fishing, and collecting plant resources.

Knowledge of prehistoric use of the Cascade foothills in the Snoqualmie Watershed comes primarily from two archaeological sites that have undergone large-scale excavation. The Tokul Creek site (45KI19) is located along the right bank of the Snoqualmie River less than a mile downstream from Snoqualmie Falls, approximately five miles west-northwest of the Project. This site contained worked antler, hearth features, and chipped stone projectile points diagnostic of the late prehistoric period. It was interpreted as a temporary campsite that had been repeatedly occupied (Blukis Onat and Bennett 1968). A few miles downstream from the Tokul Creek site on the banks of the Snoqualmie River is the Fall City site (45KI263), which contained abundant fire modified rock, charcoal, and burned features along with flaked and ground stone artifacts and structural features such as post molds. Calibrated results of radiocarbon assay clustered around 450 to 500 BP (Schumacher and Burns 2005:50-51). Although no evidence of large, permanent structures was found, the site may be associated with the remains of a historically documented plank house and village (Nelson 1998; Schumacher and Burns 2005:60).

5.1.3 Ethnographic Context

The Project is situated in the homeland of the Snoqualmie people, who occupied the valleys of the Snoqualmie River and its tributaries. The word Snoqualmie is a transcription of the tribal people's name for themselves, sdokwa 'lbiu, often translated as "people of the moon" (Evans 1990:1). The name is said to originate from the Snoqualmies' relationship to Moon the Transformer (Ballard 1999:69; Waterman 1920, 2001). The Snoqualmie are Southern Lushootseed speakers who, along with people in the upriver portions of the Nisqually and Puyallup drainages, had regular contact with Sahaptin-speaking Kittitas and Yakama people via the Snoqualmie and Yakima passes (Prater 1981:13; Suttles and Lane 1990:488). Snoqualmie people had kinship ties with the Duwamish, Skykomish, Yakama and other groups (Tollefson 1987:126).

The Snoqualmie traveled by canoe in the Snoqualmie and Snohomish drainages and as far as Whidbey Island, and by foot and horseback to the Yakima and Kittitas valleys to engage in trade and subsistence activities (Baenen 1981:443, 448-449; cf. Haeberlin and Gunther 1930; Tollefson 1987:124, 126). Goods and materials were distributed among island, delta, riverine, and foothills ecological zones (Tollefson 1987:130). The Snoqualmie were known for their prowess hunting large game such as elk, deer, and mountain goat, and they built a variety of fish traps and rock dams in the Snoqualmie River (Lane 1975:33-35). Due to the strategic position of their homeland, the

Snoqualmie were able to supervise and influence trade and communication between the Puget Lowland and the Mid-Columbia Plateau. By the end of the eighteenth century, the Snoqualmies had obtained horses, likely from the Wenatchi or the Yakama, allowing them to transport a variety of trade goods such as dried berries, root cakes, buffalo robes, pipes, tobacco, bows, shells, and dressed skins (Teit 1928:121).

The Snoqualmie Tribe was a signatory of the 1855 Treaty of Point Elliott, but was only recently re-recognized and granted tribal status from the Bureau of Indian Affairs. After the signing of the treaty the Snoqualmie people tried to secure a reservation in their ancestral lands by the Tolt River but were not successful. The Tulalip Tribes were the successors in interest to the Snohomish, Snoqualmie, and other signatory bands (Ruby and Brown 1992:214-216; WA GOIA 2013). The Tulalip Tribes are located on the Tulalip Reservation, which encompasses a land-base of approximately 22,000 acres for 4,000 members (2,500 of whom reside on the Tulalip Indian Reservation). Following recognition of the 650-member strong Snoqualmie Tribe in 1999, the Tribe acquired its initial reservation land and developed a casino to help fund the costs of tribal governance, administration, and service to its members. The Snoqualmie Tribe has located its government in the town of Snoqualmie (WA GOIA 2013).

The ethnographic record for the Snoqualmie valley includes names for a variety of topographic features, particularly mountains, prairies, and confluences, but none has been noted in the Project or immediate vicinity. Waterman (2001) lists three names for places in the vicinity of the North Fork. Fuller Mountain is known as Swi'tud, and Mount Si is called Q3Elbts. A hill to the north of Mount Si is known as XwotstLKtw, which Waterman translated as "wife of Mount Si" (Waterman 2001:Map 6.1, Table 6.1). Although named places in the Project Boundary are not a part of the published ethnographic record, it is likely that the Snoqualmie Tribe used the North Fork basin and surrounding areas seasonally, particularly during the summer and early fall. Hunting and gathering parties may have visited the Project area to acquire upland game, cedar or other plant materials for technological use, and berries or other plant foods (Hollenbeck 1987:17). An ethnographic inventory is being conducted in cooperation with the Snoqualmie and Tulalip tribes to identify any TCPs at the project location.

Waterman (2001:50) noted two Snoqualmie village locations. One was below Snoqualmie Falls, on a flat across the river from the town of Tolt (present-day Carnation [Lange 1998b]), approximately 11 miles northwest of the Project. The settlement was known as Xal3a'Ltxw, loosely translated as "house with design patterns," and its

inhabitants were called Xal3a'ltxw-a'bc. Waterman (2001:178) describes this as "an old village site, the principal settlement of Snoqualmie people." The other settlement was about 5.5 miles southwest of the Project in the upper Snoqualmie valley. It was known simply as Ba'xab, or "prairie;" its residents were called Sbakwoba'bc, "prairie dwellers" (Waterman 2001:50). The Middle Fork Snoqualmie River flows through this prairie, where the I-90 corridor and the town of North Bend are now located. According to Hollenbeck (1987:171) there were also villages at Fall City and along many Snoqualmie River tributaries downstream from Snoqualmie Falls.

5.1.4 Historic Context

The first exploration and mapping of the Puget Sound is credited to Captain George Vancouver in 1792, under the auspices of the British Royal Navy. Vancouver surveyed much of the Sound, but the exploration did not extend inland (Morgan 1979:16). Decades later, in 1841, the Wilkes Expedition traveled to chart what was then called Oregon Territory. The territory was jointly occupied by the United States and Britain, particularly the British Hudson Bay Company, which established Fort Nisqually in 1834. In an attempt to increase American presence in Oregon Territory, the Wilkes Expedition produced the first detailed map of the area and promoted the region's potential for economic development, arriving in Puget Sound in 1841 (Morgan 1979). Within a few years of the Wilkes party's survey, more Americans began to settle in the region.

Euro-American settlement in Oregon Territory was further encouraged by the passage of the Donation Land Claims Act in 1850. Homesteaders began to settle in the lower Snoqualmie River within the decade (Prater 1981:65). Land disputes between the homesteaders and Indians resulted in treaties between the U.S. government and tribes, including the Treaty of Point Elliott described above. However, violent conflict between homesteaders and other newcomers and the Indians persisted. Defensive structures were built in the Snoqualmie valley. Two blockhouses, one at Toll Gate Farm called Fort Smalley and another Meadowbrook called Fort Alden, were constructed in the upper valley by volunteer soldiers known as Rangers, hence the name "Rangers Prairie" for the upper Snoqualmie floodplain (Evans 1990:5; Polley 1980:4-5).

The Euro-American population in the vicinity of the Project was sparse in the late nineteenth and early twentieth centuries. The 1870 census listed only 31 white males in the Squak (Issaquah) and Snoqualmie valleys combined. By 1900 the population had increased to 429 people in Snoqualmie and 449 in North Bend (Evans 1990:48). According to local lore passed down from Otto and Dio Reinig, who arrived in the

Snoqualmie valley in 1890, there were many Snoqualmie villages, the largest of which was in the Meadowbrook area.

Portions of the lower Snoqualmie valley had been cleared and were under cultivation by the 1860s (Evans 1990; Prater 1981). Agricultural activity in the upper valley around the confluence of the Middle Fork and North Fork Snoqualmie rivers began later than in the lower valley. The Bybee-Nims Holly and Blueberry Farm was established in 1945 on 80 acres at the foot of Mount Si, with the first commercial plantings of holly trees, strawberries, and blueberries in the Snoqualmie valley (Watson 1992:4).

The location of present-day North Bend was known as Rangers Prairie (Lange 1998a) and the town was platted as "Snoqualmie" in 1889. The prairie had been maintained through burning by Indians living in the area. This practice enriched the soil, increased productivity of edible plants (particularly tubers), and enhanced habitat where prey species such as deer could be more easily seen and hunted. Roots, bulbs, and tubers including fern root were harvested from prairies in the Snoqualmie watershed (Ballard 1999:69; Lewis and Ferguson 1999:168-169; Norton 1979). While the prairie and the broad floodplain of the Snoqualmie River and its tributaries attained prominence for agricultural production, lands on the banks of the North Fork came to be used primarily for logging.

Lands containing the Project Boundary were not formally claimed until the first years of the twentieth century. GLO maps from this period indicate that homesteaders had arrived in the study area by 1899 (USSG 1899, 1903). One cultural feature, a trail, is depicted within the Project (Figure 4). These maps show clearings and structures in the area surrounding the Project but no improvements are shown within the Project area.

