Appendix M

Historic Properties Information and DAHP Concurrence

HISTORIC PROPERTIES INFORMATION AND DAHP CONCURRENCE
for the Admiralty Inlet Pilot Tidal Project

On August 3, 2011, Public Utility District No. 1 Snohomish County (the District) requested concurrence from the Washington State Department of Archaeology and Historic Preservation (DAHP) that the identified Area of Potential Effects (APE) was appropriate for the proposed Project. The District received the DAHP's concurrence on August 8, 2011.

Following a Cultural Resources Assessment of the proposed Project by the District's consultant AMEC Environment & Infrastructure Inc. (AMEC), on February 21, 2012, the District requested DAHP's concurrence with AMEC's determination of "No Adverse Effects to Historic Properties" for the proposed Project. DAHP responded on February 28, 2012, stating agreement with the APE as mapped in AMEC's report. The DAHP also concurred with AMEC that the current Project as proposed will have "NO ADVERSE EFFECT" on National Register eligible or listed historic and cultural resources.

The District's correspondence with DAHP, as well as AMEC's report, are attached to this appendix.

The District has made similar requests to the cultural resources offices at Ebey's Landing Historical Reserve, Island County, Sauk-Suiattle Tribe, Suquamish Tribe, Swinomish Indian Tribal Community, and Tulalip Tribes. Each of these letters are also attached to this appendix.

An index of the various materials attached to this appendix follows:

Attachment 1.....Feb. 28, 2012, No Adverse Effect concurrence from DAHP
Attachment 2.....Feb. 21, 2012, request for concurrence sent to DAHP
Attachment 3.....Cultural Resources Assessment prepared by AMEC
Attachment 4.....Aug. 3, 2011, request for APE concurrence sent to DAHP
Attachment 5.....Aug. 8, 2011, APE concurrence from DAHP
Attachment 6.....Feb. 27, 2012, request for concurrence sent to Ebey's Landing Historical Reserve
Attachment 7.....Aug. 3, 2011, request for APE concurrence sent to Island County
Attachment 8.....Feb. 27, 2012, request for concurrence sent to Island County
Attachment 9.....Aug. 3, 2011, request for APE concurrence sent to Sauk-Suiattle Tribe
Attachment 10.....Feb. 27, 2012, request for concurrence sent to Sauk-Suiattle Tribe
Attachment 11.....Aug. 3, 2011, request for APE concurrence sent to Suquamish Tribe
Attachment 12.....Feb. 27, 2012, request for concurrence sent to Suquamish Tribe
Attachment 13.....Aug. 3, 2011, request for APE concurrence sent to Swinomish Indian Tribal Community
Attachment 14.....Feb. 27, 2012, request for concurrence sent to Swinomish Indian Tribal Community
Attachment 15.....Aug. 3, 2011, request for APE concurrence sent to Tulalip Tribes
Attachment 16.....Feb. 27, 2012, request for concurrence sent to Tulalip Tribes

STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 • Fax Number (360) 586-3067 • Website: www.dahp.wa.gov

February 28, 2012

Mr. Craig Collar
Snohomish PUD
2320 California Street
Everett, WA 98201

In future correspondence please refer to:
Log: 030311-05-FERC
Property: Admiralty Inlet Pilot Tidal Project 12690
Re: NO Adverse Effect

Dear Mr. Collar:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP). The above referenced project has been reviewed on behalf of the State Historic Preservation Officer under provisions of Section 106 of the National Historic Preservation Act of 1966 (as amended) and 36 CFR Part 800. My review is based upon documentation contained in your communication.

First, I agree with the Area of Potential Effects (APE) as mapped in the consultant's report. I also concur with your consultant that the current project as proposed will have "NO ADVERSE EFFECT" on National Register eligible or listed historic and cultural resources. If additional information on the project becomes available, please contact DAHP for further consultation.

Thank you for the opportunity to review and comment. If you have any questions, please contact me.

Sincerely,

Russell Holter
Project Compliance Reviewer
(360) 586-3533
russell.holter@dahp.wa.gov

Cc: Craig Holmquist (NPS)

February 21, 2012

Dr. Allyson Brooks
State Historic Preservation Officer
Dept. of Archaeology and Historic Preservation
1063 South Capitol Way, Suite 106
Olympia, WA 98501

RE: Finding of No Adverse Effects to Historic Properties for Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Dr. Brooks:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District submitted a request for concurrence with our proposed Area of Potential Effects (APE) in August, 2011 and concurrence was granted by your department.

The District retained AMEC Environment and Infrastructure, Inc. (AMEC) to conduct a cultural resources assessment of the Project site on January 5, 2012. During the course of the investigation two archaeological sites were documented; one pre-contact site (45IS304) and one historic period archaeological site (45IS303). Two historic buildings were also inventoried; one within the direct APE and one located in the indirect APE. No Traditional Cultural Properties were identified within the APE. AMEC concluded that the District's proposed work will not adversely affect these sites or properties.

Enclosed you will find the following materials in support of our present consultation effort:

(1) Cultural Resources Assessment, AMEC Environment and Infrastructure, Inc., February 17, 2012
(2) FERC's Section 106 Consultation Authorization, dated November 7, 2008, designating the District to act on the FERC's behalf

The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (control building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted an easement. The control building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

With a capacity of 300 kilowatts (kW), the Project would provide approximately 209 megawatt-hours (MWh) annually with an average energy output of approximately 30 kW. While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

The APE for the project includes the following:
Submerged areas – Admiralty Inlet

- Turbine deployment site – bed of Puget Sound (approximately 800,000 square feet)
- Electrical transmission cable route from the HDD exit point to the turbines, including 20-feet on each side of the cable. Much of this route lies within the Turbine deployment site
- Electrical transmission cable route HDD portion from the ordinary high water mark to the HDD exit point, including 10-feet on each side of the cable

Terrestrial Areas – private property

- Electrical transmission cable route HDD portion from the entry point (bore pit) to the ordinary high water mark, including 10-feet on each side of the cable
- Bore pit for horizontal directional drilling. The pit is expected to be approximately 6 feet deep, 20 feet long, 8 feet wide. The final engineering design of the site will dictate the actual dimensions.
- Electrical equipment building footprint (approximately 800 square feet)

- Equipment staging and parking area, typically 75 feet by 120 feet

The District has identified the APE to adequately cover any potential effects from turbine installation, operation, and removal activities. If it becomes necessary to revise the APE in the future, the District will formally notify you and request the SHPO's concurrence on the specific APE revision.

At this time the District requests your concurrence on the following:

(1) The determination of "No Adverse Effects to Historic Properties" for the proposed undertaking (pursuant to § 800.4[d][1]).

Thank you for your assistance with this project. We look forward to receiving your response within 30 days of receipt of this request. Please contact Craig Collar at 425-783-1825 or cwcollar@snopud.com should you have any questions or require additional information.

Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
Snohomish County PUD

Enclosures: (1) Cultural Resources Assessment, AMEC Environment and Infrastructure, February 17, 2012
(2) FERC's Section 106 Consultation Authorization, dated November 7, 2008

cc: David Turner
Federal Energy Regulatory Commission

CULTURAL RESOURCES REPORT COVER SHEET

Author: Tim Gerrish and Jason B. Cooper

Title of Report: Cultural Resources Assessment of the Pilot Tidal Energy Project FERC # 62110, Island County, Washington

Date of Report: February 22, 2012

County: Island Section: 22 Township: 31 North Range: 1 East

Quad: Coupeville Acres: 23.0: (1 acre [onshore]; 22 acres [offshore])

PDF of report submitted (REQUIRED) ☒ Yes

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

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

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☒ Yes ☐ No

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

DAHP Archaeological Site #:
45IS303
45IS304
_____
_____
_____
_____
_____
_____
_____

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

February 22, 2012
1-915-17347-0

Snohomish County PUD
PO Box 1107
Everett, WA. 98206-1107

Attention: Dawn Presler

Subject: Cultural Resources Assessment of the Pilot Tidal Energy Project (FERC # 62110), Island County, Washington
AMEC Environment & Infrastructure Short Report No. 31

Dear Dawn:

The Public Utility District No. 1 of Snohomish County (District) contracted AMEC Environment & Infrastructure, Inc. (AMEC), to conduct a cultural resources investigation for the Pilot Tidal Energy Project (Project) on Whidbey Island. The archaeological survey was focused within 1 onshore acre of the proposed horizontal directional drilling route and shore landing location on Keystone Spit just east of Fort Casey State Park, Island County, Washington. The Project is located within Ebey's Landing National Historical Reserve.

The following report is the outcome of a background literature review, record search, and an intensive archaeological survey of the Project's Area of Potential Effects (APE). AMEC's systematic survey included a pedestrian walkover of the terrestrial portion of the APE and the excavation of seven shovel test probes. During the course of the investigation two archaeological sites were documented: one pre-contact site (45IS304) and one historic period archaeological site (45IS303). Two historic buildings were also inventoried: one within the direct APE and one located in the indirect APE. No Traditional Cultural Properties were identified within the APE. AMEC finds that the proposed Project will result in **No Adverse Effects to Historic Properties**.

If you have any questions or comments on this report, please email me at jason.cooper@amec.com or call (425) 368-0953. Thank you again for the opportunity to work on this project.

AMEC Environment & Infrastructure, Inc.
11810 North Creek Parkway N
Bothell, Washington 98011
(425) 368-1000 Phone
(425) 368-1001 Facsimile
www.amec.com

Sincerely,

AMEC Environment & Infrastructure, Inc.

Jason Cooper, M.A., R.P.A.
Cultural Resources Lead

MANAGEMENT SUMMARY

Administrative Data

Report Title: Cultural Resources Assessment of the Pilot Tidal Energy Project (FERC # 62110), Island County, Washington
Author(s): Tim Gerrish and Jason Cooper, M.A., R.P.A.
Report Date: February 22, 2012

Location

City: Coupeville *County*: Island *State Route*: SR 20

Table 1. Project Location

¼ Section	Section	Township	Range
NW of SE	22	31 North	1 East

Source: USGS Coupeville 7.5 minute topographic map

Project Description

The Snohomish County Public Utility District No. 1 (District) is proposing the Pilot Tidal Energy Project (Project), Island County, Washington, in Admiralty Inlet, Puget Sound (**Figures 1 & 2**). The proposed project includes a sea floor deployment site for two tidal turbines, transmission cable route, marine and terrestrial horizontal directional drilling (HDD) route, and terrestrial activities related to electrical interconnection (**Figure 3**). The Project will involve the deployment, operation, monitoring and evaluation of two 6-meter-diameter Open-Centre Turbines approximately 0.5-mile offshore from Admiralty Head (**Figure 1**). An electrical transmission cable will be installed underground from shore to approximately the 19-meter (62-foot) water depth contour using a system called HDD. The bore length will be approximately 300 meters (984 feet) in length. Sub ducts will be used in the bore which will allow the cable to be installed. From the end of the HDD, the cable will continue exposed on the sea floor to its connection with each turbine.

The District has contracted with AMEC to conduct an archaeological survey of the proposed project. The results of the archaeological survey and technical report will be used for compliance with Section 106 of the National Historic Preservation Act (NHPA) in support of the District's final license application (FLA) to the Federal Energy Regulatory Commission (FERC). As a federal undertaking, the project needs to satisfy guidelines set forth by Section 106 of the NHPA of 1966, as amended.

Source: ESRI (2011)

N

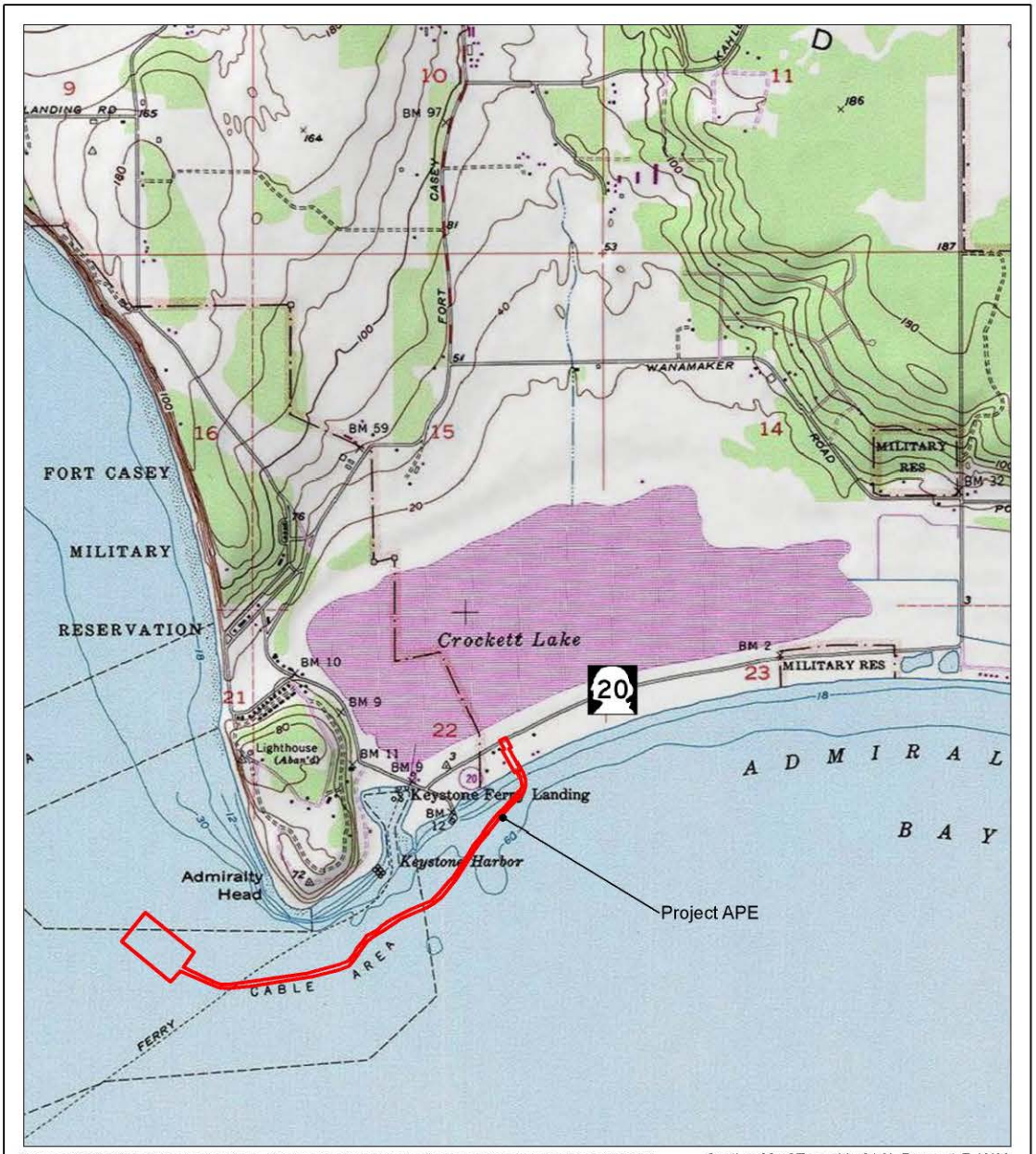
0 3 6 12 Miles

Figure 1

Project Vicinity

Pilot Tidal Energy Project

1-915-17347-0



Source: USGS 7.5' Topographic Map, Coupeville Quadrangle (National Geographic Society 2011)

Section 22 of Township 31 N, Range 1 E, W.M.