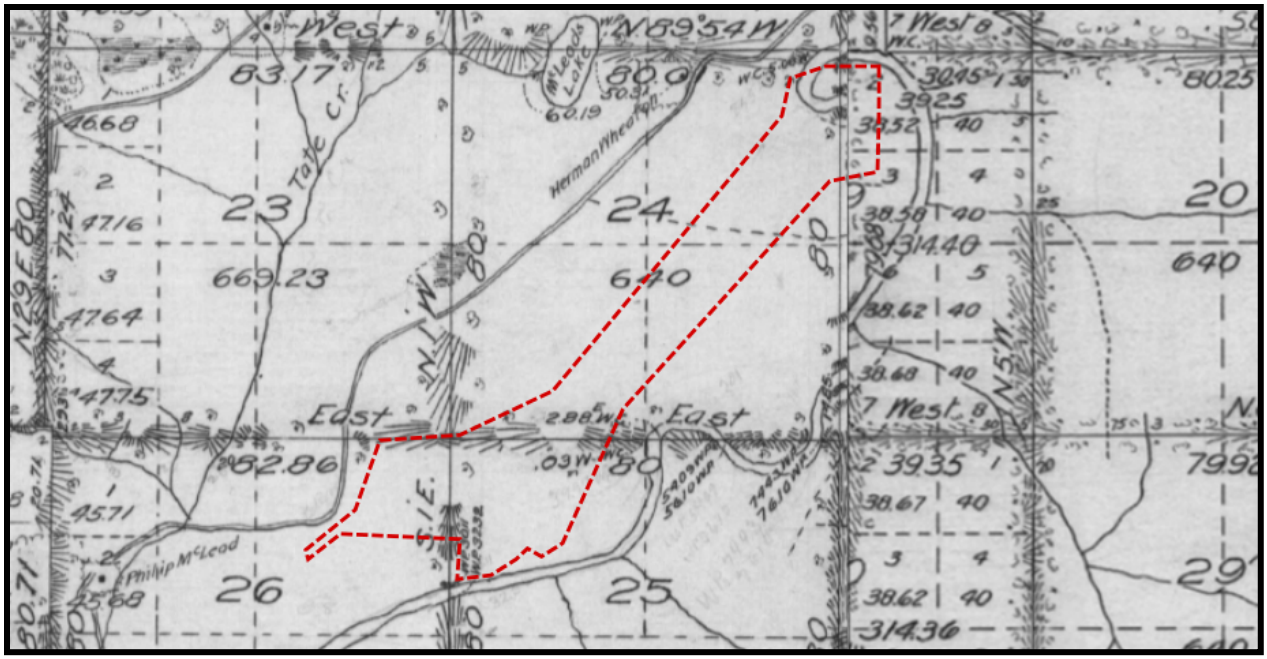

Figure 4. Portions of GLO maps (USSG 1899, 1903) showing cultural features in the Project and vicinity. No structures are mapped in the study area but a trail crosses from a road west of the Project and trends east toward the North Fork

An online search of land records identified several patents filed in or adjacent to the Project (BLM 2013) (Table 1). These include individual homestead claims, likely obtained for logging purposes. Ownership of most lands containing the Project had been transferred to lumber companies within a decade (Anderson 1907; Kroll 1912).

Over the last approximately 100 years, the primary activity in the Project and immediate vicinity has been logging. The first lumber mill in the valley was established at Tokul in 1873, just below Snoqualmie Falls. Lumber industry developments continued to center on this area, as roads and railroads were established to transport timber to mills including that of the Snoqualmie Falls Lumber Company (Evans 1990: 28-29; Kroll 1930). There was also a mill established at Tanner in 1893, and a mill camp at Tanner in 1908 (Hill 1994:126). Early land acquisitions for lumber companies were begun by O. D. Fisher in 1906 in an operation called the Grandin Coast Lumber Company (Evans 1990:29). He later merged interests with the Weyerhaeuser Timber Company and these combined holdings were incorporated as Snoqualmie Falls Lumber Company in 1914, with an initial acreage of 45,000. The company's timberland holdings later increased to 165,000 acres, all in King County (Evans 1990:31), and included fir, cedar, and hemlock (Hill 1994:127). The company began logging in 1917 and it's sawmill began operations the same year (Evans 1990:30).

Mining operations dotted the upper reaches of the North Fork Snoqualmie River and its tributaries, particularly Bear Creek, Lennox Creek, Sunday Creek, and Illinois Creek. This area, approximately 20 miles northeast of North Bend, contains many claims that were worked for silver, gold, copper, lead, zinc, molybdenum, antimony, pyrite, galena, and other materials (Northwest Underground Explorations 1997). Closer to the Project, there were mining claims on Green Mountain in Sec. 33, T. 24 N., R. 9 E., approximately three miles to the southeast (Metsker 1936; USSG 1903). Archival review did not reveal any mining claims in the Project or immediate vicinity (BLM 2013).

Regional travel routes have followed the Snoqualmie valley for at least the past 150 years. These have included the Seattle Lake Shore and Eastern Railroad and a road that connected Renton to Snoqualmie Pass via North Bend (later the Sunset Highway) (Lange 1998a, 1998b; Prater 1981). In 1941, U.S. Route 10 was completed. This paved, four-lane highway from Seattle to Spokane was the predecessor to present-day I-90 (Quackenbush 2003:7). These routes were important to the economic development of the valley as they allowed movement of agricultural and mill products to market in Seattle.

Networks of logging roads and railroads were built in the Cascade foothills, particularly along the Middle Fork Snoqualmie River and in the area around Tokul (Boswell et al. 1990:78; Kroll 1930). Logging railroads were not developed in the Project or immediate vicinity (Kroll 1912, 1926, 1930, 1946, 1958; Metsker 1936). Historical maps show roads from the North Bend area up the right (west) bank of the North Fork Snoqualmie River beginning in the early twentieth century (Kroll 1912). Lake Hancock Road/SE 88th Street, which crosses the Project Boundary, follows an alignment similar to a road trending northeast from the SW¼ of SW¼ of Sec. 24, T. 24 N., R. 8 E., marked in county atlases from the 1920s and 1930s (Kroll 1926; Metsker 1936). Other roads on the right (west) bank of the North Fork Snoqualmie were also developed for logging in the early twentieth century (Anderson 1907; Kroll 1912, 1946).

The Civilian Conservation Corps (CCC) was active in the upper Snoqualmie valley, particularly in its construction in 1935 of Camp North Bend, now called Camp Waskowitz, a workers' camp with barracks, a dining hall, and other buildings (King County Historic Preservation Program 2013; Watson 1992:5) approximately four miles south of the Project. Men stationed at this camp were supervised by the Forest Service, and they worked to construct a road and trail system, portions of which still provide access for recreation and other purposes on the Middle Fork Snoqualmie River (Boswell

et al. 1990:Figure 11; Hollenbeck 1987; Kopperl 2004; Swain 2010). Many of these roads were originally a part of the North Bend Timber Company's railroad, and were converted for vehicular use and foot traffic (Watson 1992). The CCC and NBTC do not appear to have built any roads or trails in the Project or immediate vicinity.

5.1.5 Previously Recorded Sites and Surveys

Very few cultural resource studies have been previously conducted in the Project or immediate vicinity. One archaeological survey was performed in an area containing the current Project (CH2M Hill 1982), and only one other cultural resources survey has been conducted within a one-mile radius of the Project (Gerrish and Greene 2011). However, multiple historic structure surveys, archaeological surveys, archaeological monitoring, and archaeological test excavations have been reported in the towns of North Bend and Snoqualmie and along the Middle Fork Snoqualmie River (Table 3). None of these investigations has identified any historic properties that would be affected by the development or operation of the Project.

Archaeological sites have not been recorded within the Project or within a one-mile radius. The precontact archaeological sites nearest to the Project are on the Middle Fork and South Fork Snoqualmie rivers over 1.5 miles southwest of the proposed transmission line at the downstream end of the Project (Table 4). Residential sites characterized as camps or villages have been found on the Snoqualmie River floodplain and along tributaries such as Tokul Creek, Tolt River, and Raging River (Blukis Onat and Bennett 1968; Blukis Onat et al. 2001; Schumacher and Burns 2005). The paucity of archaeological sites identified by previous investigations in the North Fork Snoqualmie River valley may be an artifact of the very low number of archaeological investigations conducted in the vicinity of the Project rather than an accurate reflection of past human land use practices.

Historic structures and historic-period archaeological sites have not been recorded within the Project or within a one-mile radius. Recorded standing historic structures within three miles of the Project are associated with the Snoqualmie valley's agricultural and transportation developments (Table 5). Historic-period archaeological sites include the remnants of logging, mining, and related transport operations (e.g., historic road and railroad grades) (Table 4).