N

0 250 500 1,000 Meters

Legend

APE Boundary

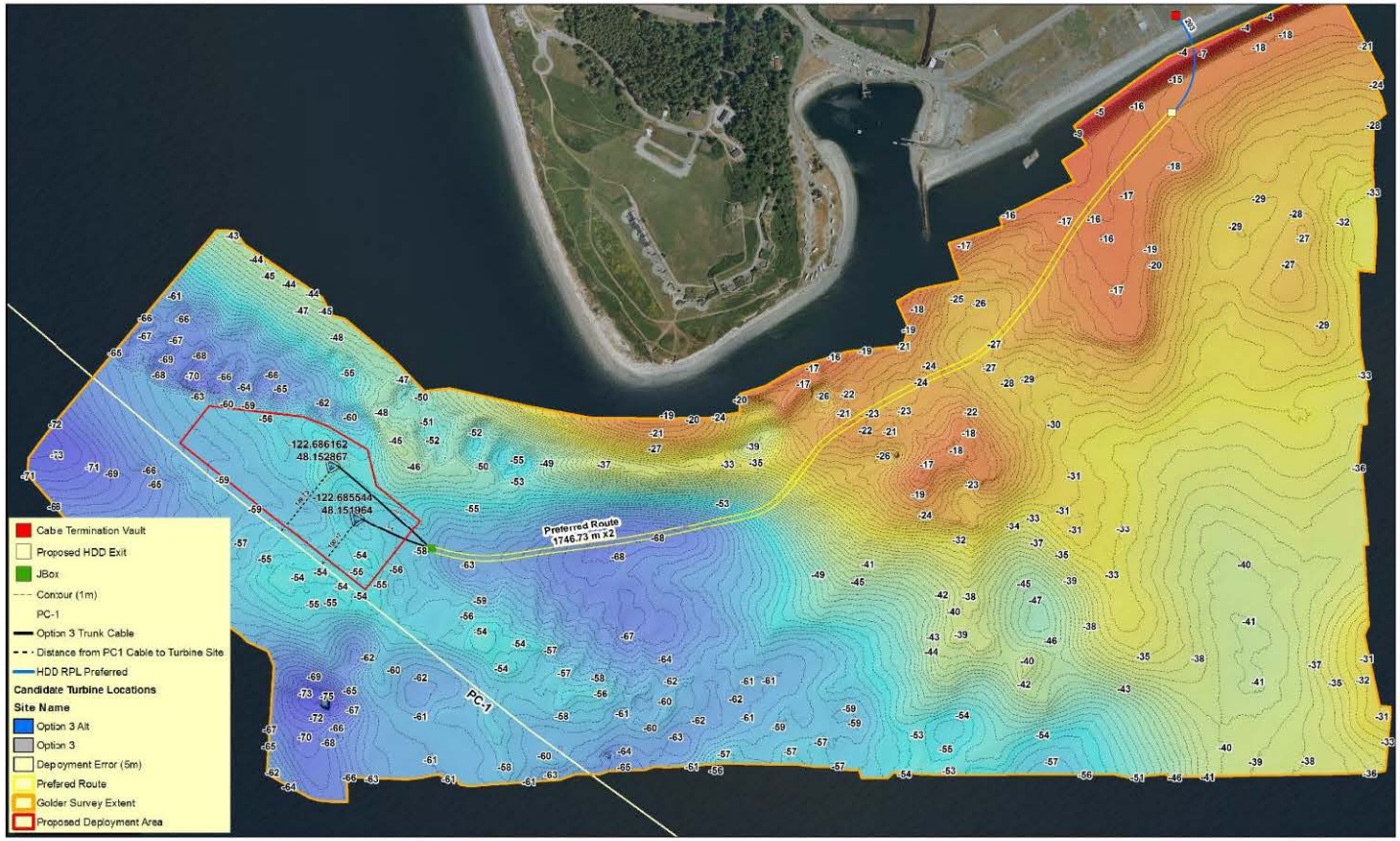
Figure 2

Area of Potential Effects

Pilot Tidal Energy Project

1-915-17347-0

amec



Source: Terra Sound, Golder, Sound & Sea Technology, Inc.

N

0 250 500 1,000 Meters

Figure 3

Area of Potential Effects Detail

Pilot Tidal Energy Project

1-915-17347-0

amec

Regulatory Environment

☒ Section 106 *Local Agency*: Snohomish County Public Utility District
☐ Governor's Executive Order 05-05
☐ Other:

The project is a federal undertaking and is subject to the provisions of Section 106 of the NHPA of 1966, as amended and associated regulations 36 CFR 800 regarding the protection of cultural and historic resources. Section 106 of NHPA requires that federal agencies take into account the effects of their undertakings on significant, National Register of Historic Places (NRHP)-eligible, historic properties and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on these actions. Within the state of Washington, the NRHP program is administered by the Washington State Department of Archaeology and Historic Preservation (DAHP) under the direction of the State Historic Preservation Officer (SHPO).

For federal projects, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association. In addition, they must meet one of the following criteria:

- are associated with events that have made a contribution to the broad pattern of our history;
- are associated with the lives of people significant in our past;
- embody the distinct characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- have yielded, or are likely to yield, information important for understanding prehistory or history (36 CFR 60.4).

Area of Potential Effects (APE)

Total Project Area (Acres): 23: (1 acre [onshore]; 22 acres [offshore])

APE Description and Justification: The total number of acres includes the onshore and offshore portions of the APE. The onshore area is 1.0 acre and includes HDD route and activities related to electrical interconnection. The offshore portion includes the proposed transmission line and the proposed Turbine Deployment Site. The transmission line corridor includes a 60-foot power easement along its entire course.

Photograph 1. Overview of the Project APE. The Schulke House/Steadman House is on the left and Crockett Lake can be seen in the background. View is northeast.

The proposed project is located on Whidbey Island in Island County within Section 22 of Township 31 North, Range 1 East, Willamette Meridian (**Figures 1 – 3**). The Project is located within Ebey's Landing National Historical Reserve (**Figure 4**), 1997 Amendment to the Central Whidbey Island Historic District (Cook 1972). The Project's proposed APE is located in an area categorized as maintaining a high probability for unknown archaeological resources based on the State of Washington Department of Archaeology and Historic Preservation's (DAHP) predictive model. There are no previously documented archaeological sites located within or adjacent to the APE. One historic building and associated garage, identified as the Schulke House/Steadman House, is located within the APE (**Photograph 1**). Built in 1910, this historic property is a contributing element to Ebey's Landing National Historic Reserve 1997 Amendment to the Central Whidbey Island Historic District (Inventory Card No. 336; Map A: Identification No. 70). There will be no direct impact to the Schulke/Steadman House as a result of the proposed project.

Consultation with DAHP, Tribes, and Other Interested Parties

Snohomish County PUD is handling all consultation with DAHP, local Tribes, and other interested parties. Any information that is gathered during this phase of project planning will be included in the final version of this report.

Source: ESRI (2011)

N

0 750 1,500 3,000 Meters

Pilot Tidal Energy Project

1-915-17347-0

Legend

- Ebey's Landing National Historical Reserve Boundary
- Contributing Element
- APE Boundary

Figure 4

Ebey's Landing National Historical Reserve

amec

BACKGROUND RESEARCH

Sources Consulted:

☒ DAHP GIS Database
☒ General Land Office Maps
☒ Metsker's Maps
☒ NRCS Soil Survey
☒ Other: See References

Previous Cultural Resources Surveys in or near the APE:

☒ Listed Below

Table 2. Previous Cultural Resources Surveys in or near the APE.

Author	Date	Title	Distance from Current Project APE	Findings Relevant to the Current Project
Cook, J.J.	1972	Central Whidbey Island Historic District-National Register of Historic Places Inventory Nomination Form	APE included in study	Documented all historic buildings associated with the Central Whidbey Island Historic District
Wessen, G.	2005	The Island County Archaeological Resources Mapping Project	APE included in study	Documented six precontact sites within 1 mile of APE
Meatte, D	2005	Cultural Resources Survey of the Proposed Comfort Station and Sewage System at Fort Casey State Park, Island County, Washington	0.7 miles	Relocation of footprints of Officer's quarter buildings and the presence of limited building materials.
Kent, R	2006	Cultural Resources Survey For The Lake Crocket Navigation Channel Maintenance Dredging And Adjacent Beach Nourishment Project, Whidbey Island, Island County, Washington	0.4 miles	No significant cultural resources were identified
Bush, K.R., B.N. Meidinger, and J. Rowland	2010	Archaeological Investigation and Monitoring Report: Town of Coupeville Waterline, Coupeville, Washington	1.4 miles	No significant cultural resources were identified

Recorded Archaeological Sites in or near the APE:

☒ Listed Below

Table 3. Previously Documented Archaeological Sites near the APE

Site Number	Description	Distance from Current Project APE	NRHP Eligibility
45IS113	Pre-contact Lithic Material	0.8 miles	Not evaluated
45IS114	Pre-contact Lithic Material	0.6 miles	Not evaluated
45IS115	Pre-contact Lithic Material	0.7 miles	Not evaluated
45IS116	Pre-contact Shell Midden	0.8 miles	Not evaluated
45IS117	Pre-contact Lithic Material	0.9 miles	Not evaluated
45IS118	Pre-contact Lithic Material	1.4 miles	Not evaluated

All of the sites listed above were originally recorded by Gary Wessen (1988) for the Office of Archaeology and Historic Preservation (OAHP, now called DAHP). All of these sites were originally observed by George Bishop (of BOAS, Inc.) in 1986. Mr. Wessen documented the sites while conducting a site inventory of Island County called the Island County Archaeological Resources Mapping Project (ICARMP). Most of the sites contain limited observed lithic debitage and are dominated by the presence of large discoidal flakes and/or tested cobbles and unifacial choppers. The location of these sites, positioned around the northern edge of Crockett Lake is significant, for the assumption that this tidal lagoon was a popular hunting spot and resource gathering location is verified by the presence of stone tools used in processing. Crockett Lake historically was separated from Admiralty Bay by what is known as Keystone Spit.

Keystone Spit extends the entire course of the southern edge of Crockett Lake, creating an approximate 250-meter-wide sand/cobble bar between the Lake and Admiralty Bay. Keystone Spit lies on the northern edge of Admiralty Bay and is positioned with a direct southern exposure which provides a slight protection from the westerly forces which contact the western bluff of Admiralty Head. A special emphasis, therefore, needs to be accounted for when considering the potential for Native American archaeological sites along Keystone Spit. As the evidence of Native American land use along the banks of Crockett Lake is indisputable, it is likely that the marine shoreline south of Crockett Lake also would have been an area of interest.

Recorded Historic Buildings or Structures in or adjacent to the APE:

☐ None
☒ Listed Below

Table 4. Previously Recorded Historic Buildings within the APE

Building Name	Address	Description	NRHP Eligibility
Schulke House/Steadman House	13254 SR 20, Coupeville, WA. 98239	1910 Bungalow	Eligible

The Schulke House/Steadman House (**Photograph 2**) was inventoried in the summer of 1983 by National Park Service staff on a Pacific Northwest Regional Office (PNRO) Inventory Form for the Ebey's Landing National Historical Reserve (**Figure 4**). However, the form was never inventoried by the DAHP and therefore is not listed as a Historic Register Property on the Washington Information System for Architectural and Archaeological Records Data (WISAARD). To fulfill our obligation of documenting all historic properties within or directly adjacent to the Project APE, the Schulke/ Steadman House was submitted to the DAHP for review and to be updated within DAHP records. See the *Cultural Resources Identified* section below for additional information.

Photograph 2. The Schulke/Steadman House- north and west elevations. View is southeast.

In October of 1972, the Island County Commissioners established the Central Whidbey Island Historic District (CWIHD) which at the time contained approximately 8,000 acres surrounding Penn Cove. The emphasis on documentation was: original Donation Land Claims, eighteen

places listed on the Historic American Buildings Survey which was performed in 1935, Fort Casey, Admiralty Head lighthouse and numerous structures portraying early domestic architecture.

In 1978, the National Park Service joined the preservation effort of the CWIHD by creating the nation's first historical reserve to aid in the protection of a rural working landscape and community. The reserve had grown since the foundation of the CWIHS's origin and now contains 17,500 acres, 17 farms, over 400 historical structures, native prairies, two state parks, several miles of shoreline, a network of trails and the second oldest town in Washington. The reserve is now managed by a 9-member Trust Board.

Environmental Context

Island County comprises five islands located in the northern portion of the Puget Sound. It is located within the physiographic province called the Puget Trough. Most of the soils occur over undulating to rolling uplands that range in elevation from 100 to 300 feet. Several small prairies occur along the coast at elevations of less than 100 feet. Others occupy the uplands. The soils of Island County originated predominantly from glacial forces, being deposited in moraines left by glaciers that had moved across the Puget Lowlands (Ness and Richins 1958).

Soils

The soils of the glacial uplands occupy 75 percent of Island County. Common soil classes occurring on Whidbey Island include the Hoypus, Keystone, Whidbey, Swantown, Casey, Townsend and Bozarth. All of these soils were derived from coarse to fine textured glacial drift. The soil class found within the Project area is called *Coastal Beach*, occurring on slopes of 0 to 2 percent. It occurs on land types of narrow strips of shore-washed beach sand and gravel that lie parallel to the coast. During high tides or storms, these areas may be under water, and are often littered with driftwood. These areas are generally free of vegetation, but grasses and shrubs will grow along the margins farthest from the water (Ness and Richins 1958).