The DAHP statewide predictive model uses environmental data about the locations of known archaeological sites to identify where previously unknown archaeological sites are

more likely to be found. The model correlates locations of known archaeological to environmental data "to determine the probability that, under a particular set of environmental conditions, another location would be expected to contain an archaeological site (Kauhi and Markert 2009:2-3). Environmental data categories included in the model are elevation, slope, aspect, distance to water, geology, soils, and landforms. The model classifies the property location as "Survey Highly Advised: Very High Risk" (DAHP 2013b). This appears to be supported by the presence of a riverine terrace in the Project area and the distance to the North Fork Snoqualmie River, but is contradicted by steep slopes in portions of the Project, and elevation of much of the Project area above the river channel (see Figure 2 and Figure 3). The expectations from the model are also somewhat diminished by the history of ground disturbance from logging.

5.2 Project Area Probability Analysis

Topographic, soil, and geologic maps, slope data, and aerial imagery were reviewed to identify landforms where archaeological sites could be present. Characteristics such as slope, terrace and ridgeline locations, depositional environment, and recent disturbance (e.g., by mechanical logging) were taken into consideration.

Archaeologists also made an initial site visit on June 17, 2013. The goal of the site visit was to observe existing conditions within the Project, particularly terrain and evidence of past disturbances as they pertain to archaeological potential within the Project. Conditions observed were consistent with those identified based upon review of maps, LiDAR, and aerial photographs. The river banks are generally steep and wooded with second- or third-growth forest (Figures 5).

Figure 5. Existing conditions on the right (north) bank of the North Fork Snoqlamie River near the downstream end of the Project, view to the southeast

Some areas in the upstream portion of the Project, in the vicinity of proposed access roads for Intake Alternatives C and D on the left (east) bank of the river, have been more recently logged (Figure 6). No aboveground archaeological or historic features, objects, or other signs of archaeological or historic sites were observed in the initial site visit.

Intact native soils are not expected to be present in the majority of the Project due to the absence of depositional environments and the history of timber harvesting that has disturbed near-surface sediments. The presence of Pleistocene deposits near the ground surface (WA DNR 2013) indicates that local topography has been relatively stable in the majority of the Project since humans have been present in the region. Any evidence of postglacial cultural activity in such settings is typically present near the modern ground surface. The presence of alluvium in the southwestern part of the Project in the proposed transmission corridor, and alluvial soils in the northeastern part of the Project (WA DNR 2013) indicates that archaeological materials may be deeply buried by flood deposits in these areas.

Figure 6. Existing conditions in the access road area for proposed Intake Alternatives A, C, and D

Local topography also suggests a low potential for intact archaeological deposits in most of the Project. Slopes in the locations of the proposed tailrace exit and intake alternatives are variable. At the tailrace exit location, slopes range from categories of 0 to 20 percent up to 100 to 120 percent. Slopes in this area are 40 to 120 percent on the riverbank and 40 to 80 percent along SE 70th Street; a comparatively level area (Figure 7). Slopes in the intake alternative locations range from the 0 to 20 percent category to the 60 to 80 percent category. The location of Intake Alternatives C and D is on the left bank on the inside of a meander bend, where slopes are generally 0 to 20 percent with steeper areas to the east and northeast (Figure 8).

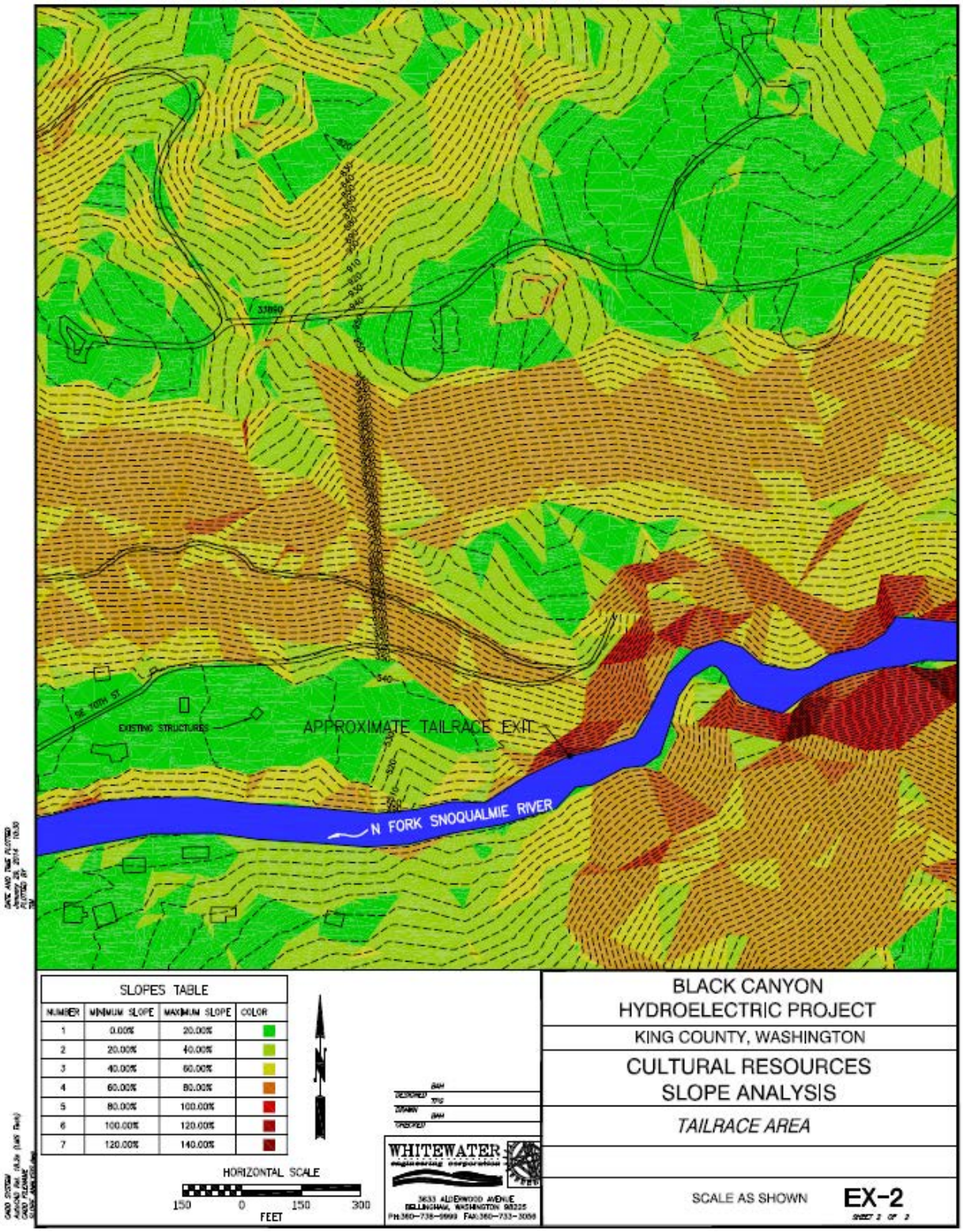

Figure 7. Tailrace exit location slope analysis

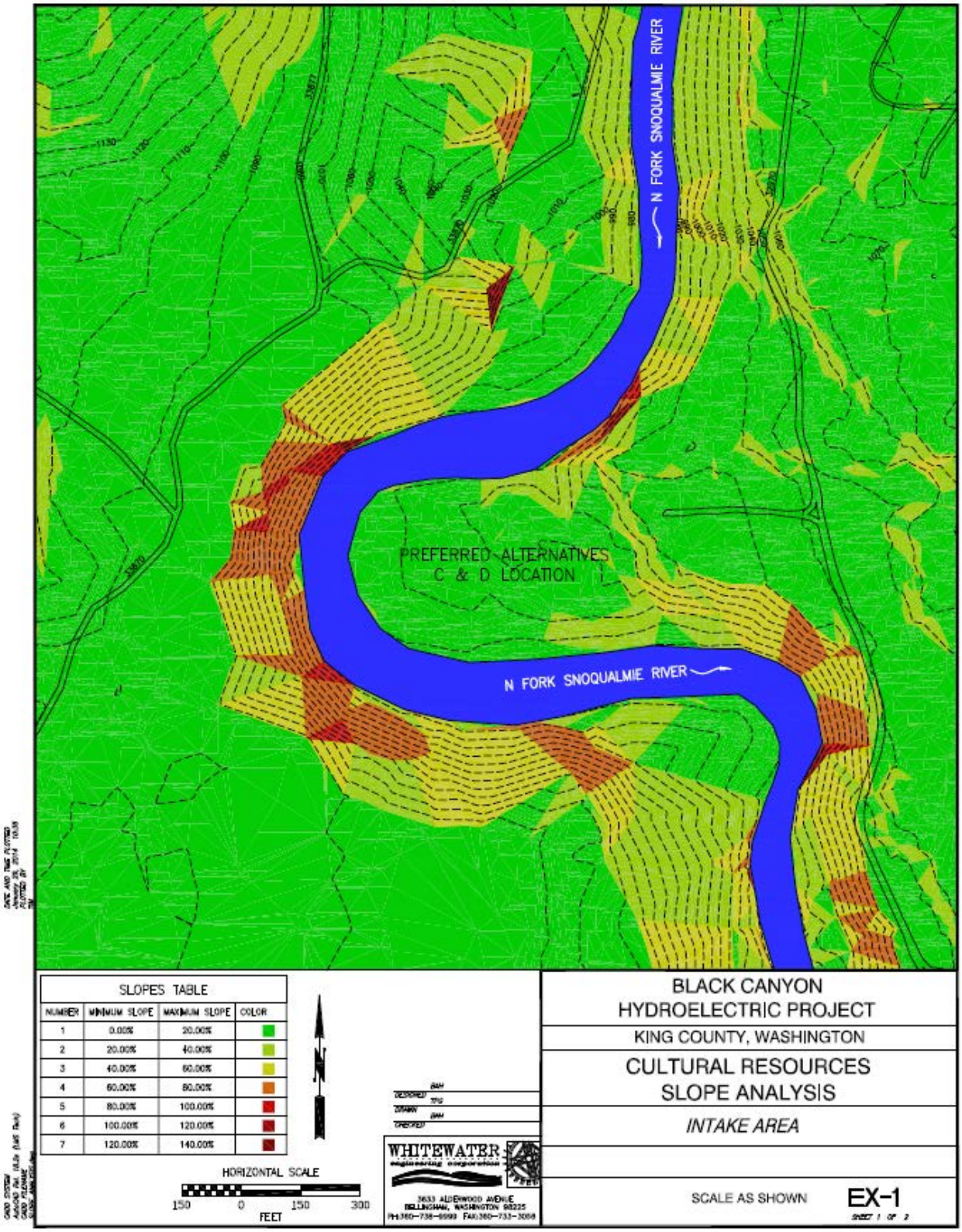

Figure 8. Intake area slope analysis

Natural land surfaces with slopes less than 20 percent are considered to have the potential to contain intact archaeological sites; areas with steeper slopes would not be suitable for camping, resource processing, or other activities that would generate significant archaeological deposits. Within areas of 20 percent or less slope, locations with post-glacial sediments and no evidence of past disturbance (e.g., mechanical logging) have the potential for buried archaeological material to be preserved. Such "high-probability" locations within the Project are confined to about 80 percent of the location of Intake Alternatives C and D, and the 0.65 mile of new transmission.

Based on existing archaeological data and land use patterns for this region as described above, precontact cultural materials could potentially include the remains of short-term habitation sites, lithic scatters, trails, or similar features, which could represent a range of domestic, subsistence, and ceremonial activities.

Historic-period uses of the Project area have included logging and related transportation. However, such activities are unlikely to leave a distinctive archaeological signature. These activities could potentially have resulted in deposition of archaeological materials; such deposits could arguably be significant if they retained depositional integrity and could result in data that would inform research questions regarding facets of historical life relevant to the social, economic, or cultural development of the region. Historic-period materials and features likely in the Project area include remnants of logging equipment or machinery, springboard-notched stumps, remnants of trails or roads, and refuse items such as food and beverage cans or bottles.

Twentieth century topographic maps show groups of structures in the Ernie's Grove area (USGS 1953, 1960) and in the vicinity of the proposed transmission line in the NE¼ of Section 26, T. 24 N., R. 8 E., W.M. (USGS 1921, 1923), as well as unimproved dirt, light-duty, and loose-surface, graded, or narrow hard-surface roads on the right (northwest) bank of the North Fork Snoqualmie River in the area between the proposed intake and the proposed tailrace exit (USGS 1921, 1960). Historic structures or roads associated with logging may be present in the Project. Such sites, if present, are not likely to be distinctive or meet criteria of significance for historic registers.

5.3 Identify Project Site APE

The procedures under Section 106 generally require the federal agency involved in the undertaking to identify the area of potential effects (APE), inventory any historic properties that may be located within the APE, and determine if the identified historic

properties located within the APE are listed or may be eligible to be listed in the National Register of Historic Places (NRHP). An area of potential effects (APE) is defined in 36 CFR 800.16(d), as follows:

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

The Project would be developed on timberlands on the North Fork, north of the town of North Bend. The legal description for the Project Boundary is in the NE¼, SE¼, and SW¼ of Section 24, the NW¼ of Section 25, and the NE¼ of Section 26, T. 24 N, R. 8 E., and the SW¼ of Section 18 and NW¼ of Section 19, T. 24 N., R. 9 E., Willamette Meridian (Figure 1 and Figure 2). The study area for this overview included the King County tax parcels (King County 2013) as listed in Table 1.

The APE for the Project will include in-water and on-shore locations of proposed Project facilities, as well as ancillary locations where construction or other Project activities may cause and change in the character or use of any extant historic properties within the Project Boundary.

5.4 Ethnographic Survey

An ethnographic inventory is being conducted in cooperation with the Snoqualmie Nation and Tulalip Tribes with the goal of identifying any properties of cultural or religious significance within the APE. While efforts are ongoing, at this time it remains incomplete. The following is a log summarizing tribal communications:

5.4.1 Tulalip Tribes

<u>Primary Contact</u>:
Mr. Richard Young
Tribal Cultural Preservation Officer
Hibulb Cultural Center & Natural History Preserve
6410 23rd Avenue, N.E.
Tulalip, WA 98271
(360) 716-2652 - Office
(425) 239-0182 – Cell

ryoung@tulaliptribes.nsn.gov

Summary of Communications:

1. July 31, 2013 - First phone call and left message
2. August 1, 2013 - Second phone call and left message
3. August 2, 2013 - Sent follow-up e-mail
4. August 2, 2013 - Response received from R. Young providing his contact information
5. August 7, 2013 - Meeting with R. Young to discuss Project and provided handout for discussion
6. August 15, 2013 - Follow-up e-mail thanking R. Young for meeting
7. September 9, 2013 – Follow-up e-mail checking on Tribal review of Project
8. October 21, 2013 - Follow-up e-mail checking on Tribal review and re-sent PDF handout from initial meeting
9. October 21, 2013 - Response from R. Young:
   I did discuss the ethnography portion of the project with my supervisor. His impression was pretty much the same as mine, we have both witnessed abuse of traditional knowledge and are approaching this very cautiously. . . My recollection of our last meeting was that you primarily wanted to know if the Tulalip Tribes had concerns and if we were willing to participate in the ethnographic study. The archaeological study and DAHP database search did not have any findings if I remember correctly…
10. October 22, 2013 – E-mail response acknowledging Tribal concerns
11. October 23, 2013 - Called Mr. Young and left messages.
12. October 24, 2013 – E-mail response from R. Young:
    Basically Tulalip will play it by ear for the Black Canyon Project, we will remain an interested party. Once the consultation and interviews start we can determine if we have any Tribal members with knowledge of that area that are willing to participate in the study. We are not however interested in entering into a contract/agreement at this time.
13. October 25, 2013 – E-mail response to R. Young acknowledging Tribal concerns and continued interest in the Project

5.4.2 Snoqualmie Tribe

Primary Contact:
Mr. Steven Mullen-Moses

Director of Archaeology & Historic Preservation
Snoqualmie Nation
8130 Railroad Ave, Ste 103
PO Box 969, Snoqualmie, WA 98065
Desk: 425-888-6551 x1106
Cell: 425 -495–6097
steve@snoqualmietribe.us

Summary of Communications:

1. July 31, 2013 - First phone call and left message
2. August 1, 2013 – Second phone call and left message
3. August 2, 2013 - Sent follow-up email
4. August 12, 2013 - Meeting with S. Mullen and his staff to discuss Project; provided handout for discussion
5. September 9, 2013 - Follow-up email checking on Tribal review of Project
6. September 9, 2013 - Received automated response that he would be out of the office from Sept. 13 to 16
7. October 21, 2013 – Follow-up e-mail checking on Tribal review and re-sent PDF handout
8. October 21, 2013 - Received e-mail from S. Mullen and asked me to call later that day.
9. October 23, 2013 - Made phone call and left message
10. October 24, 2013 - Sent follow-up e-mail to S. Mullen letting him know I made the call
11. October 24, 2013 - Phone conversation with S. Mullen, who said he has discussed the project "with a couple of elders" and is waiting to hear back from them. He indicated this process takes time and he thought they would respond by mid-November (Lahren 2013: email 10/24/13).
12. October 25, 2013 – E-mail response to S. Mullen acknowledging continued Tribal interest in the Project
13. December 16, 2013 - Phone call to follow-up on discussion above
14. December 20, 2013 – Sent e-mail to follow-up on discussion above
15. December 20, 2013 - Received a follow-up e-mail from S. Mullen

Any additional ethnographic information gathered between now and the filing of a Preliminary Licensing Proposal will be filed with the FERC as appropriate.