Geologic Setting

The oldest widely exposed geologic unit of Whidbey Island is the Double Bluff Formation. The Double Bluff Drift occurred during a Pleistocene glacial period and is generally referred to as a glaciomarine drift of silt and clay diamiction recognized in an area of only 1,500 feet of shoreline southeast of Ebey's Landing. This Drift deposit occurred between 185 to 125 thousand years ago (kya) (Polentz et al. 2005).

The Whidbey Formation, which forms the base of the section along West Beach and Blowers Bluff. The Whidbey Formation occurred during an interglacial period estimated about 125 to 80 thousand years before present. Petrography and sedimentology suggests that an ancient Skagit (or Stilliguamish) River extended to form the Whidbey Formation by the deposition of a low energy setting similar to the modern lower Skagit River flood plain (Polentz et al. 2005).

The Whidbey formation was followed by a number of successive formations occurring during fluctuating glacial periods. Undivided Pre-Fraser nonglacial deposits and undivided Pleistocene deposits occurred likely around the time of the Olympia or Whidbey Formation's. Deposits from

the Fraser Glaciations include the Everson Interstade and the Vashon Stade. An early episode of the Everson Interstade was the deposition of the Partridge gravel; a mix of sand and gravel with minor interlayed silt and silty sand. The Everson Interstade also includes a series of geologic events such as High-energy outwash gravel deposits, and glaciomarine drift (Polentz et al. 2005).

The Vashon Stade refers to a mixture of clay, silt, sand and gravel deposited directly by Vashon Stade glacier ice. This formation occurred between 18 and 13 kya. An advance outwash occurred prior to the Vashon ice sheets and dated to between 18 and 20 kya. Since the retreat of the Vashon ice sheet a series of postglacial deposits (late Pleistocene to Holocene) have occurred across the northwest region. These include late Pleistocene sand deposits, landslide deposits, mass wasting deposits, marsh deposits, peat, dune and beach deposits (Polentz et al. 2005).

Crockett Lake is a fluvioglacial landform known as a kettle, in which calving occurs at the front of a receding glacier. Glacial outwash is generated when meltwater flows away from the glacier and deposits sediment to form broad outwash plains. When the large ice blocks (left behind by the glaciers) melt, kettle holes are left across the outwash plain (Bennet 1997). Crockett Lake is a basin underlain by thick peat, much of which was originally occupied by a freshwater lake. Stratigraphic descriptions have been derived by Rigg (1958) who managed to perform three transects with 4 to 5 bores each. The deepest core near the middle of Crockett Lake shows about 5 meters of peat. Atwater (1997) reoccupied Rigg's middle transect during 1986 fieldwork and dated samples of wood within this peat deposit to be from approximately 4 to 4.5 kya. The lake is a combination of saltwater and freshwater marshes. The salt derived composition is from groundwater mixing and the occasional high tide which breaches Keystone Spit (Kelsey 1999).

Prehistory

The following is a brief summary of human history within the Project vicinity on Whidbey Island in Washington State. For a detailed description of traditional Coast Salish culture, see the following references: Allen 1976; Ames and Maschner 1999, Amoss 1977a, 1977b, 1978, 1981; Belcher 1986; Bennett 1972; Borden 1950, 1951, 1975; Carlson 1990, 1996; Collins 1952, 1974a, 1974b, 1974c; Haeberlin and Gunther 1930; Harmon 1998; Hilbert and Miller 2001; Jorgenson 1969; Mattson 1971, 1985; Onat 1987; Ruby and Brown 1986; Smith 1941, 1950, 1956; Spier 1936; Suttles 1990.

Generally, people of the coastal communities within the Southern Coast Salish region excelled at resource extraction, processing, and tool and structure manufacture. Their lifeways followed a seasonal round that included permanent and seasonal camps for optimal resource utilization, including fishing and shellfish and plant gathering (Bush et al. 2010). Archaeological evidence from Ebey's Prairie indicates that humans have occupied Whidbey Island for the last 10,000 years (Weiser 1992).

Ethnohistory

Suttles and Lane (1990) describe the central portion of Whidbey Island within the traditional territory of the Skagit Tribe, who spoke a dialect of Northern Lushootseed, a subdivision of the

Southern Coast Salish language. Prior to the treaties of 1854 – 1855 and the imposition of the reservation system, there were at least 50 named groups, each having one or more winter villages, several summer camps, and resource sites. The Northern Lushootseed-speaking territory extended from Samish Bay southward to the head of Puget Sound during the late 18th and early 19th centuries (Suttles and Lane 1990).

The Skagit tribe is divided into two sub-groups: the Lower Skagits and the Upper Skagits. The Lower Skagit people are also referred to as the Whidbey Island Skagits and occupied areas from Central Whidbey Island to the mainland around the mouth of the Skagit River (Ruby and Brown 1992). Settlements with permanent structures were concentrated near Oak Harbor, Crescent Harbor, and Penn Cove (Wilkes 1856). Four villages were at Penn Cove prior to the arrival of Euroamericans (Kirk and Alexander 1990) and according to the report of the Wilkes Expedition (1856), one of which was heavily fortified (Wilkes 1856; Kirk and Alexander 1990). In the summer, the Lower Skagits usually moved south on the east side of Whidbey Island and across to Camano Island (Bryan 1963).

The Point Elliot Treaty, directed under the auspices of Territorial Governor Isaac I. Stevens, was signed January 1855, and resulted in the displacement of the Lower Skagit people to the Swinomish Reservation (Ruby and Brown 1992). The next few years after the Point Elliot Treaty was signed, relations between the white settlers and the Tribes of western Washington were unsettled.

Pre-epidemic population of Southern Coast Salish people is estimated at about 12,600. After major epidemics, the population dropped to an estimated 5,000 by the 1850s and by 1885 to less than 2,000 (Suttles and Lane 1990). Disease and the continual pressures of land use conflict with Euroamerican settlers devastated the health and well-being of Native American villages and tribes across the region that surrounds the Salish Sea.

History

Among the first European Explorers to have contact with the Southern Coast Salish people of Whidbey Island was Captain George Vancouver. Captain Vancouver landed along the shores of Whidbey Island in June 1792 whereby Joseph Whidbey disembarked the ship *Discovery* to conduct surveying. After discovering the narrow channel at the north end of the island, separating the island from the mainland, Whidbey's name was given to the island under Vancouver's command. Upon entering a newly discovered harbor, dubbed Penn's Cove after a friend of Vancouver's, Vancouver noted "seemingly deserted villages on both points at the entrance" of the cove (Kellogg 1934).

Missionaries were among the earliest Euroamericans to establish closer relations among the Coast Salish villages of Whidbey Island. On March 17, 1839, Father Blanchet, a French Catholic, arrived on the Cowlitz River. Upon hearing of the "black robes," multiple delegations of Native Americans from around the Puget Sound travelled to witness these men. Chief Tslalakum of a tribe of Sowkamish Indians on Whidbey Island was one who attended the meeting (Kellogg 1934; Cook 1973). Months later, Chief Tslalakum sent a party of men back down to Father Blanchet to invite him to their village on Whidbey Island to live with them. Blanchet eagerly accepted and on May 28, 1840, he arrived at Tslalakum's village on the

western shores near the historical location of Ebey's Landing. Upon landing, many villagers came running over with curiosity. Chief Tslalakum ordered the others to carry Blanchet's belongings up to the village, which was up on the bluff some 50 feet above the beach. The following day, a service was planned by Blanchet, which resulted in the attendance of a sub-chief, Witskalatche and a band of Indians from another part of the Island (Kellogg 1934).

On June 1, 1841, Captain Charles Wilkes of the United States Exploring Expedition sailed into Penn's Cove (**Exhibit 1**). Wilkes reported that the Indians of the Island were called sachet (Skagit). Wilkes observed firsthand the effects of Father Blanchet and the missionaries while he was entertained by Chief Netlam, whose village was in the process of building a church at their village along the southern shore of Penn's Cove. Wilkes writes:

> "*This island contains many small villages, and appears to be more thickly peopled than other parts of the sound. It is in possession of the Sachet tribe, who have here a permanent settlement, consisting of large well-built lodges of timber and planks, similar to those already described on the Columbia and elsewhere. The chief possessed a chest of valuable, carefully preserved in a corner, the contents of which were shown by him with no small pride and consisted of a long roll of paper on which were many representations of European houses and churches, together with rude sketches of the heavenly bodies, and a map of America. These had been given to him and explained by the Roman Catholic priest, and he seemed to understand the explanation…*
>
> *The priests of the Catholic mission made half-yearly visits, baptizing and leaving tokens among these Indians, and have done much good in promoting a good feeling among them. They were constructing a large building for a church, near which was erected a large cross*" [Wilkes 1856:480-481].

Wilkes reported the dress of the Skagit people generally consisted of a single blanket fastened around the neck and shoulders by a wooden pin. Some wore leather hunting shirts fringed with beads and shells. Some wore leggings. The women were ornamented with little brass bells and other trinkets and many with pierced nose.

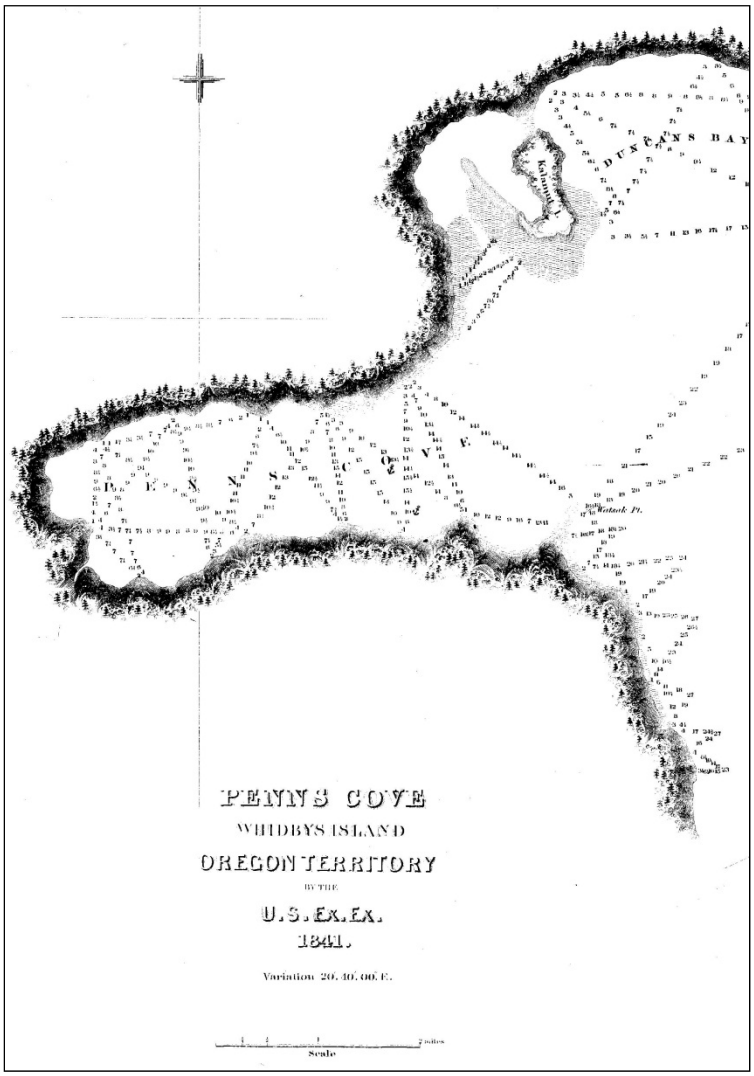


Exhibit 1. A 1841 navigation chart of the Charles Wilkes U.S. Exploring Expedition (*Source*: NOAA Historical Map and Chart Collection, Image: cp2769c, chart # 158).

Red Bluffs was the name given by Wilkes in 1841 to the location of the present day Fort Casey. A few years later, this point was labeled Admiralty Head on Captain Henry Kellett's chart (Kellogg 1934), and was also known as Kellogg's Point as it was a within the original Donation Land Claim (DLC) of Dr. John Coe Kellogg.

Flora A. Pearson Engle also contributed greatly to the compilation of Skagit place names of which she was assisted by Snakelum Charlie and others: Puget Sound – Whole-itch; Whidbey Island – *Tscha-kole-chy*; Penn's Cove – *Skagit*; Fort Casey - *Skle-Ose*, to name a few (Kellogg 1934). She came to Washington Territory with the second Mercer Expedition in 1866 and died in Coupeville in 1935. Her father, Daniel Pearson, came west with the first Mercer party in 1864. For many years, he was the lighthouse keeper at Admiralty Head and she also was assistant lighthouse keeper for 13 years (Washington Historical Quarterly 1935).

George Gibbs, an ethnologist accompanying the Stevens' party tasked with making treaties with the Puget Sound Tribes in 1855 documented the following names of sub-tribes among the Skagits: *Kikiallu*, *Nukwatsamish*, *Towahha*, *Smali-hu*, *Sokumehu*, *Miskaiwhu*, *Miseekwigweelis*, *Swinamish*, and *Skwnamish*. These communities occupied Skagit territory from Bellingham Bay to the southern half of Whidbey Island (Gibbs 1877).

An account by a sailor named Tommy Griffiths, reported to Mrs. Puget Race of coming to the Island prior to any white settlement, as a cabin boy on an English merchant vessel from which he and a companion had gone ashore to hunt bird's eggs at Admiralty Head. A great number of Indians were assembled there who seemed friendly (Kellogg 1934).