5.5 Evaluation of National Register Eligibility

Literature review and the initial site visit did not identify any archaeological or historic sites within the Project. In the event that archaeological or historic sites are identified in the course of the field inventory, these will be recorded and evaluated for NRHP eligibility (see section "Field Inventory Prior to Construction" below). Assessment of National Register significance entails evaluating historic structures, sites, buildings, and districts that are more than 50 years old under the criteria listed in 36 CFR 60.34. If historic buildings are identified in the APE, these will be evaluated to determine whether they could contribute to a larger historic district.

5.6 Draft Historic Properties Management Plan

A generic, draft Historic Properties Management Plan has been developed by CRC; however, no Historic Properties have been identified. Because historic properties have not yet been identified in the Project, further development of the generic draft HPMP has not been pursued. Unless Historic Properties are identified, BCH does not intend on filling a Draft HPMP with the Preliminary Licensing Proposal. If Historic Properties are identified that require a Project-specific HPMP, a Draft HPMP will be submitted with the FERC as discussed in the Study Plan.

5.7 Field Inventory Prior to Construction

A field inventory will be completed prior to Project construction, seeking to identify any historic structures or archaeological resources in the APE. As specified in the study plan, the pedestrian survey will consist of traversing linear transects and carefully inspecting areas of soil exposure for artifacts. Parallel linear transects will be spaced 10 meters (33 feet) apart in areas of high probability. Any archaeological materials will be flagged and documented. A subsurface archaeological survey will be completed by excavating shovel test probes (STPs) in areas anticipated to have Project-related ground disturbance created from direct surface impacts during Project construction. This specifically excludes the tailrace tunnel, which will be located hundreds of feet underground with the exception of the tailrace exit location where some surface disturbance will occur during construction. STPs will measure approximately 30 to 40 centimeters (12 to 16 inches) in diameter at the surface and will be excavated to a depth not to exceed 100 centimeters (39 inches). Within the areas with 20 percent or less slope, STPs will be excavated on transects at 15-meter (49-foot) intervals in areas of high probability and at 30-meter (98-foot) intervals in areas of low probability. Areas of high and low probability will be determined in the field by qualified consultants conducting the field survey. All excavated sediments will be screened through 1/4-inch mesh and documented on shovel testing forms. Any finds

will be recorded by depth and stratigraphic context. If archaeological materials are found in a STP, additional test units will be placed around the initial find to determine the extent of the resource and to delineate site boundaries. All STPs will be backfilled upon completion.

Any archaeological site or isolate discovered during the Project will be documented on DAHP Archaeological Site/Isolated Find record forms. Any archaeological materials found during pedestrian survey and/or STP excavation will be documented by depth, photographed, described, and left on site. Any temporally or functionally diagnostic artifacts found will be mapped using global positing system (GPS), photographed, illustrated, and left on site. There will be no collection of artifacts during the fieldwork portion of this Project, unless circumstances of the find require collection and further analysis. This will be decided at the discretion of the archaeologist in coordination with the BCH Manager and Tribal representatives.

Historic structures in and adjacent to the APE will also be inventoried. Review of local property records identified one parcel in the vicinity of the proposed transmission line that contains a residence that was built over 50 years ago (Parcel No. 2624089126; see Table 1). If this parcel or others containing buildings older than 50 years are in or directly adjacent to the APE, the buildings should be recorded for DAHP's Historic Property Inventory and evaluated for historic register eligibility. Additionally, since the Project is within King County, consideration will also been given to cultural resources with an age of at least 40 years (King County Historic Preservation Program [KCHPP] 1999) for their potential eligibility for nomination as King County Landmarks (KCL). Criteria for eligibility as a King County Landmark are essentially the same as those established for the NRHP (KCHPP 1999).

6 EVALUATE POTENTIAL EFFECTS ON CULTURAL RESOURCES

Based upon the results of the literature review, Project area analysis, and site visit, neither paleontological resources nor historic properties have been identified in the Project area. As a result, effects to paleontological resources and historic properties are not anticipated. Local topography, geomorphology, and regional settlement and subsistence patterns cause the overall Project to have a low potential to contain precontact archaeological sites. Slopes range from nearly level to very steep, and sediments are largely composed of late Pleistocene glacial outwash. While the area could have potentially been the location of repeated or regular precontact activities, the extent of historic-period disturbance by logging could have destroyed the integrity of any such sites within the

vicinity. Similarly, construction is not expected to generate effects to historic properties unless historic properties are found in or adjacent to the Project area or construction zones. However, the field inventory has not been completed and as-yet unknown archaeological or historic sites may be identified prior to construction.

7 RECOMMENDATIONS

- Field Inventory Prior to Construction: subsurface testing is recommended in undisturbed portions of the proposed intake where alluvial sediments are present and slopes are less than 20 percent.

- Ultimately, any final Project-specific HPMP should be submitted to appropriate personnel at the Snoqualmie and Tulalip Tribes, King County, DAHP, and FERC, or other interested parties, for review prior to the initiation of any land-altering activities.

- In the unlikely event that ground disturbing or other activities do result in the inadvertent discovery of archaeological deposits, work should be halted in the immediate area and contact made with the State Department of Archaeology and Historic Preservation (DAHP) in Olympia. Work should be halted until such time as further investigation and appropriate consultation is concluded.

- In the unlikely event of the inadvertent discovery of human remains, work should be immediately halted in the area, the discovery covered and secured against further disturbance, and contact effected with law enforcement personnel, consistent with the provisions set forth in RCW 27.44.055 and RCW 68.60.055.

8 REFERENCES

Alt, D., and D. W. Hyndman

1998 Roadside Geology of Washington. Twelfth Printing. Mountain Press Publishing Company, Missoula.

Anderson Map Company.

1907 King County Atlas. Willamette Meridian. Anderson Map Company, Seattle.

Baenen, J.

1981 "Stillaguamish, Snohomish, Snoqualmie, and Duwamish." In Inventory of American Indian Religious Use, Practices, Localities, and Resources. Institute of Cooperative Research, Inc., Seattle.

Ballard, A.

1999 Mythology of Southern Puget Sound: Legends Shared by Tribal Elders. Reprint of the 1929 publication recorded, translated, and edited by Arthur Ballard, with additional material by Kenneth G. (Greg) Watson. Snoqualmie Valley Historical Museum, North Bend, Washington.

Bethel, J.

2004 An Overview of the Geology and Geomorphology of the Snoqualmie River Watershed. King County Department of Natural Resources and Parks, Water and Land Resources Division, Seattle.

Black Canyon Hydro, LLC (BCH)

2012a Pre-Application Document, Black Canyon Hydroelectric Project, FERC Project No. P-14110. Submitted to FERC, March 2012.

2012b Pre-Application Document Supplement, Black Canyon Hydroelectric Project, FERC Project No. P-14110. Submitted to FERC, November 2012.

2012c Hydrology Summary for the Black Canyon Hydroelectric Project, FERC Project No. P-14110. Submitted to FERC, August 2012.

Blukis Onat, A.

1987 Resource Protection Planning Process Identification of Prehistoric Archaeological Resources in the Northern Puget Sound Study Unit. An RP3 document prepared for the Washington State Office of Archaeology and Historic Preservation. BOAS, Inc., Seattle.

Blukis Onat, A. and L. Bennett
1968 Tokul Creek: A Report on Excavations on the Snoqualmie River by Seattle Community College. Occasional Paper No. 1. Washington Archaeological Society, Seattle.

Blukis Onat, A., M. E. Morgenstein, P. D. LeTourneau, R. P. Stone, J. Kosta, and P. Johnson
2001 Archaeological Investigations at stuwe'yuqw – Site 45KI464, Tolt River, King County, Washington. Submitted to Seattle Public Utilities, Contract No. DC 98097. BOAS, Inc., Seattle.

Booth, D. B.
1990 Surficial Geologic Map of the Skykomish and Snoqualmie Rivers Area, Snohomish and King Counties, Washington. USGS Map I-1745. USGS, Department of the Interior, Washington, D.C.

Booth, D. B., R. A. Haugerud, and K. Goetz Troost
2003 The Geology of Puget Lowland Rivers. In Restoration of Puget Sound Rivers, Chapter 2, edited by David R. Montgomery, Susan Bolton, Derek B. Booth, and Leslie Wall, pp. 14-45. University of Washington Press, Seattle.

Boswell, S. A., S. K. Campbell, L. C. McConaghy, and C. J. Miss
1990 Pratt River Logging Camp Evaluation. Prepared for Mount Baker-Snoqualmie National Forest. Northwest Archaeological Associates, Inc., Seattle.

Bureau of Land Management (BLM)
2013 Bureau of Land Management General Land Office Records – Search Documents. Electronic resource, http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0, accessed June 6, 2013.

Carlson, R. L.
1990 Cultural Antecedents. In Handbook of North American Indians, Volume 7: Northwest Coast, pp. 60-69. Smithsonian Institution Press, Washington, D.C.