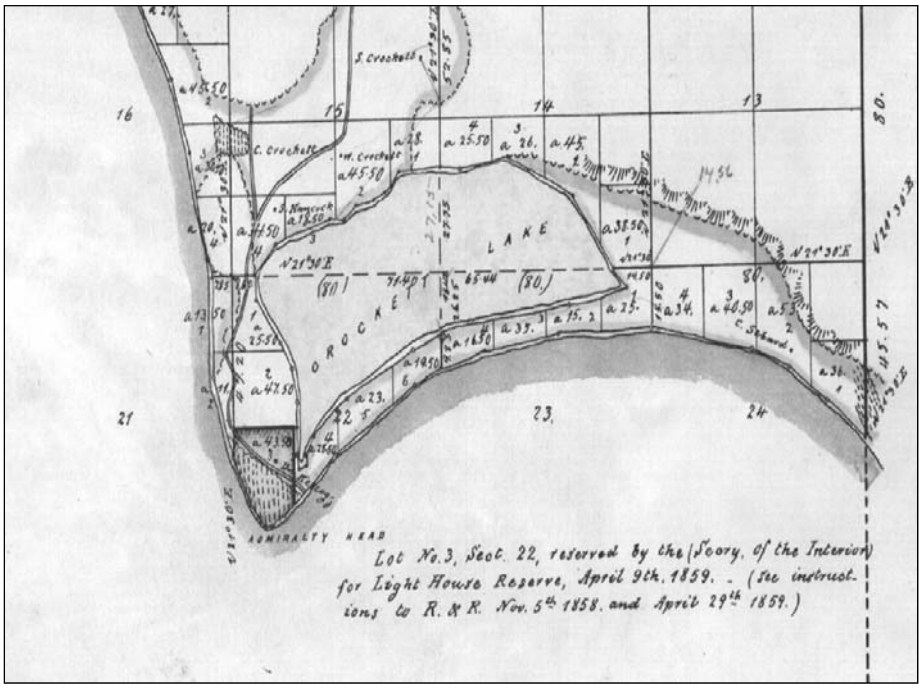


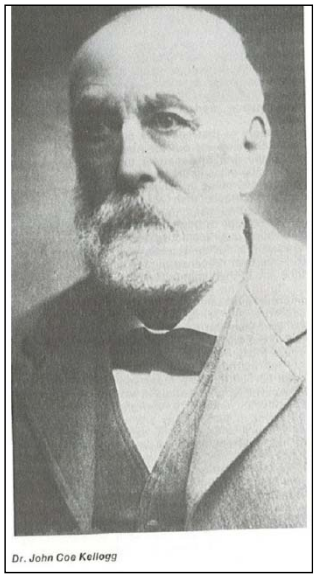
Exhibit 2. A 1856 General Land Office Survey Map- signed by Department of Interior in 1886 (*Source*: U.S. Surveyor General, Department of Interior Land Status & Cadastral Records [BLM 1856]). The location of Dr. J.C. Kellogg's cabin is shown at Admiralty Head.

The first white settler to lay claim to the Project's APE was Dr. John Coe Kellogg on September 9, 1853. This claim contained the land along Keystone Spit to Admiralty Head (**Exhibit 2**). Kellogg was born in Starkey, New York on November 11, 1820. After a bout with Malaria, he began the study of medicine. He received his training in Ohio and later Michigan before setting out for the Puget Sound with his wife and forty others in a train of 16 wagons. They arrived at Fort Vancouver in November 1852 during which time Captain U.S. Grant was in command of the Fort (Cook 1973). In the spring of 1853, Dr. Kellogg joined a small group in a dugout canoe and made his first visit to Whidbey Island from Vancouver. The land at Red Bluff (Admiralty Head) had not been preempted and resulted in 30 acres where a deserted cabin already was situated upland form the point. He had the cabin remodeled and lived there with his family for many years.

Many sources on Whidbey Island's history speak of the northern Indians coming down to Whidbey Island, raiding and battling with the local tribes. Typically, the Haida and Tlingit are referenced as those involved in these events. In 1841 while Captain Wilkes (1856) was at Penn's Cove, he provides a visual narrative to this effect:

> *"The Sachet tribe are obliged to provide for their defence* [sic] *against the more northern tribes, by whom they are frequently attacked, for the purpose of carrying them off as slaves. For protection against these attacks they have large enclosures, four hundred feet long, and capable of containing many families, which are constructed of pickets made of thick planks, about thirty feet high. The pickets are firmly fixed into the ground, the spaces between them being only sufficient to point a musket through. The appearance of one of these enclosures is formidable, and they may be termed impregnable to any Indian force: for, in the opinion of the officers, it would have required artillery to make a breach in them. The interior of the enclosure is divided into lodges, and has all the aspect of a fortress*" [Willkes 1856:481].

As the first white settlers began populating the Island, they too became of interest to the northern Indians. The northern Indians made a practice of stopping to camp at Admiralty Head, which caused the families in the area to worry about their safety (Kellogg Cahail 1939). In 1857, hostilities with the northern tribes were so bad that Dr. Kellogg (**Exhibit 3**) moved his family across Admiralty Inlet to Port Gamble, where he worked as company doctor. Later on, the Kellogg family moved back to their home at Admiralty Head (**Exhibit 4**), but had to move into the Blockhouse on the neighboring land of Colonel Walter Crockett because hostilities with the northern tribes remained bad.



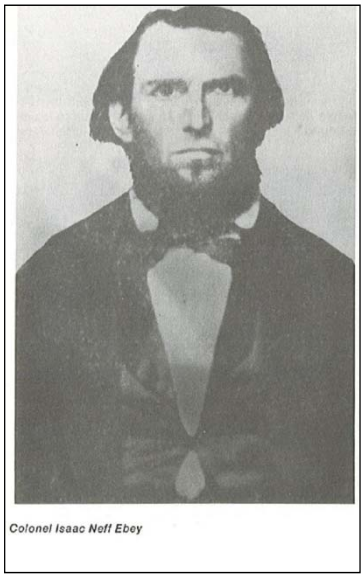


Exhibit 3. Historic portraits of Dr. John Coe Kellogg and Colonel Isaac Neff Ebey (*Source*: Cook 1973).

In 1858, Dr. Kellogg and his family moved to the Smith's Prairie near Coupeville because of the many difficulties with the northern tribes. Kellogg sold 10 acres to the government in that same year for the construction of a lighthouse. Dr. Kellogg continued his medical practice, going from patient to patient in a canoe manned by local Skagits which resulted in the acquisition of his nickname, the "canoe doctor." His wife was Caroline, certainly one of the strong pioneer women of Washington Territory in its early years. The Kellogg's had a son Albert and daughter Alice, listed as ages 14 and 12 respectively on the U.S. Population Census (1870). Dr. Kellogg died in Seattle on August 31, 1902 (Cook 1973; Kellogg 1934; Kellogg Cahail 1939).

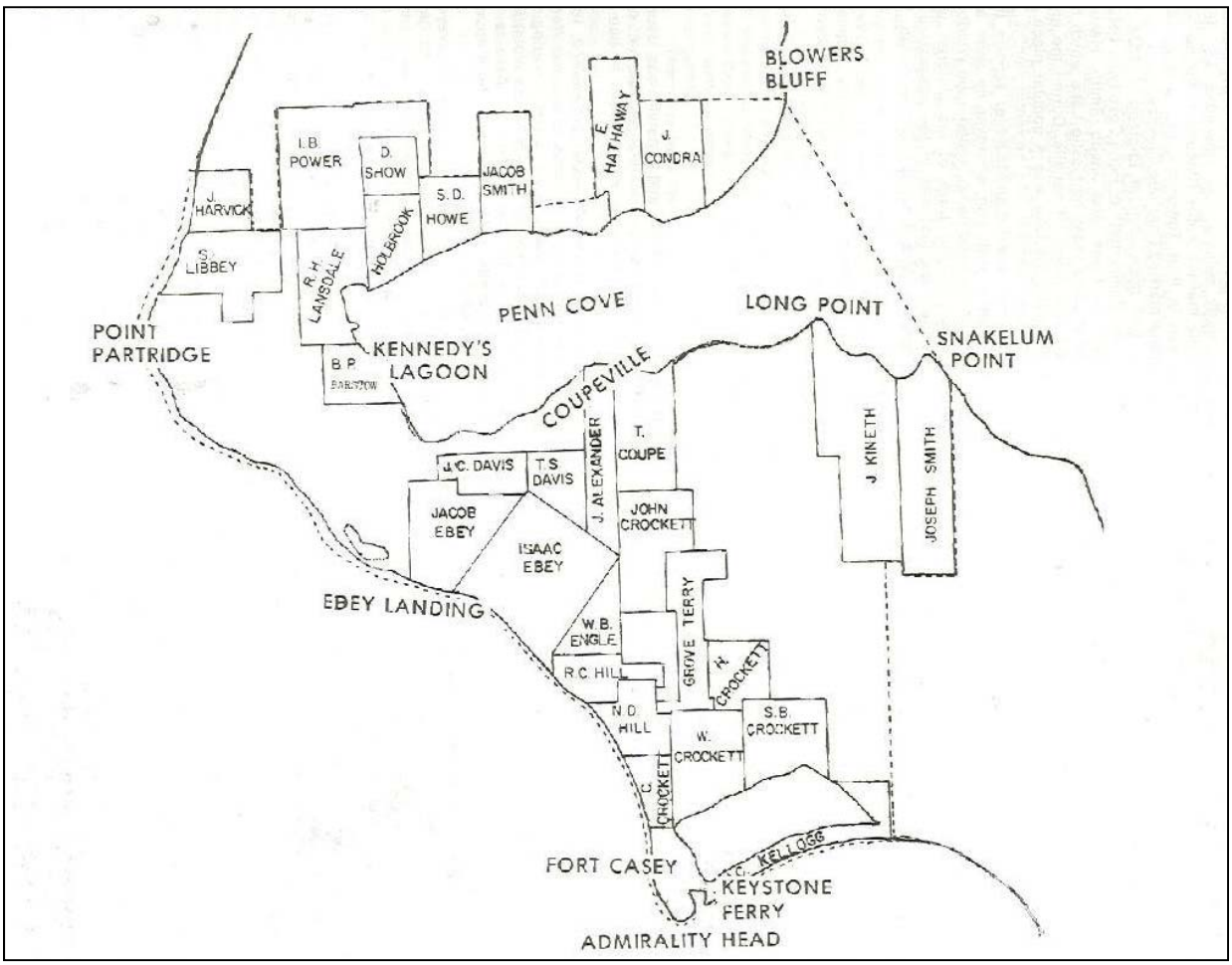


Exhibit 4. Map of DLCs of Central Whidbey Island near Ebey's Landing (*Source*: [Cook 1973]).

In 1857, a war party of northern Indians (presumably Tlingit or Haida) landed their canoes on Kellogg's tract at Admiralty Head to kill Dr. Kellogg to atone for the death of their chief. At the time, Dr. Kellogg was in Olympia. Caroline Kellogg however, was home and nervously waited for 3 days as the band of northern Indians awaited Dr. Kellogg. Finally, the group of Indians moved north along the shores to Colonel Isaac Neff Ebey's (**Exhibit 3**) landing and killed him. Justice was intended to be served upon a *great white chief* in return for the massacre beset upon the northern Indians by the U.S.S. Massachusetts, which had killed 27 northern Indians including Chiefs at Whiskey Spit near Port Gamble. Colonel Ebey was shot dead and

decapitated. The Indians took the head of Ebey with them as a prize. It is said that the Indians scalped the head of Ebey at Smith's Island, buried the head, and took the scalp with them (Kellogg 1934). In 1860, Captain Charles Dodd of the Hudson Bay Company had travelled north to recover the head of Ebey. After an earlier failure to trade for the scalp, Dodd successfully managed to buy the scalp from the Kake village on Kupreanof Island and return it to the Ebey family. According to some sources, the grave of Ebey was opened so the scalp could be returned with the body, however other sources claim the grave was never reopened. In fact, Albert Kellogg, the son of Dr. John C. Kellogg (whom was the intended recipient of the fate of Ebey) recited his experience of being shown the scalp by Colonel Ebey's sister, Mary Ebey Bozarth, 10 or so years after the murder (McRoberts 2003; Sunnyside Cemetery n.d.).

The Crockett family is noteworthy with regards to the historic period of Central Whidbey Island. Colonel Walter Crockett, Sr. was from an old Virginia family. He served in the War of 1812 and was later elected to the Virginia legislature for three terms. He married Mary Black Ross and began moving west by first going to Missouri in 1838 and eventually to Olympia in 1851. The family moved to Whidbey Island shortly after arriving and settled on many claims. In 1857, due to hostile relations with northern Indian tribes and the local tribes due to the treaty negations Colonel Crockett built a blockhouse on his property for community protection. Although this blockhouse was never used in battle, it was used by families when tensions were high. Later, a second blockhouse was added to the farm. Colonel Crockett died in 1869 and his wife Mary died in 1885. The Crockett family was quite extensive living around Crockett's Lake and included Colonel Crockett's children and relatives: Samuel Black Crockett, John Crockett, Hugh Crockett, Walter Crockett, Jr., Charles Crockett, and others (Cook 1973).

Dr. Kellogg first sold off 10 acres of his land to the United States Government on December 24, 1858, for four hundred dollars. Here, the first lighthouse built inside of Point Flattery was constructed in 1860. In the late 1890s, the Government chose Admiralty Head for the location of one of three forts placed in a triangular position guarding the entrance to Puget Sound. In addition to the 10 acres owned for the lighthouse, the Government purchased another 123 acres from Kellogg on April 20, 1897. Another 20 acres was added on January 18, 1899 (Hay 1904; Kellogg 1934) (**Exhibit 5**). The Fort was constructed over the next many years. Dr. Kellogg's log cabin was remodeled and used as an office for the engineers. The fort was named Fort Casey, for Brig. General Thomas L. Casey, Chief of Engineers for the U.S. Army. The Fort was officially activated in 1900 (Kellogg 1934).

The fort was originally part of a plan by President Grover Cleveland upon a report that illustrated a grim picture of existing defenses in 1886. The plan called for the construction of forts which could house breech-loading cannons, mortars, floating batteries and submarine mines. The guns at Fort Casey were never used for war. During World War I, the fort was converted into a training post. After World War I, the post was placed on caretaker status and used by the National Guard for training (Hart 1980). The Fort was reactivated during World War II as a training center. Modifications were made to the layout of buildings to support the needs of the time and two batteries were modified to hold 3-inch anti-aircraft batteries (Hart 1980).