CH2M HILL
1982 An Archaeological and Historical Assessment of the North Fork Snoqualmie River for the Black Canyon Hydroelectric Project. Prepared for the Weyerhaeuser Timber Company.

Dragovich, J. D., H. A. Littke, M. L. Anderson, R. Hartog, G. R. Wessel, S. A. DuFrane, T. J. Walsh, J. H. MacDonald, Jr., J. F. Mangano, and R. Cakir
2009 Geologic map of the Snoqualmie 7.5-minute quadrangle, King County, Washington. Geologic Map GM-75, 2 sheets, scale 1:24,000. Division of Geology and Earth Resources, WA DNR, Olympia.

Evans, Jack R.
1990 Little History of North Bend - Snoqualmie Washington. SCW Publications, Seattle.

Franklin, J. F., and C. T. Dyrness
1973 Natural Vegetation of Oregon and Washington. USDA Forest Service, Pacific Northwest Forest and Range Experiment Station, General Technical Report PNW-8.

Gerrish, , T., and J. Greene
2012 Cultural Resources Assessment of the Hancock Creek and Calligan Creek Hydroelectric Projects FERC Nos. P-13994 and P-13948, King County, Washington. Prepared for Snohomish County Public Utility District, Snohomish, Washington. AMEC Earth & Environmental, Inc., Bothell, Washington.

Goldin, A.
1992 Soil Survey of Snoqualmie Pass Area, Parts of King and Pierce Counties, Washington. United States Department of Agriculture, Soil Conservation Service, in cooperation with Washington State Department of Natural Resources; United States Department of Agriculture, Forest Service; and Washington State University Agricultural Research Center.

Gustafson, C. E., R. Daugherty, and D. Gilbow
1979 The Manis Mastodon Site: Early Man on the Olympic Peninsula. Canadian Journal of Archaeology 3:157-164.

Heintz, K.
2008 Little Si Trail Cultural Resource Survey IAC #07-1412D. Washington Department of Natural Resources, South Puget Sound Region.

Hill, Ada Snyder
1994 A History of the Snoqualmie Valley. Snoqualmie Valley Historical Museum, North Bend, Washington.

Kauhi, T. C., and J. Markert
2009 Washington Statewide Archaeology Predictive Model Report. GeoEngineers, Seattle.

Kelly, K., C. Carrig, A. Dailide, and A. Naumann
2009 Historic Properties Inventory of Three Forks Mitigation Site, King County, Washington. U.S. Army Corps of Engineers, Seattle District.

Kenady, S. M., M. C. Wilson, R. F. Schalk, and R. R. Mierendorf
2011 Late Pleistocene butchered Bison antiquus from Ayer Pond, Orcas Island, Pacific Northwest: Age Confirmation and Taphonomy. Quaternary International 233(2):130–141.

Kent, R. J., and K. M. Kelly
2008 Cultural Resource Surveys for Eight Snoqualmie River PL-84-99 Levee Rehabilitation Projects, King County, Washington. Environmental Resources Section, Cultural Resources Report. U.S. Army Corps of Engineers, Seattle District, Washington.

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

King County Historic Preservation Program (KCHPP)
2013 King County and City Landmarks List. Technical Paper No. 6. Electronic document, http://www.kingcounty.gov/property/historic-preservation/~/media/property/historic_preservation/documents/resources/T06_KCLandmarkList.ashx, accessed June 12, 2013. King County Historic Preservation Program, Department of Natural Resources and Parks, Seattle.

Kopperl, R.
2004 Cultural Resources Assessment for the Middle Fork Snoqualmie River Road, WA PFH 29-1(1) King County, Washington. Prepared for DJ&A, P.C., Missoula, Montana, and U.S. Department of Transportation, Western Federal Lands Highway Division, Vancouver, Washington. Northwest Archaeological Associates, Inc., Seattle.

Kopperl, R., C. J. Miss, and C. M. Hodges
2010 Results of Testing at the Bear Creek Site 45KI839, Redmond, King County, Washington. Prepared for City of Redmond and David Evans and Associates, Inc. Northwest Archaeological Associates, Inc., Seattle.

Kroll Map Company
1912 Kroll's Atlas of King County, Washington. Kroll Map Company, Seattle.
1926 Kroll's Atlas of King County, Washington. Kroll Map Company, Seattle.
1930 Kroll's Atlas of King County, Washington. Kroll Map Company, Seattle.
1946 Kroll's Atlas of King County, Washington. Kroll Map Company, Seattle.
1958 Kroll's Atlas of King County, Washington. Kroll Map Company, Seattle.
1971 Kroll's Atlas of King County, Washington. Kroll Map Company, Seattle.

Kruckeberg, A. R.
1991 The Natural History of Puget Sound County. University of Washington Press. Seattle.

Lane, B.
1975 Anthropological Report on the Identity, Treaty Status and Fisheries of the Snoqualmie Tribe of Indians. In Political and Economic Aspects of Indian-White Culture Contact in Western Washington in the Mid-19th Century, by Barbara Lane. Ms. on file, Suzzallo Library, University of Washington, Seattle.

Lange, G.
1998a Road is completed over Snoqualmie Pass by October 7, 1867. HistoryLink.org Essay 174. Electronic document, http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file_id=174, accessed June 5, 2013.
1998b Carnation beginnings: Tolt Post Office opens on December 4, 1883. HistoryLink.org Essay 454. Electronic document, http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file_id=454, accessed June 5, 2013.

LeTourneau, P. D., and R. P. Stone
2001 "Archaeological Analysis of Lithic Artifacts." In Archaeological Investigations at stuwe'yuqw – Site 45KI464, Tolt River, King County, Washington, pp. 7-1 – 7-204. Submitted to Seattle Public Utilities, Contract No. DC 98097. BOAS, Inc., Seattle.

Lewarch, Dennis E., Lynn L. Larson, Leonard A. Forsman, Laura R. Murphy, David R. Iversen, Jeffrey Robbins, and Amy E. Dugas
2002 Archaeological Evaluation and Construction Excavation Monitoring at the World Trade Center, Baba'kwob Site (45KI456), Seattle, King County, Washington. Prepared for Port of Seattle. Larson Anthropological Archaeological Services Limited, Gig Harbor, Washington.

Lewis, H. T., and T. A. Ferguson
1999 Yards, Corridors, and Mosaics: How to Burn a Boreal Forest. In Indians, Fire, and the land in the Pacific Northwest, pp. 164-184, edited by Robert Boyd. Oregon State University Press, Corvallis.

Lockwood, C., and B. Hoyt
2013 Tollgate Farm Park Project, City of North Bend, King County, Washington, Archaeological Survey and Testing at 45KI455. Archaeological Permit No. 2012-23. Prepared for Si View Metropolitan Parks District and City of North Bend. ESA Paragon, Seattle.

McDaniel, S.
2006 Cultural Resources Survey Report for the City of North Bend Mount Si Springs Piping Project, King County, Washington. Prepared for City of North Bend, Washington. URS Corporation, Portland, Oregon.

Metsker, C. F.
1912 Metsker's Atlas of King County, Washington. Metsker Maps, Tacoma Washington, and Portland, Oregon.

Morgan, R.
1979 Seattle Then & Now. Bodima Press, Orinda, California.

National Register of Historic Places (NRHP)
2002 How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15. U.S. Department of the Interior, National Park Service, Washington, D.C. Electronic resource, http://www.nps.gov/history/nr/publications/ bulletins/nrb15/, accessed June 5, 2013.

Nelson, C. M.
1990 Prehistory of the Puget Sound Region. In Handbook of North American Indians, Volume 7: Northwest Coast, pp. 481-484. Smithsonian Institution Press, Washington, D.C.

Nelson, M. A.
1998 Cultural Resources Investigations at the Fall City Riverfront Park, King County, Washington. Prepared for Snoqualmie Valley Youth Soccer Association and King County Department of Planning and Community Development. Northwest Archaeological Associates, Inc., Seattle.

Northwest Underground Explorations
1997 Discovering Washington's Historic Mines Volume I: The West Central Cascade Mountains. Oso Publishing Company, Arlington, Washington.

Norton, Helen H.
1979 The Association Between Anthropogenic Prairies and Important Food Plants in Western Washington. Northwest Anthropological Research Notes 13(2):175-200.

Office of Archaeology and Historic Preservation (OAHP)
n.d. Washington Heritage Register. Publication on file at Washington Department of Archaeology and Historic Preservation, Olympia.

Parker, P. L. and T. F. King
1999 Guidelines for Evaluating and Documenting Traditional Cultural Properties. National Register Bulletin 38, National Register of Historic Places, National Park Service, Washington, D.C.

Polley, E. A. Bush
1980 Forts of the Snoqualmie Valley. Snoqualmie Valley Historical Society, Fall City, Washington.

Prater, Y.
1981 Snoqualmie Pass: From Indian Trail to Interstate. The Mountaineers, Seattle.

Quackenbush, T.
2003 Survey & Inventory of Historic Resources in the Cities of North Bend and Snoqualmie. Prepared for the City of North Bend and the City of Snoqualmie.