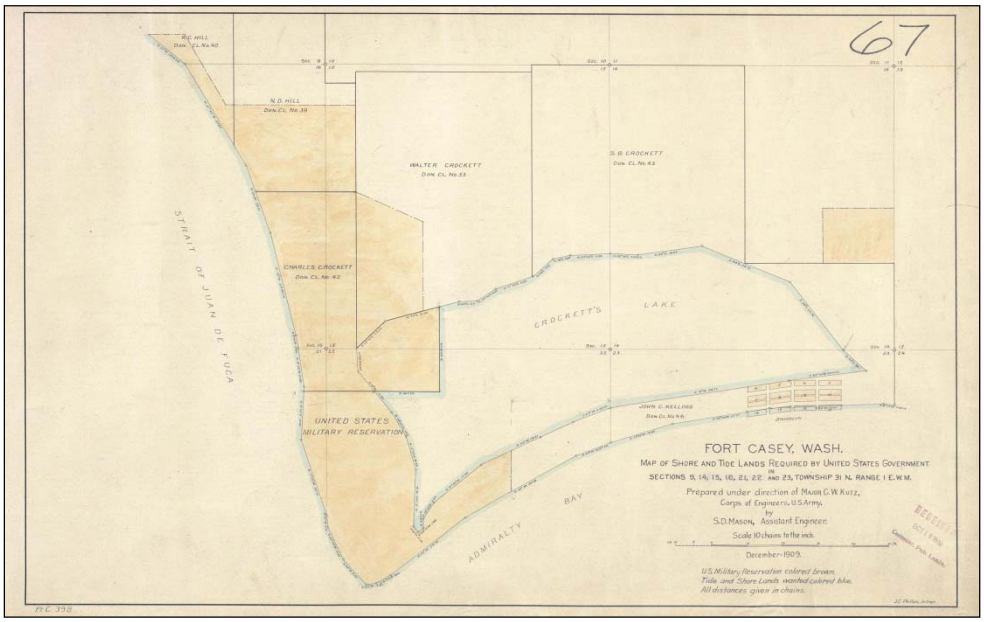


Exhibit 5. A 1909 map of Fort Casey delineating original DLC tracts (*Source*: Washington State Digital Archives General Map Collection 1851-2005 [Phillips 1909]).

Located in the Project's APE is the Schulke House/Steadman House. This house was first documented on the National Register of Historic Places (NRHP) Inventory Nomination Form for the Central Whidbey Island Historic District, submitted to the National Park Service in 1972. Amos E. Schulke was born in Springfield, Illinois on November 23, 1883. By 1910, Mr. Schulke is listed on the Fort Casey U.S. Population Census as the head of house, age 24, and a soldier for the U.S. Army. The census sheet also lists O. (Orpha) Jane Schulke as wife, age 18, and born in Indiana. A child, Amos E. Schulke, age 3 months in also listed (US Population Census 1910).

The Schulke House is documented as being constructed in 1910. Based on the U.S. Federal Census, the family was present in the Fort Casey District at this time. But the fact that Mr. Schulke is listed as a soldier for the U.S. Army in 1910 leads to the conclusion that he was enlisted at some point prior to his service at Fort Casey. A copy of Mr. Schulke's discharge papers (WSDA 1920) were obtained and revealed the following information about his military service between 1915 and 1920. Amos E. Schulke enlisted in the Regular Army (R.A.) at Fort Casey, Washington, on February 17, 1915 at age 31.

Upon his discharge form, his service grades list him as a mechanic beginning July 29, 1914. It is unclear if this was a position he held prior to service at Fort Casey or simply an error in recordation based on the fact that he was not enlisted until 1915. Nevertheless, he is documented as serving within the 10th Company, Puget Sound Coastal Artillery Command, Fort Casey, Washington through November 17, 1919. During his service with the 10th Company, he was promoted to Sergeant on November 7, 1917, then to Supply Sergeant on November 10, 1917, before becoming a First Sergeant on August 23, 1918. At this time, he transferred to the 3rd Company for the Puget Sound Coastal Artillery Command at Fort Worden, Washington until January 1920. He then took post with Headquarters Command amongst the 55th Artillery at the

Coastal Artillery Command until his discharge on March 30, 1920 (WSDA 1920). Mr. Schulke died in Coupeville on September 20, 1930 at the age of 46.

The first born son of Mr. Schulke (named after him) was Amos E. and was born January 16, 1910, on Whidbey Island. Amos moved to Seattle and married Rose Ciccnetti in December of 1932 (*Seattle Daily Times* [SDT] 1932). On November 9, 1933, they had a daughter while living at 1133 23rd Avenue South in Seattle's Judkin's Park neighborhood (SDT 1933). The daughter, referred to as "Baby girl," lived for a short period, dying in March of 1935 (WDA 1935). It is not known what happened with Amos' first marriage, but on April 26, 1957, he married Helen O. Hamilton (WDA 1957). He died in September 1972 in Seward, Alaska. Presumably, Orpha continued living at the house on Keystone Spit until 1940 when the property was sold. The Schulke's presence along Keystone Spit fits the precise period of which the historic artifacts were observed within site 45KI303 (Field ID. 010512/01). Likely, over time, refuse was dumped just outside the footprint of the house and has so remained for over 100 years.

Fieldwork

Dates of Survey: January 5, 2012
Field Personnel: Tim Gerrish and Tyler McWilliams
Weather and Surface Visibility: During field investigations, weather conditions present were partly cloudy with winds ranging from 0 to 15 miles per hour and gusts to 20 miles per hour. The terrestrial portion of the Project area is exposed marine and glacial deposits with light grasses and shrubs. The overall surface visibility was approximately 80 percent.

Methods: Fieldwork consisted of a 10 meter interval pedestrian survey accompanied by seven shovel test probes (STP) (**Table 5**). Due to the loose structure of marine gravels along Keystone Spit, STPs were confined to a maximum depth of 60 centimeters below surface (cmbs) due to sloughing side walls. Nevertheless, each STP was sufficiently dug to a depth which pre contact archaeological material could be expected. Additionally, a metal detector was used during the pedestrian survey portion of the survey to aid in the identification of cultural materials (**Photograph 3**).

In an effort to identify any submerged cultural resources within the proposed transmission line corridor and turbine location, additional measures were taken. The District contracted Golder Associates, Inc. (Golder) to conduct geophysical investigation to identify the most suitable location for the power lines and turbines (Sylwester and Findley 2011). Golder used a sub-bottom profiler with seismic reflection systems to determine the composition and structure below the sea floor. They used side-scan sonar to produce a mosaic of the sea floor. The results of their report help show that no cultural anomalies lie within the Project's APE except for the presence of one communication cable that passes through the surveyed area.

Photograph 3. Documenting cultural materials at 45IS303 Locus 2. View is west with Schulke House/Steadman House and garage in background.

Subsurface Tests:
☐ None
☒ Described Below

Table 5. Shovel Test Probe Results.

Test Type	Number	Sediments	Interpretation
STP	CO-1	0-55 cmbs:10YR3/3 sandy silt with 80% loosely compact subround and subangular gravels and small cobbles	Coastal marine gravel with light amount of soil accumulation near surface.
STP	CO-2	0-30 cmbs: Loosely compact gravels and cobbles. 30-50 cmbs: Loosely compact gravels and cobbles with 10YR3/3 sand.	Coastal marine gravel bar accumulation. 1 clear glass fragment (0-20 cmbs)
STP	CO-3	0-40 cmbs: Rounded gravels and small cobbles with 10YR3/3 sandy silt	Coastal marine gravel bar accumulation
STP	CO-4	0-15 cmbs: Loosely compact subround pebbles and gravels. 15-45 cmbs: Loosely compact subround gravel with 20% dark grey sand	Coastal marine gravel bar accumulation. Common oyster and clam shell fragments (15-30 cmbs)- Not cultural.
STP	CO-5	0-50 cmbs: Loosely compact rounded gravels and small cobbles with 20% 10YR4/3 sandy silt	Coastal marine gravel bar accumulation
STP	CO-6	0-60 cmbs: Moderately compact subround gravels and small cobbles with 25% dark grey sand	Coastal marine gravel bar accumulation. STP positive with 6 glass fragments, 1 ceramic fragment.
STP	CO-7	0-40 cmbs: Loosely compact round and subround gravel and small cobbles with 20% 10YR4/3 coarse sand	Coastal marine gravel bar accumulation. Few shell fragments present. Historic refuse on surface nearby STP.

Note: cmbs= centimeters below surface

AMEC staff searched the National Oceanic and Atmospheric Administration (NOAA) Office of Coast Survey website and observed all recorded listings within the Automated Wreck and Obstruction Information System (AWOIS). There are no wrecks or obstructions documented within the proposed Project's footprint. The nearest recorded feature is the abandoned Fort Casey wharf along the shoreline east of the Keystone Ferry terminal. This wharf was constructed in 1903 – 1904 by E.C. McClanahan of Seattle and included "…not only the construction of a monster dock with suitable ware and boar houses and offices, but also a road across the sandspit, a bridge from there across Crockett's Lake and another turnpike up a slight elevation but for some little distance to the present contour of the fort proper. A sidewalk, and suitable drains, culverts, etc., are included in the work" (PTDL 1903).

Cultural Resources Identified

Two archaeological sites were documented within the terrestrial portion of the APE (**Table 6**). Site 45IS303 is a historic debris concentration with two loci. Locus 1 (Field ID. 010512/01) was identified during the pedestrian survey portion of the survey. It consists of a surface scatter of historic refuse. One STP (CO7 on **Figure 5**) was excavated in the center of this concentration. No cultural materials were identified within this STP, resulting in a preliminary conclusion that the historic debris is concentrated solely on the surface. Locus 2 (Field ID. 010512/02) was also identified during the pedestrian survey portion of this investigation while a metal detector was in use. A total of 30 cultural materials were observed near the surface in a slight depression on the front lawn northwest of the Schulke House/Steadman House. A summary of the site and associated cultural materials is presented below.

Site 45IS304 (Field ID. 010512/03) is a pre-contact lithic material site. This site is located immediately behind the active intertidal beach zone, approximately 15 meters (49 feet) upslope from the mean sea level. A total of 3 large discoidal, cortical flakes were observed within the Project's APE. A summary of the site and associated cultural materials is presented below.

Archaeological Resources:
☒ Listed Below

Table 6. Archaeological Sites Documented within APE

Site Number	Description	Location	NRHP Eligibility
45IS303	Historic Debris Scatter/Concentration	13254 SR 20 Coupeville, WA	Eligible
010512/03	Pre Contact Lithic Material	13254 SR 20 Coupeville, WA	Eligible

Source: ESRI (2011)

N

0 10 20 40 Meters

Pilot Tidal Energy Project

1-915-17347-0

Legend

- Positive Shovel Test Probe
- Negative Shovel Test Probe
- Surface Debris
- Site Boundary
- Proposed Driveway
- Proposed Building
- Proposed Buried Transmission Line
- APE Boundary

Figure 5

Survey Results

amec

Site Number 45IS303 (Field ID. 010512/01)

This historic debris concentration is associated with an historic period occupation of the Project's APE during the early 20th century. Amos E. Schulke is responsible for the construction of the bungalow-style house in 1910. Mr. Schulke enlisted with the Regular Army at Fort Casey, Washington, in 1915 and spent 4 years of service eventually attaining the rank of First Sergeant before his honorable discharge. He lived at the house, located just outside the Fort Casey Coastal Artillery Command with his wife Orpha and sons Amos and Homer. The site consists of two loci of historic refuse. The cultural materials observed within the two loci indicate a direct correlation to the time period when the Schulke Family resided there. The following is a summary of each loci associated with site 45IS303.

Locus 1 was identified after the excavation of STP CO-7 (**Figure 5**). No cultural materials were observed within the STP, however many cultural materials were observed within a 12- by 9-meter (40- by 30-foot) area on the surface around STP CO-7. The northern edge of the concentration is approximately 18 meters (59 feet) south of the southern elevation of the garage. **Table 7** is an inventory of the artifacts observed at Locus 1.

The cultural materials identified at Locus 1 included a wide variety of glass including: amethyst and aqua bottle glass fragments, stoneware fragments, and one complete clear glass bottle with amethyst tint (**Photograph 4**). The bottle is embossed with the words "Whittemore's Polish" around the widest portion of the container and just below the neck. A single "I" is stamped on the base of the bottle.

Photograph 4. Whittemore's Polish bottle (circa 1880-1916) found in Locus 1 of 45IS303.

Also observed was one 1918 rifle shell with a headstamp which reads “R A” at the top and “18” at the bottom of the head. This is a standard military issue Remington Arms Company stamp on ammunitions made for the military. During this period of manufacture, the number present on the headstamp refers to the date of manufacture. One Winchester shotgun shell was also found within the site boundary. The date of manufacture for this shell is unknown.

Table 7. Artifacts observed at Locus 1 (Site 45IS303).

Site #	Location	Material Type	Artifact Type	Comments	Date Range
45IS303	Locus 1	Amethyst Glass	Bottle base fragment		1880-1916
45IS303	Locus 1	Aqua Glass	Bottle body fragment		
45IS303	Locus 1	Clear Glass	Bottle base fragment	"5718W / 20 (O-Diamond-I) 1 / 6"	
45IS303	Locus 1	Stoneware	pot fragments		
45IS303	Locus 1	Stoneware or Refined Earthenware	Plate rim fragment	glazed, scalloped edges, and floral molded pattern	
45IS303	Locus 1	Amethyst Glass	Bottle (whole)	"Whittemore's Polish" on shoulder, "1" on base	1880-1916
45IS303	Locus 1	Brown Glass	Bottle base fragment	"N P B"	
45IS303	Locus 1	metal	Tin can fragments		
45IS303	Locus 1	Aqua Glass	Mason jar rim fragment		
45IS303	Locus 1	Brass	Rifle cartridge casing	"RA / 18"	1918
45IS303	Locus 1	Clear Glass	Bottle neck and finish fragment		
45IS303	Locus 1	Clear Glass	Bottle body fragments (2)		
45IS303	Locus 1	Green Glass	Bottle body fragment		
45IS303	Locus 1	Amber Glass	Bottle body fragment	…"CO"… with partial logo	
45IS303	Locus 1	Amethyst Glass	Bottle base fragment	"1 / B"	1880-1916
45IS303	Locus 1	Clear Glass	Bottle finish fragment		
45IS303	Locus 1	Clear Glass	Bottle neck and finish fragment		
45IS303	Locus 1	metal	Shotgun shell	"Winchester / Made in USA / No 20 / Super Speed"* S in super and speed is reused - only 1 "s" is used on this line. Paper fragments inside.	

A second concentration (Locus 2) was identified while conducting pedestrian survey with a metal detector. This concentration was recorded over an area approximately 2 by 2 meters (6 by 6 feet). The materials appear to be a dumping ground of refuse. This second concentration was located approximately 7 meters (35 feet) west of the northwest corner of the present garage on the property. The concentration of artifacts was observed on the front lawn of the property under the grass in a slight depression the same size as the concentration listed above. One possibility is that this depression represents the remains of a privy location filled in with refuse and soil. AMEC staff was unable to confirm this theory. The cultural materials were all observed within very close proximity to each other within Locus 2. Artifacts ranged from domestic materials such as ceramic and glass fragments, machine-cut cow bones, metal

fragments from a bed frame and oven panels, one yellow glass bead and one military uniform eagle button (**Photo 5**).