Rinck, B. A.
2009 Cultural Resources Assessment for the City of Snoqualmie Wastewater Pump Stations Numbers 3 & 4 Project, King County, Washington. Prepared for Gray & Osborne, Inc., Seattle. Northwest Archaeological Associates, Inc., Seattle.

Roedel, K. and L. Larson
2002 Letter to Fennelle Miller RE: Final Mill Road Culvert Replacement Project (#M46230) Archaeological Resources Monitoring. Submitted to King County Road Services Division, Seattle. Larson Anthropological Archaeological Services Limited, Gig Harbor, Washington.

Rooke, L.
2002 Letter to Kelly Donahue RE: Cultural Resources Inventory for the Three Forks Natural Area and Vista Point Park, (T24N, R8E, Sections 33 and 34), King County, Washington. Submitted to King County Division of Capital Planning & Development, Seattle. Western Shore Heritage Services, Bainbridge Island.

Rooke, L., and J. C. Chatters
2010 Data Recovery at 45KI757, an Olcott Isolate, King County, Washington. AMEC Earth & Environmental, Inc. Project No. 9-915-16849-0, Bothell, Washington.

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

Schumacher, J., and J. L. Burns
2005 YUETSWABIC (45KI263): Preliminary Analysis of the Archaeological Collection. Prepared for King County Department of Construction and Facilities Management, Seattle. Washington. Western Shore Heritage Services, Bainbridge Island, Washington.

Spier, L.
1936 Tribal Distribution in Washington. General Series in Anthropology, Number 3. George Banta Publishing Company, Menasha, Wisconsin.

Stilson, M. L.
2004 Mount Si Trail Renovation – Phase II Cultural Resources Survey. Washington Department of Natural Resources, Land and Resources Division, Olympia.

Suttles, W., and B. Lane
1990 Southern Coast Salish. In Handbook of North American Indians, Volume 7: Northwest Coast, pp. 485-502. Smithsonian Institution Press, Washington, D.C.

Swain, S. L.
2010 MF Snoqualmie ATM – Bessemer Mtn Road Decommissioning Heritage Resources Report. Mt. Baker-Snoqualmie National Forest, Snoqualmie Ranger District, North Bend, Washington.

Teit, James A.
1928 The Middle Columbia Salish. University of Washington Publications in Anthropology, Vol. 2, No. 4:83-128. University of Washington Press, Seattle.

Thompson, G.
2000 Letter to Gene Lynard RE: Cultural Resources Assessment of Bonneville Power Administration Tanner Tap Transmission Line Project at North Bend, King County, Washington. Submitted to Bonneville Power Administration, Portland. Historical Research Associates, Inc., Seattle.

Thorson, R. M.
1989 Glacio-isostatic response of the Puget Sound area, Washington. Geological Society of America Bulletin 101(9):1163-1174.

Tollefson, K.
1987 The Snoqualmie: A Puget Sound Chiefdom. Ethnology 26(2):121-136.

United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS)
2013 Web Soil Survey, Snoqualmie Pass Area, Washington (Parts of King and Pierce Counties). Electronic resource, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, accessed June 3, 2013.

United States Geological Survey (USGS)
1921 Sultan Quadrangle, Washington. 1:125,000. Government Printing Office, Washington, D.C.
1923 Sultan Quadrangle, Washington. 1:125,000. Government Printing Office, Washington, D.C.
1953 Snoqualmie Quadrangle, Washington. 1:24,000. Government Printing Office, Washington, D.C.
1960 Mount Si Quadrangle, Washington. 1:62,500. Government Printing Office, Washington, D.C.
1989 Mount Si Quadrangle, Washington. 1:24,000. Government Printing Office, Washington, D.C.
1993 Snoqualmie Quadrangle, Washington. 1:24,000. Government Printing Office, Washington, D.C.

United States Surveyor General (USSG)

1897 General Land Office Field Notes, Township 24 North, Range 8 East, Willamette Meridian, surveyors I. M. Galbraith and R. H. Ober. Volume WA-R0124. Land Status and Cadastral Survey Records on file at Bureau of Land Management—Oregon State Office, Portland.

1899 General Land Office Cadastral Survey Plat, Township 24 North, Range 8 East, Willamette Meridian. Land Status and Cadastral Survey Records on file at Bureau of Land Management—Oregon State Office, Portland.

1903 General Land Office Cadastral Survey Plat, Township 24 North, Range 9 East, Willamette Meridian. Land Status and Cadastral Survey Records on file at Bureau of Land Management—Oregon State Office, Portland.

Washington Governor's Office of Indian Affairs (WA GOIA)

2013 Snoqualmie Tribe. Electronic document, http://www.goia.wa.gov/tribal-information/Tribes/snoqualmie.htm, accessed June 10, 2013.

Washington State Department of Archaeology and Historic Preservation (DAHP)

2013a Survey and Inventory Standards: Washington State Standards for Cultural Resource Reporting. Electronic document, http://www.dahp.wa.gov/sites/default/files/External%20FINAL_0.pdf, accessed June 10, 2013.

2013b The Washington Information System for Architectural and Archaeological Records Data. Electronic resource, https://secureaccess.wa.gov/dahp/wisaard/, accessed June 3, 2013.

Washington State Department of Natural Resources (WA DNR)

2013 Washington Interactive Geologic Map. Division of Geology and Earth Resources – Washington's Geologic Survey. WA DNR, Olympia. Electronic resource, https://fortress.wa.gov/dnr/geology/, accessed June 3, 2013.

Waterman, T. T.

ca.1920 Puget Sound Geography. Unpublished manuscript, Allen Library, University of Washington, Seattle.

2001 sdaʔdaʔ gweł dibeł lešucid ʔacaciłtalbixw Puget Sound Geography. Vi Hilbert, Jay Miller, and Zalmai Zahir, contributing editors. Lushootseed Press, Federal Way, Washington.

Waters, M. R.
1992 Principles of Geoarchaeology: A North American Perspective. The University of Arizona Press, Arizona.

Watson, K. G.
1992 28 Historic Places in the Upper Snoqualmie Valley. Snoqualmie Valley Historical Society, North Bend, Washington.

Wessen, G., and M. L. Stilson
1987 Resource Protection Planning Process: Southern Puget Sound Study Unit. An RP3 document prepared for the Washington State Department of Community Development, Office of Archaeology and Historic Preservation. Olympia.

Wickwire, C.
2000 Meadowbrook Corner Supplemental Survey Report and Inventory Update for the City of Snoqualmie. Prepared for City of Snoqualmie and King County Historic Preservation Program, Seattle.

Wydoski, R. S., and R. R. Whitney
1979 Inland Fishes of Washington. University of Washington Press, Seattle and London.

Table 1. Land ownership in and adjacent to the Project. According to county assessor records viewed online, very few standing structures are present (King County 2013).

Parcel No.	Location	Ownership	Zoning	Buildings (Construction Date)
2424089005	NE¼ of NE¼, S. 24, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2424089009	SE¼ of NE ¼ , S. 24, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2424089009	SW¼ of NE¼, S. 24, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2424089004	NW¼ of NE¼, S. 24, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2424089012	NW¼ of SE¼ & N½ of SW¼ of SE¼, S. 24, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2424089011	NE¼ of SW¼ of SE¼, S. 24, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2424089015	SE¼ of SW¼ of SE¼, S. 24, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2424089014	SW¼ of SW¼ of SE¼, S. 24, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2524089003	NE¼ of NW¼ & S to river, S. 25, T. 24 N., R. 8 E.	THR LLC	Forest	N/A
2524089002	NW¼ of NW¼ & S to river, S. 25, T. 24N., R. 8 E.	THR LLC	Forest	N/A
2624089001	NE¼ of NE¼ and W to road, S. 26, T. 24 N., R. 8 E.	Eric P. Traut	Rural Area, one DU per 10 acres	Two outbuildings (2009)
2624089201	S1/3 of N½ of NW¼ and of NW¼ of NE¼, S. 26, T. 24 N., R. 8 E.	DIC LLC	Forest	N/A
2624089081	NW¼ of SW¼ of NE¼, S. 26, T. 24 N., R. 8 E.	Marek P. & Elzbieta Adamski	Rural Area, one DU per 5 acres	Single family residence (2000)
2624089126	Part of NE ¼ of NE ¼ of NW ¼, S. 26, T. 24 N., R. 8 E.	Treva Rainey	Rural Area, one DU per 5 acres	Single family residence (1920; renovated 1969)
1824099001	S. 18, T. 24 N., R. 9 E.	Hancock Forest Management	Forest	N/A
1924099014	Part of NW¼ on E of river, S. 19, T 24 N., R. 9 E.	THR LLC	Forest	N/A

Table 2. Land patents recorded in or adjacent to the Project (BLM 2013).

Name	Date	BLM Serial No.	Authority	T. R. S.	Total Acres
Donald McLeod	5/8/1901	WASAA 061620	Homestead Entry	24N, 8E, NW¼ 24	160
Herm Wieting	5/8/1901	WASAA 061618	Homestead Entry	24N, 8E, NE¼ 24	160
James W. Upper	9/27/1904	WASAA 061629	Sale-Cash Entry	24N, 8E, SE¼ 24	160

Name	Date	BLM Serial No.	Authority	T. R. S.	Total Acres
Howard Johnson	3/8/1905	WASAA 061630	Homestead Entry	24N, 8E, SW¼ 24	160
Northern Pacific Railway Co.	6/30/1902	WAORAA 049121	Grant-RR Northern Pacific	24N, 8E, 13 and N½ 25	14810.45
William McLeod	5/8/1901	WASAA 061619	Homestead Entry	24N, R8, NE¼ 26	160
Philip McLeod	5/8/1901	WASAA 061615	Homestead Entry	24N, R8, NW¼ 26	171.39
David Renton	5/1/1902	WASAA 061624	Homestead Entry	24N, R8, SW¼ 26	171.29
Edward Laylor	4/22/1901	WASAA 061608	Homestead Entry	24N, R8, SE¼ 26	160
George W. Gove	9/26/1905	WASAA 060140	Sale-Cash Entry	24N, 9E, NE¼ 18	156.64
Alonzo Adair	3/29/1907	WASAA 060159	Sale-Cash Entry	24N, 9E, SE¼ 18	156.88
Northern Pacific Railway Co.	11/11/1904	WAORAA 005780	Grant-RR Northern Pacific	24N, 9E, 19	19018.72

Table 3. Cultural resource investigations at DAHP within approximately three miles of the Project.

Author	Date	Title	Distance from Project	Results
CH2M Hill	1982	An Archaeological and Historical Assessment of the North Fork Snoqualmie River for the Black Canyon Hydroelectric Project	Within Project Boundary	Springboard-notched stumps were observed by surface survey and trowel scrapes did not locate any potential historic properties. No further work recommended.
Gerrish and Greene	2011	Cultural Resources Assessment of the Hancock and Calligan Creek Hydroelectric Project, FERC Nos. P-13994 and P-13948	1 mile N	Surface survey and excavation of 111 shovel probes did not identify any potential historic properties. No further work recommended.
Heintz	2008	Little Si Trail Cultural Resource Survey IAC #07-1412D	2 miles S	Stumps and roads from past logging activity were observed in surface survey, but no potential historic properties were found. No further work recommended.
Kelly et al.	2009	Historic Properties Inventory of Three Forks Mitigation Site, King County, Washington	2 miles SW	Surface survey and excavation of three shovel probes identified precontact and historic-period archaeological materials, which were recorded as site 45KI934. Site deposits appeared disturbed, and the project was considered to have a low potential to affect historic properties. Archaeological monitoring was recommended.
Kent and Kelly	2008	Cultural Resource Surveys for Eight Snoqualmie River PL-84-99 Levee Rehabilitation Projects, King County, Washington	2.5 miles SSW	Surface survey did not locate any potential historic properties. The project was considered to have a very low potential to affect historic properties. No further work recommended.

Author	Date	Title	Distance from Project	Results
Lockwood and Hoyt	2013	Tollgate Farm Park Project, City of North Bend, King County, Washington, Archaeological Survey and Testing at 45KI455	2.5 miles SW	Surface survey, excavation of 195 shovel and auger probes and five test units, and archaeological monitoring of geotechnical pit and well excavations identified historic-period and precontact archaeological materials in previously recorded site 45KI455. It was recommended that the site boundary be revised to exclude areas where no cultural material was found in testing. It was recommended that a proposed trail and fence line be adjusted to avoid archaeological deposits, and that construction be monitored by an archaeologist.
McDaniel	2006	Cultural Resources Survey Report for the City of North Bend Mount Si Springs Piping Project, King County, Washington	1.5 miles SW	Surface survey and excavation of four shovel probes did not locate any potential historic properties. No further work recommended.
Podzorski and Blukis Onat	1998	An Archaeological and Historic Resource Assessment of the Proposed Tollgate Farm Development, King County, Washington	2.5 miles SW	Pedestrian survey and excavation of shovel and auger probes identified two historic properties: an precontact archaeological site (45KI454) and a historic-period site with standing structures (45KI455). Both sites were considered potential historic properties. Recommendations for further work were not included in this report.
Quackenbush	2003	Survey & Inventory of Historic Resources in the Cities of North Bend and Snoqualmie	2.5 miles SW	Survey resulted in the inventory of 78 historic buildings. These resources were not evaluated for significance. It was recommended that the two cities develop comprehensive preservation plans.
Rinck	2009	Cultural Resources Assessment for the City of Snoqualmie Wastewater Pump Stations Numbers 3 & 4 Project, King County, Washington	3 miles WSW	Surface survey, excavation of five shovel probes, and archaeological monitoring of two geotechnical cores did not identify any potential historic properties. No further work recommended.
Roedel and Larson	2002	Letter to Fennelle Miller RE: Final Mill Road Culvert Replacement Project (#M46230) Archaeological Resources Monitoring	3 miles W	Archaeological monitoring of excavation for replacement of a culvert identified native alluvial deposits but no historic properties were found. No further work recommended.
Rooke	2002	Letter to Kelly Donahue RE: Cultural Resources Inventory for the Three Forks Natural Area and Vista Point Park, (T24N, R8E, Sections 33 and 34), King County, Washington	1.1 miles SW	Surface survey and excavation of 39 shovel probes did not identify any historic properties. No further work recommended.

Author	Date	Title	Distance from Project	Results
Stilson	2004	Mount Si Trail Renovation – Phase II Cultural Resources Survey	1.5 miles S	Surface survey resulted in the identification of one archaeological site (45KI705) outside the trail renovation footprint. The project was not anticipated to affect cultural resources. No further work recommended.
Swain	2010	MF Snoqualmie ATM – Bessemer Mtn Road Decommissioning Heritage Resources Report	3 miles SE	Surface survey resulted in the identification of one historic-period archaeological site (45KI999). No potential historic properties were found. No further work recommended.
Thompson	2000	Letter to Gene Lynard RE: Cultural Resources Assessment of Bonneville Power Administration Tanner Tap Transmission Line Project at North Bend, King County, Washington	3 miles SW	Surface survey identified springboard-notched stumps, a metal logging cable, bridges and culverts associated with the Sunset Highway, and a segment of the Seattle Lake Shore and Eastern Railway. The proposed project was considered not to have any adverse effects to historic properties. No further work recommended.
Wickwire	2000	Meadowbrook Corner Supplement to Historic Resources Survey and Inventory Update for the City of Snoqualmie	3 miles WSW	Survey resulted in the inventory of 13 historic buildings or sites. One was considered to be a potential historic property. Future preservation planning was recommended, including integration of inventory results with local land use planning and design review.

Table 4. Archaeological sites recorded at DAHP within approximately three miles of the Project. DAHP records do not include any archaeological sites in or adjacent to the Project.

Site Number (Name)	Site Type	NRHP/WHR/KCL Status	Distance from Project	Potential Project Impacts
45KI454	Precontact Camp	Recommended eligible for NRHP, WHR, and KCL	2.5 miles SW	None
45KI455 (Fort Smalley, Fares' Homestead, Tollgate Farm, Fisk House)	Historic and precontact components (historic residential, historic agriculture, historic trails, precontact camp)	Recommended eligible for NRHP, WHR, and KCL	2.5 miles SW	None
45KI458 (Meadowbrook Farm Site)	Precontact camp, precontact lithic material	Unevaluated	2.7 miles SW	None
45KI548 (Meadowbrook Historic Ruins)	Historic agriculture	Unevaluated	2.7 miles SW	None
45KI705 (Mt. Si Manuports)	Precontact cairn	Unevaluated	1.5 miles S	None
45KI934 (Snoqualmie Three Forks Site)	Historic and precontact components (historic debris scatter, precontact lithic material)	Unevaluated	1.5 miles SW	None

Site Number (Name)	Site Type	NRHP/WHR/KCL Status	Distance from Project	Potential Project Impacts
45KI999	Historic depression-era properties	Determined not eligible for NRHP	3 miles ESE	None

Table 5. Historic sites recorded at DAHP within approximately three miles of the Project. Historic registers and DAHP records do not include any historic sites in or adjacent to the Project.

Site Number (Name)	Site Type	NRHP/WHR/KCL Status	Distance from Project	Potential Project Impacts
9530 428th Ave SE, North Bend, WA	Historic residential structure	Determined not eligible for NRHP	1.5 miles SW	None
9540 428th Ave SE, North Bend, WA	Historic residential structure	Determined not eligible for NRHP	1.5 miles SW	None
Norman Bridge	Historic bridge	Listed on NRHP	1.5 miles SW	None
Covered Railroad Bridge	Historic bridge	Listed on NRHP	2.5 miles SW	None
Tollgate Farm House	Historic residential structure	Determined eligible for NRHP, listed on KCL	2.5 miles SW	None