Photograph 5. Military General Issue Button (manufactured 1854-1885) observed at Locus 2 of site 010512/01.

Table 8. Artifacts observed at Locus 2 (Site 45IS303).

Site #	Location	Artifact Class	Material Type	Comments	Date Range
45IS303	Locus 2	brass?	Metal	Military general issue button: eagle holding 3 arrows and olive branch with shield	1854-1885
45IS303	Locus 2	Yellow Glass	Glass	Yellow glass bead	
45IS303	Locus 2	Whiteware	Ceramic	Whiteware: unidentifiable fragments (+/- 10)	
45IS303	Locus 2	Clear Glass, Aqua Glass	Glass	Clear glass, aqua glass: window and bottle fragments (+/- 10)	
45IS303	Locus 2	Bone	Faunal	Machine cut mammal bone: rib, femur, vertebrae, and more	
45IS303	Locus 2	metal	Metal	Metal claw footing	
45IS303	Locus 2	Metal	Decorative metal bracket	Decorative bracket	

The decision to lump both historic debris concentrations into one site boundary was derived on the basis that both concentrations represent materials from the early 20th century (in addition to late 19th century) and are likely the result from the Schulke family occupation.

Site Number 45IS304 (Field ID. 010512/03)

45IS304 is a pre-contact lithic material site located along the shoreline immediately above the mean sea level zone of Keystone Spit. A total of 3 large discoidal, cortical flakes were observed within an area approximately 5 by 5 meters (16 by 16 feet) in size. This active intertidal zone is a steep incline of beachfront which is heavily subjected to tidal forces (**Photograph 6**). The highest elevation point in this vicinity of shoreline is a tidal-formed ridge positioned parallel along Keystone Spit which is approximately 12 feet above the average sea level zone. The landscape plateaus beyond this tidal ridge reaching north across a mostly level glacially-formed spit toward the marshy shores of Crockett Lake. The concentration of artifacts is located on the landward side of this tidal ridge indicating that these artifacts are less affected by the tidal forces than the cobbles on the seaward side of the ridge.

Photograph 6. Overview of marine shoreline within APE. A relatively steep slope is present in the intertidal zone. Atop this slope, driftwood collects along the ridgeline of the tidal shelf. View is east.

Two of the flakes are of a material type likened to Crystalline Volcanic Rock (CVR) (**Photograph 7**) such as basalt and/or dacite. These are extrusive igneous rocks commonly found in western Washington. Both represent flakes removed from moderately sized beach cobbles and have 100 percent dorsal cortex. Additionally, one of these flakes shows signs of possible use-wear along the distal end. Use-wear can result in micro-chips or hinge fractures of stone which pop off the edge of the tool. This type of use is indicative of working perpendicular with the edge on hard material or with force being directly into the body of the tool. The third flake is of quartzite material. Quartzite is not typically found in archaeological stone tool processing sites, but is certainly present in many sites across the region. The quartzite flake contains 100 percent dorsal cortex and is discoidal in shape. One short extent (~110 mm) of the flakes edge shows continuous, alternating retouch. Due to its depositional context, the artifact is

Photograph 7. Lithic flakes from site 010512/03

extremely weathered and only rounded edges remain from a tool that would have been expediently manufactured to produce a tool with a sharp, slightly serrated edge.

Additional precontact lithic material was observed along the beach to the west of this concentration (ID # 011512/04, **Figure 5**). A pedestrian beach survey was performed in an attempt to determine a boundary of the lithic material. Five additional pieces of lithic debris were observed approximately 85 meters (279 feet) west of the documented concentration. The artifacts were observed over an area extending approximately 40 meters (131 feet). Predominantly, the material was observed on the land-side of the tidal ridge along the beach, however one artifact was observed on the seaward side below the tidal ridge. This concentration of lithic material was not formally documented as it is located outside of the current Project's APE.

Buildings or Structures:
☐ None
☒ Listed Below

Table 9. Historic Buildings Recorded within or adjacent to the APE

Building Name	Address	Description	NRHP Eligibility
Schulke House/ Steadman House	13254 SR 20 Coupeville, WA	1910 Vernacular	Eligible
Reynolds House	13230 SR 20, Coupeville, WA	1928 Vernacular	Not Eligible

There are two buildings within the APE which have been evaluated for this Project (**Table 9**). The Schulke House/Steadman House is within the parcel which includes the direct APE. The Reynolds House is located one adjacent tax parcel away in the indirect APE. Both of these houses and associated outbuildings were documented. A brief description of each house is described below.

The building at 13254 State Route 20 was constructed in 1910. It is a 1.5-story, rectangular plan, vernacular house with elements of the National Farm House style. It features a side-gabled, medium-pitched, composition-shingled roof with one wide shed dormer in the front elevation and two gabled dormers in the rear elevation. It is clad with wood shingles, with horizontal clapboard skirting, endboards, and is built on a poured concrete foundation. The main window style features picture windows with wood sashes and lug sills. Other windows include double-hung windows with metal sashes and wood lug sills. The front entry is located centrally on the north elevation, above a wooden deck. It has a decorative 8-panel wood door with a single light in the upper half. Additionally, there is an addition across the rear elevation that has an irregular belcast gable-roof that extends down from the main roof, creating an irregular roof-line. This may have originally been constructed as an open porch, and later enclosed. The windows on this portion of the building are metal-framed, fixed windows with false muntins.

A garage, constructed in 1910, is also on the property, located southeast of the house. The garage has an irregular plan and wood clapboard siding with endboards. The garage appears to have once been two separate dwellings which were joined together with a third brick structure. The wood shingle, medium-pitched, side-gabled roof has two false gables on the east and west ends of the building. It has a brick chimney on the eastern gable and a window with metal sashes. The addition extends out on the east and south elevations, altering the massing, materials, and workmanship of the original structures.

The property is located within the Ebey's Landing National Historical Reserve (also known as the Central Whidbey Island Historic District), between Crockett Lake and Admiralty Bay about 0.5 miles east of Fort Casey. The original owner was an Army Staff Sergeant named Amos Schulke. The building was owned by the Steadman family when it was recorded in 1972 and accounts for the Schulke/Steadman House name. This property is a contributing element to the District which is listed in the NRHP under criterion A due to its association with the Ebey's Landing National Historical Reserve community development phase (1871 – 1910). This property exhibits integrity of location, setting, workmanship, feeling, and association; however, the addition has altered the massing and roofline of the building.

The second building at 13230 State Route 20 was constructed in 1928. It is a one-story rectangular vernacular style house style. It features a side-gabled, medium-pitched, shake roof, with wood shingle cladding, and a poured concrete foundation. The main window style features metal-sashed, sliding windows. The front entry is located on the west elevation, offset left, and features a 10-light, wood door. A brick chimney offset-right on the north elevation appears to be much newer than 1928.

The building is located within the Ebey's Landing National Historical Reserve, between Crockett Lake and Admiralty Bay about one half mile east of Fort Casey. This property was not listed as

a contributing element in the CWIHD, nor was it listed with the ELNHR. This property exhibits integrity of location, design, setting, workmanship, feeling, and association; however it lacks distinction and does not embody the characteristics of a type, period, or method of construction. As an individual resource, this property is not eligible for listing in the NRHP under Criterion C.

Conclusions

The following are: ☐ Determinations ☒ Recommendations

☐ No Historic Properties Affected
☒ No Adverse Effects to Historic Properties
☐ Adverse Effects to Historic Properties

Other Conclusions and Recommendations:

The following recommendations are advised based on the proposed construction activities. It is AMEC's recommendation that site 45IS304 will not be impacted due to the fact that the HDD will be boring below the surface at a depth which will not impact this sparse scatter of lithic material.

The proposed Project will not have any direct impacts to the Schulke/Steadman House. Indirect impacts, such as temporary vibration and noise from construction, will not diminish the building's association with ELNHR.

Attachments

☒ Location Map
☒ APE Map
☒ Shovel Test/Transect Map
☒ Historic Property Inventory Form(s)
☒ Archaeological Inventory Form(s)
☐ EZ-1 or EZ-2 Form(s)
☒ Photos
☒Other: References

Certification

We certify that:

- We are AMEC Environment & Infrastructure Cultural Resources Specialists meeting all applicable state and federal professional qualification standards;
- We have reviewed, evaluated, and documented the methods and observations prepared here; and
- This report is accurate to the best of our knowledge.

Name: Jason B. Cooper

Name: Tim Gerrish

Date: February 20, 2012

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STATE OF WASHINGTON
ARCHAEOLOGICAL SITE INVENTORY FORM

Smithsonian Number: 45IS303

***County:** Island

***Date:** February 17, 2012 ***Compiler:** Tyler McWilliams and Tim Gerrish

Location Information Restrictions *(Yes/No/Unknown)***:** Yes **Human Remains?** no

SITE DESIGNATION

Site Name: Schulke/Steadman House Refuse

Field/ Temporary ID: 010512/01 and 010512/02

***Site Type(s):** Historic Debris Scatter

SITE LOCATION

***USGS Quad Map Name(s):** Coupeville

***Legal Description: T** 31 North **R** 1 East **Section(s):** 22

Quarter Section(s): NE

UTM: Zone 10 **Easting** 524,876 **Northing** 5,334,215 (NAD83)

Elevation (m/ft): 3 meters / 10 feet

Other Maps: **Type:**

Scale: **Source:**

Drainage, Major: **Drainage, Minor:** **River Mile:**

Aspect: south **Slope:** 0

Location Description** *(General to Specific):** The site is located on Whidbey Island, three miles south of Coupeville. It lies east of Fort Casey on a thin strip of land known as Keystone Spit between Crockett Lake and Admiralty Bay in the yard of a privately owned home on the south side of State Route (SR) 20 (**Figure 1**).

Directions** *(For Relocation Purposes):** From Clinton, Washington drive northwest on SR 525 for 22 miles. Turn left onto SR 20 and head west for three miles. The site is located in a private yard of a house at the 13000 block of SR 20, on the south side of the road.

Mandatory Information for Official Smithsonian Number designation. *Revised 10/2010*

SITE DESCRIPTION

***Narrative Description:** The site 45IS303 is a historic debris scatter that is associated with the nearby Schulke/Steadman House. This historic debris concentration is associated with an historic period occupation of the Project parcel during the early 20th century. Amos E. Schulke is responsible for the construction of the bungalow-style house in 1910. The site consists of two loci of historic refuse. The cultural materials observed within the two loci indicate a direct correlation to the time period when the Schulke family resided there.

***Site Dimensions:**

*__Length:__ 60 meters *__Direction:__ N-S x *__Width:__ 30 meters *__Direction:__ E-W

*__Method of Horizontal Measurement:__ GIS

*__Depth:__ up to 40 centimeters * **Method of Vertical Measurement:** tape measure

Vegetation** *(On Site):** grass

Local: Saltwater Shoreline (Atkinson and Sharpe 1985)

Regional: *Tsuga heterophylia* Zone

Landforms *(On Site)***:** Keystone Spit

Water Resources *(Type)***:** Crockett Lake **Distance:** 50 meters **Permanence:** permanent

CULTURAL MATERIALS AND FEATURES

***Narrative Description:** The site is a historic debris concentration and includes two loci (010512/01 and 010512/02) and two positive shovel test probes (C02 and C06) (**Figure 2**). Materials observed include a brass military button which dates from 1854-1885, large machine-processed mammal bones, and various types of glass, metal, and ceramic debris. **Table 1** details what artifacts were recorded on the site and where they were observed.

Mr. Schulke enlisted with the Regular Army at Fort Casey, Washington in 1915 and spent four years of service eventually attaining the rank of First Sergeant before his honorable discharge. He lived at the house, located just outside the Fort Casey Coastal Artillery Command with his wife Orpha and son's Amos and Homer. [See continuation sheet]

***Method of Collection:** No artifacts were collected.

Location of Artifacts** *(Temporary/Permanent):** N/A

SITE AGE

***Component:** Historic *__Dates:__ 1900-1918 ***Dating Method:** Diagnostic artifacts

Phase: **Basis for Phase Designation:**

SITE RECORDERS

Observed by: Tim Gerrish and Tyler McWilliams ***Date Recorded:** 1/5/2012

Recorded by** *(Professional Archaeologist):** Jason Cooper, M.A., R.P.A

11810 North Creek Parkway North

Bothell, Washington 98011

425.368.1000

jason.cooper@amec.com

SITE HISTORY

Previous Archaeological Work** *(Done at Site):** none

LAND OWNERSHIP

***Owner:** Valentine, Jessie L.

***Address:** 4221 Shokowakan Road, Clinton WA 98236-8731

***Tax Lot/ Parcel No:** 231387

RESEARCH REFERENCES

Items/Documents Used In Research** *(Specify):**

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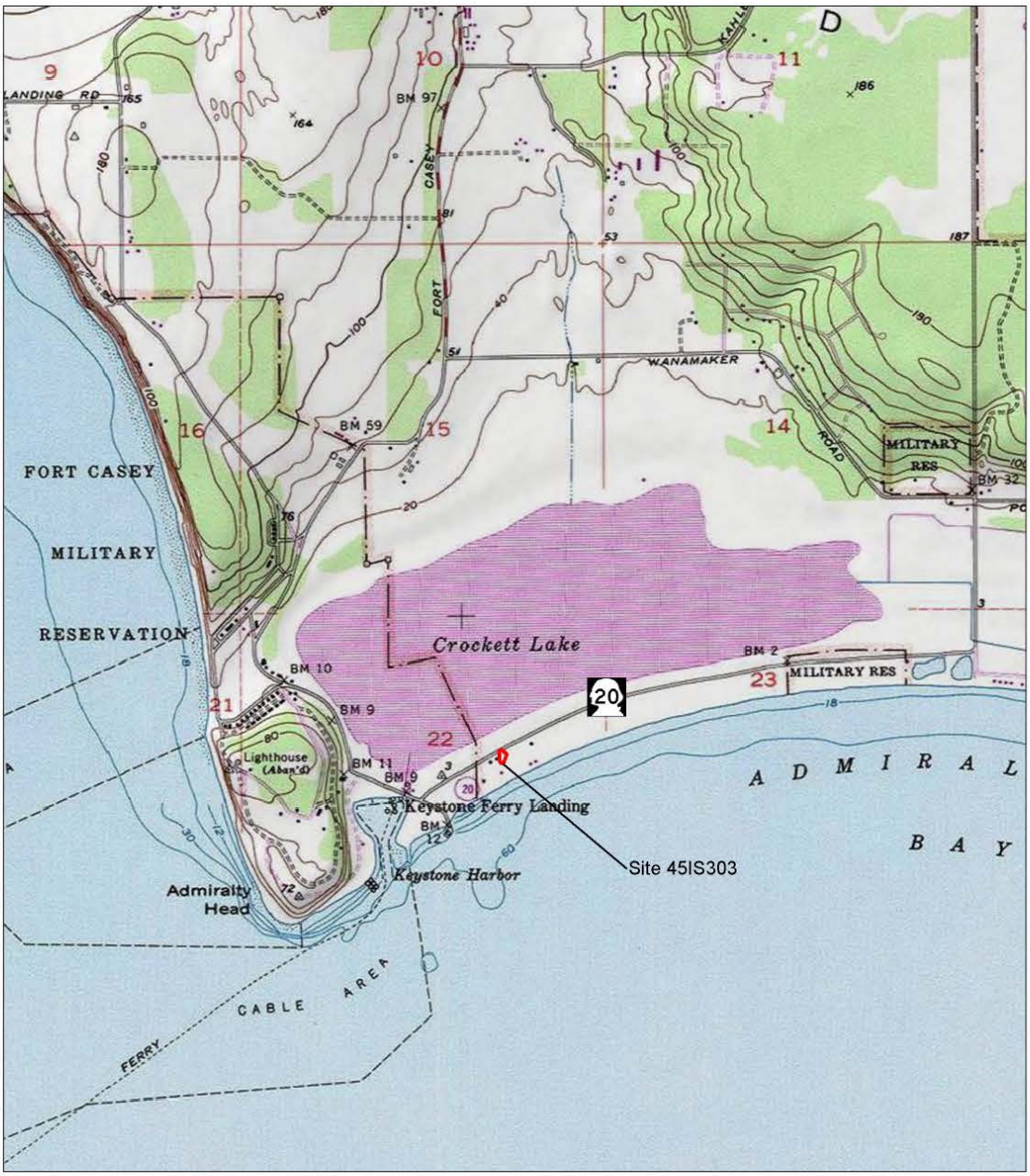
USGS MAP



Source: USGS 7.5' Topographic Map, Coupeville Quadrangle (National Geographic Society 2011) Section 22 of Township 31 N, Range 1 E, W.M.

N

0 250 500 1,000 Meters

Legend

Site Boundary

Figure 1

USGS Map for Site 45IS303

Pilot Tidal Energy Project

1-915-17347-0

amec

SKETCH MAP

Source: ESRI (2011)

N

0 5 10 20 Meters

Pilot Tidal Energy Project

1-915-17347-0

Legend

- Positive Shovel Test Probe
- Negative Shovel Test Probe
- Site Boundary

Surface Artifact Type

- Ceramic
- Glass
- Metal

Figure 2

Sketch Map for Site 45IS303

amec

PHOTOGRAPH(S)

Photo 1: Site overview, Locus 2, facing south.

Photo 2: Ceramic and metal debris at Locus 1, trowel for scale.

PHOTOGRAPH(S)

Photo 3: Front and back of military button with centimeter scale.

Photo 4: "Whittemore's Polish" amethyst glass bottle

CONTINUATION/ ADDENDUM SHEET

Cultural Materials and Features (continued)

Table 1. Artifact Details

Location	Artifact Description	Date Range
Locus 1	Amethyst glass bottle base fragment	1880-1916*
Locus 1	Aqua glass bottle body fragment	
Locus 1	Clear glass bottle base fragment "5718W / 20 (O-Diamond-I) 1 / 6"	
Locus 1	Stoneware pot fragments	
Locus 1	Stoneware or refined earthenware plate rim fragment glazed, scalloped edges, and floral molded pattern	
Locus 1	Amethyst glass bottle (whole) "Whittemore's Polish" on shoulder, "1" on base	1880-1916*
Locus 1	Brown glass bottle base fragment "N P B"	
Locus 1	Tin can fragments	
Locus 1	Aqua glass Mason jar rim fragment	
Locus 1	Rifle cartridge casing "RA / 18"	1918***
Locus 1	Clear glass bottle neck and finish fragment	
Locus 1	Clear glass bottle body fragments (2)	
Locus 1	Green glass bottle body fragment	
Locus 1	Amber glass bottle body fragment …"CO"… with partial logo	
Locus 1	Amethyst glass bottle base fragment "1 / B"	1880-1916*
Locus 1	Clear glass bottle finish fragment	
Locus 1	Clear glass bottle neck and finish fragment	
Locus 1	Shotgun shell "Winchester / Made in USA / No 20 / Super Speed"* S in super and speed is reused - only 1 "s", paper fragments inside.	
Locus 2	Military general issue button: eagle holding 3 arrows and olive branch with shield	1854-1885**
Locus 2	Yellow glass bead	
Locus 2	Whiteware: unidentifiable fragments (+/- 10)	
Locus 2	Clear glass, aqua glass: window and bottle fragments (+/- 10)	
Locus 2	Machine cut mammal bone: rib, femur, vertebrae, and more	
Locus 2	Metal claw footing	
Locus 2	Decorative metal bracket	
STP C02	Clear glass 1 fragment	
STP C06	Clear glass 4 bottle fragments (0-30 cm)	
STP C06	Brown glass 1 bottle fragment (0-30 cm)	
STP C06	Whiteware 1 plate fragment (0-30 cm)	
STP C06	Clear glass 1 bottle fragment (30-40 cm)	

*Munsey (1970)
** Weisz (2004), Woodward (1989), Wykoff (1984)
***Curtis (1996)

STATE OF WASHINGTON
ARCHAEOLOGICAL SITE INVENTORY FORM

Smithsonian Number: 45IS304

County: Island

Date: February 17, 2012 **Compiler:** Tyler McWilliams and Tim Gerrish

Location Information Restrictions *(Yes/No/Unknown)***:** Yes **Human Remains?** no

SITE DESIGNATION

Site Name: Keystone Beach Lithic Site

Field/ Temporary ID: 010512/03

Site Type(s): Pre Contact Lithic Material

SITE LOCATION

USGS Quad Map Name: Coupeville, Washington 7.5" series

Legal Description: T 31 North **R** 1 East **Section:** 22

Quarter Section(s): NE

UTM: Zone 10, **NAD** 83 **Easting** 524,876 **Northing** 5,334,215

Elevation (m/ft): 3.6 meters/12 feet

Other Maps: **Type:**

Scale: **Source:**

Drainage, Major: Admiralty Bay **Drainage, Minor:**

Aspect: South **Slope:** 0

Location Description *(General to Specific)***:** The site is located on Whidbey Island, three miles south of Coupeville. It lies east of Fort Casey on a thin strip of land known as Keystone Spit between Crockett Lake and Admiralty Bay on the waterfront of a privately owned home on the south side of State Route 20 (SR 20). Artifacts were observed amongst the driftwood just above the beach slope (**Figures 1 and 2**).

Directions *(For Relocation Purposes)***:** From Clinton, Washington drive northwest on State Route 525 (SR 525) for 22 miles. Turn left onto SR 20 and head west for three miles. The site is located in the private yard of a house at the 13000 block of SR 20, on the south side of the road. It is situated at the interface of the beach and driftwood.

Mandatory Information for Official Smithsonian Number designation. *Revised 10/2010*

SITE DESCRIPTION

Narrative Description: The site is a precontact lithic material site located along the shoreline immediately above the mean sea level zone of Keystone Spit. A total of 3 large discoidal cortical flakes were observed within an area approximately 10 x 5 meters in size. This active intertidal zone is a steep incline of beachfront which is heavily subjected to tidal forces. The highest elevation point in this vicinity of shoreline is a tidal-formed ridge positioned parallel along Keystone Spit which is approximately 3.6 meters (12 feet) above the average sea level zone. The landscape plateaus beyond this tidal ridge reaching north across a mostly level glacially-formed spit toward the marshy shores of Crockett Lake. The concentration of artifacts is located on the landward side of this tidal ridge, indicating that these artifacts are less affected by the tidal forces than the cobbles on the seaward side of the ridge.

Site Dimensions:

Length: 10 meters **Direction:** E-W x **Width:** 5 meters **Direction:** N-S

Method of Horizontal Measurement: GIS

Depth: unknown **Method of Vertical Measurement:** n/a

Vegetation *(On Site)***:** Grass **Local:** Saltwater Shoreline

Regional: *Tsuga-heterophylia* Zone (Franklin and Dyrness 1988)

Landforms *(On Site)***:** Active beach **Local:** Keystone Spit

Water Resources *(Type)***:** Crockett Lake **Distance:** 150 meters **Permanence:** permanent

CULTURAL MATERIALS AND FEATURES

Narrative Description: Two of the flakes are of a material type likened to Crystalline Volcanic Rock (CVR) such as basalt and/or dacite. These are extrusive igneous rocks commonly found in western Washington. Both represent flakes removed from moderately sized beach cobbles and have 100 percent dorsal cortex. Additionally, one of these flakes shows signs of possible use-wear along the distal end. Use of stone tools often results in micro-chips or hinge fractures of stone which pop off the edge of the tool. This type of use is indicative of working perpendicular with the edge on hard material or with force being directly into the body of the tool. The third flake is of quartzite material. The quartzite flake contains 95 percent dorsal cortex and is discoidal in shape. One short extent (~110 mm) of the flakes edge shows continuous, alternating retouch. The artifact is extremely weathered and only rounded edges remain from a tool that would have been expediently manufactured to produce a tool with a sharp, slightly serrated edge. *See Continuation/Addendum Sheet.*

Method of Collection: No artifacts were collected.

Location of Artifacts *(Temporary/Permanent)***:** N/A

SITE AGE

Component: Pre Contact **Dates:** Unknown **Dating Method:** n/a

Phase: **Basis for Phase Designation:**

SITE RECORDERS

Observed by: Tim Gerrish and Tyler McWilliams

Date Recorded: 1/5/2012

Recorded by *(Professional Archaeologist)***:** Jason Cooper, M.A., R.P.A

11810 North Creek Parkway North

Bothell, Washington 98011

425.368.1000

jason.cooper@amec.com

SITE HISTORY

Previous Archaeological Work *(Done at Site)***:** No previous investigations have been conducted at this site.

LAND OWNERSHIP

Owner: Valentine, Jessie L.

Address: 4221 Shokowakan Road, Clinton WA 98236-8731

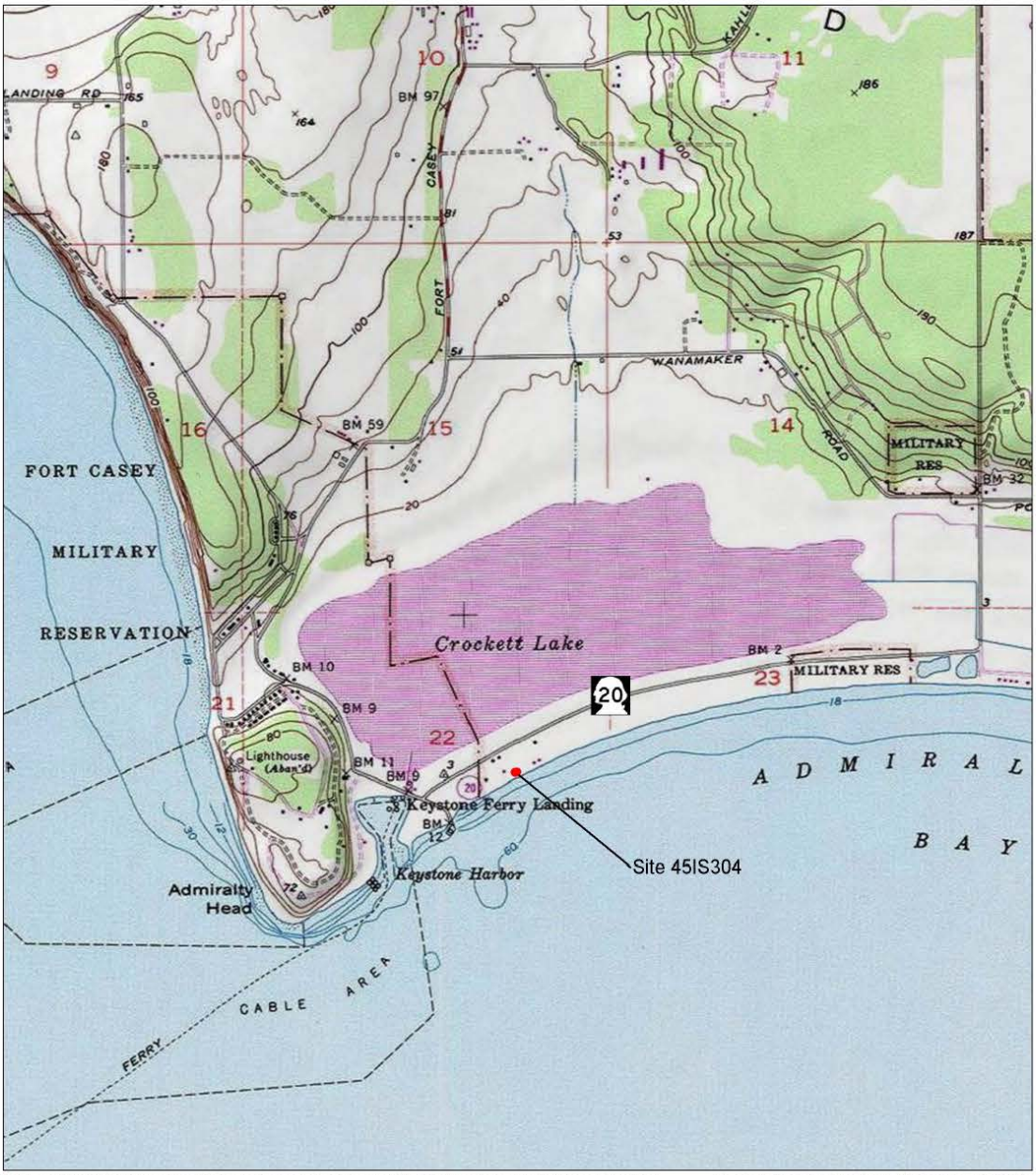
Tax Lot/ Parcel No: 231387

RESEARCH REFERENCES

Items/Documents Used In Research *(Specify)***:**

Franklin, J.F. and C.T. Dyrness
1988 Natural Vegetation of Oregon And Washington. Oregon State University Press, Corvallis, Oregon.

USGS MAP



Source: USGS 7.5' Topographic Map, Coupeville Quadrangle (National Geographic Society 2011) Section 22 of Township 31 N, Range 1 E, W.M.

N

0 250 500 1,000 Meters

Legend

Site Boundary

Figure 1

USGS Map for Site 45IS304

Pilot Tidal Energy Project

1-915-17347-0

amec

SKETCH MAP

Source: ESRI (2011)

N

0 10 20 40 Meters

Legend

- Positive Shovel Test Probe (recorded as a separate site 45IS303)
- Negative Shovel Test Probe
- Site Boundary

Figure 2

Sketch Map for Site 45IS304

Pilot Tidal Energy Project

1-915-17347-0

amec

PHOTOGRAPH(S)

Photo 1: Site overview, facing east. Site is located within and above the driftwood.

Photo 2: Lithic debris.

PHOTOGRAPH(S)

Photo 3: Retouched flake.

CONTINUATION/ ADDENDUM SHEET

CULTURAL MATERIALS AND FEATURES *continued*

Additional precontact lithic material was observed along the beach to the west of site 45IS304. This lithic material is not located within the current Project's APE; therefore we did not record the material as a site. Five pieces of lithic debris were observed in this area which is approximately 85 meters west of site 45IS304. The artifacts were observed over an area extending approximately 40 meters. Predominantly, the material was observed on the land-side of the tidal ridge along the beach, however one artifact was observed on the seaward side below the tidal ridge.

Historic Inventory Report

Location

Field Site No. DAHP No.

Historic Name: Schulke House/Steadman House

Common Name: Valentine House

Property Address: 13254 SR 20, COUPEVILLE, WA 98239

Comments:

Tax No./Parcel No. S6370-00-61005-0

Plat/Block/Lot CHICAGO LOTS 5, 6 and 7 BLK 61 TGW N/2 ADJ VAC WA

Acreage 0.68973992

Supplemental Map(s)

Township/Range/EW	Section	1/4 Sec	1/4 1/4 Sec	County	Quadrangle
T31R01E	22			Island	COUPEVILLE

Coordinate Reference

Easting: 1111704

Northing: 1038543

Projection: Washington State Plane South

Datum: HARN (feet)

Identification

Survey Name: Pilot Tidal Energy Project Date Recorded: 01/05/2012

Field Recorder: Tyler McWilliams, Tim Gerrish

Owner's Name: Valentine, Jessie L.

Owner Address: 4221 Shokowakan Road

City: Clinton State: WA Zip: 98236-8731

Classification: Building

Resource Status: Comments:
Survey/Inventory

Within a District? Yes

Contributing? Yes

National Register: Central Whidbey Island Historic District

Local District:

National Register District/Thematic Nomination Name: Central Whidbey Island Historic District

Eligibility Status: Not Determined - SHPO

Determination Date: 1/1/0001

Determination Comments:

Description

Historic Use: Domestic - Single Family House

Current Use: Domestic - Single Family House

Plan: Rectangle

Stories: 1.5

Structural System: Braced Frame

Changes to Plan: Moderate

Changes to Interior: Unknown

Changes to Original Cladding: Intact

Changes to Windows: Slight

Changes to Other: Unknown

Other (specify):

Style:	Cladding:	Roof Type:	Roof Material:
Vernacular	Wood - Clapboard	Gable - Side Gable	Asphalt / Composition - Shingle

Foundation:	Form/Type:
Concrete - Poured	Single Family - Side Gable

Narrative

Study Unit

Other

Date of Construction: 1910 Built Date

Builder:

Engineer:

Architect:

Property appears to meet criteria for the National Register of Historic Places: Yes

Property is located in a potential historic district (National and/or local): Yes

Property potentially contributes to a historic district (National and/or local): Yes

Statement of Significance: The property is located within the Ebey's Landing National Historical Reserve (also known as the Central Whidbey Island Historic District), between Crockett Lake and Admiralty Bay about one half mile east of Fort Casey. The original owner was an Army Staff Sergeant named Amos Schulke. This property is a contributing element to the District and is eligible for listing on the National Register of Historic Places under criterion A due to its association with the Ebey's Landing National Historical Reserve community development phase (1871-1910).

This property exhibits integrity of location, setting, workmanship, feeling, and association; however, the addition has altered the massing and roofline of the building. As an individual resource, this property is not eligible for listing in the National Register of Historic Places under Criterion C.

Description of Physical Appearance:	The building at 13254 State Route 20 was constructed in 1910. It is a 1.5 story, rectangular plan, vernacular house with elements of the National Farm House style. It features a side-gabled, medium-pitched, composition-shingled roof with one wide shed dormer in the front elevation and two gabled dormers in the rear elevation. It is clad with wood shingles, with horizontal clapboard skirting, endboards, and is built on a poured concrete foundation. The main window style features picture windows with wood sashes and lug sills. Other windows include double-hung windows with metal sashes and wood lug sills. The front entry is located centrally on the north elevation, above a wooden deck. It has a decorative 8-panel wood door with a single light in the upper half. Additionally, there is an addition across the rear elevation that has an irregular belcast gable-roof that extends down from the main roof, creating an irregular roof-line. This may have originally been constructed as an open porch, and later enclosed. The windows on this portion of the building are metal-framed, fixed windows with false muntins. A garage, constructed in 1910, is also on the property, located southeast of the house. The garage has an irregular plan and wood clapboard siding with endboards. The garage appears to have once been two separate dwellings which were joined together with a third brick structure. The wood shingle, medium-pitched, side-gabled roof has two false gables on the east and west ends of the building. It has a brick chimney on the eastern gable and a window with metal sashes. The addition extends out on the east and south elevations, altering the massing, materials, and workmanship of the original structures.
Major Bibliographic References:	Cook, J.J. 1972 Central Whidbey Island Historic District-National Register of Historic Places Inventory Nomination Form. U.S. Department of the Interior, National Park Service.

Photos

North elevation
2012

North and West elevations
2012

East elevation
2012

South elevation
2012

North elevation of garage
2012

South elevation of garage
2012

Historic Inventory Report

Location

Field Site No. DAHP No.

Historic Name:

Common Name: Reynolds House

Property Address: 13230 State Route 20, Coupeville, WA 98239

Comments:

Tax No./Parcel No. 231403

Plat/Block/Lot

Acreage

Supplemental Map(s)

Township/Range/EW	Section	1/4 Sec	1/4 1/4 Sec	County	Quadrangle
T31R01E	22			Island	COUPEVILLE

Coordinate Reference

Easting: 1111586

Northing: 1038507

Projection: Washington State Plane South

Datum: HARN (feet)

Identification

Survey Name: Pilot Tidal Energy Project Date Recorded: 01/05/2012

Field Recorder: Tyler McWilliams, Tim Gerrish

Owner's Name: Reynolds, Lynn D.

Owner Address: 2418 179th Ave. E.

City: Lake Tapps State: WA Zip: 98391-9481

Classification: Building

Resource Status: Comments:
Survey/Inventory

Within a District? Yes

Contributing? No

National Register: Central Whidbey Island Historic District

Local District:

National Register District/Thematic Nomination Name: Central Whidbey Island Historic District

Eligibility Status: Not Determined - SHPO

Determination Date: 1/1/0001

Determination Comments:

Description

Historic Use:

Current Use: Domestic - Single Family House

Plan: Rectangle

Stories: 1

Structural System: Braced Frame

Changes to Plan: Intact

Changes to Interior: Unknown

Changes to Original Cladding: Intact

Changes to Windows: Moderate

Changes to Other: Slight

Other (specify): Brick chimney appears new.

Style:	Cladding:	Roof Type:	Roof Material:
Vernacular	Wood	Gable - Side Gable	Wood - Shake

Foundation:	Form/Type:
Concrete - Poured	Single Family - Side Gable

Narrative

Study Unit

Other

Date of Construction: 1928 Built Date

Builder:

Engineer:

Architect:

Property appears to meet criteria for the National Register of Historic Places: No

Property is located in a potential historic district (National and/or local): Yes

Property potentially contributes to a historic district (National and/or local): No

Statement of Significance: The building is located within the Ebey's Landing National Historical Reserve (ELNHR), between Crockett Lake and Admiralty Bay about one half mile east of Fort Casey. This property was not listed as a contributing element in the Central Whidbey Island Historic District, nor was it listed with the ELNHR. This property exhibits integrity of location, design, setting, workmanship, feeling, and association; however it lacks distinction and does not embody the characteristics of a type, period, or method of construction. As an individual resource, this property is not eligible for listing in the NRHP under Criterion C.

Description of Physical Appearance: The building at 13230 State Route 20 was constructed in 1928. It is a 1 story rectangular vernacular style house style. It features a side-gabled, medium-pitched, shake roof, with wood shingle cladding, and a poured concrete foundation. The main window style features metal-sashed, sliding windows. The front entry is located on the west elevation, offset left, and features a 10-light, wood door. A brick chimney offset-right on the north elevation appears to be much newer than 1928.

Major Bibliographic References:

Cook, J.J.

1972 Central Whidbey Island Historic District-National Register of Historic Places Inventory Nomination Form. U.S. Department of the Interior, National Park Service.

Photos

North and West elevations
2012

South and East elevations
2012

August 3, 2011

Dr. Allyson Brooks
State Historic Preservation Officer
Dept. of Archaeology and Historic Preservation
1063 South Capitol Way, Suite 106
Olympia, WA 98501

RE: Revised Proposed Area of Potential Effects and Finding of No Effect for Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Dr. Brooks:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District submitted a request for concurrence with our proposed Area of Potential Effects (APE) in February, 2011 and concurrence was granted by your department. Recent changes to the proposed turbine locations and cable route have resulted in a revised APE. The District is seeking your concurrence on our revised proposed APE.

Enclosed you will find the following materials in support of our present consultation effort:

(1) USGS topographic quadrangle depicting the location of the project
(2) Map of the project location depicting the terrestrial components including proposed vault location and horizontal directional drilling route
(3) Map of the project location depicting the submerged components including proposed turbine location area and cable route
(4) FERC's Section 106 Consultation Authorization, dated November 7, 2008, designating the District to act on the FERC's behalf

The District has a rapidly growing service load and is required by the Washington State renewable portfolio standard to supply 15% of its load from new, renewable energy resources by 2020**.** The District believes there is significant potential to help meet this requirement by generating clean, renewable, environmentally benign, and cost-effective energy from tidal flows at selected sites in Puget Sound. The District has selected Admiralty Inlet, the site of the proposed project, as the most

appropriate location to establish a tidal energy research and development project to further explore the feasibility of tidal energy generation.

The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (Power, Conditioning and Control, or PC&C building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted an easement. The PC&C building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

The Project is expected to generate 300 kW of electrical energy during periods of peak tidal currents with an average energy output of approximately 30 kilowatts (kW). While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

The proposed APE for the project includes the following:
Submerged areas – Admiralty Inlet

- Turbine deployment site – bed of Puget Sound (approximately 800,000 square feet)
- Electrical transmission cable route from the HDD exit point to the turbines, including 20-feet on each side of the cable. Much of this route lies within the Turbine deployment site
- Electrical transmission cable route HDD portion from the ordinary high water mark to the HDD exit point, including 10-feet on each side of the cable

Terrestrial Areas – private property

- Electrical transmission cable route HDD portion from the entry point (bore pit) to the ordinary high water mark, including 10-feet on each side of the cable

- Bore pit for horizontal directional drilling. The pit is expected to be approximately 6 feet deep, 20 feet long, 8 feet wide. The final engineering design of the site will dictate the actual dimensions.
- Electrical equipment building footprint (approximately 800 square feet)
- Equipment staging and parking area, typically 75 feet by 120 feet

At this time, the District has identified the proposed APE to adequately cover any potential effects from turbine installation, operation, and removal activities. However, if it becomes necessary to expand the APE in the future, the District will formally notify you and request the SHPO's concurrence on the specific APE expansion.

The District requests your concurrence on the following:

(1) the appropriateness of the APE for the proposed undertaking (pursuant to § 800.4[a][1]).

Thank you for your assistance with this project. We look forward to receiving your response within 30 days of receipt of this request. Please contact Craig Collar at 425-783-1825 or cwcollar@snopud.com should you have any questions or require additional information regarding the attached APE maps or other aspects of this work.

Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
Snohomish County PUD

Enclosures: (1) USGS topographic map
(2) Map of project location (terrestrial)
(3) Map of project location (marine)
(4) FERC's Section 106 Consultation Authorization, dated November 7, 2008

cc: David Turner
Federal Energy Regulatory Commission

STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 • Fax Number (360) 586-3067 • Website: www.dahp.wa.gov

August 8, 2011

Mr. Craig Collar
Snohomish County PUD#1
PO Box 1107
Everett, Washington 98206-1107

Re: Admiralty Inlet Tidal Energy Project
FERC Project: 12690-000
Log No.: 030311-05-FERC

Dear Mr. Collar:

Thank you for contacting our Department. We have reviewed the materials you provided for the proposed Admiralty Inlet Tidal Energy Project in Admiralty Inlet, Island County, Washington

We concur with the proposed revised determination of the Area of Potential Effect (APE) as described and illustrated in your letter and associated maps of August 3rd, 2011.

We would also appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised, including information regarding historic properties that have not yet been identified. Thank you for the opportunity to comment and we look forward to receiving the reports on the results of your investigations and determination of effect.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360)586-3080
email: rob.whitlam@dahp.wa.gov

February 27, 2012

Mr. Mark Preiss, Manager
Ebey's Landing Historical Reserve
P.O. Box 774
Coupeville, WA 98239

RE: No Adverse Effect to Historic Properties, Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Preiss:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District is seeking SHPO's concurrence on our proposed determination of "No Adverse Effect to Historic Properties."

The District retained AMEC Environment and Infrastructure, Inc. (AMEC) to conduct a cultural resources assessment of the Project site on January 5, 2012. During the course of the investigation two archaeological sites were documented; one pre-contact site (45IS304) and one historic period archaeological site (45IS303). Two historic buildings were also inventoried; one within the direct APE and one located in the indirect APE. No Traditional Cultural Properties were identified within the APE. AMEC concluded that the District's proposed work will not adversely affect these sites or properties.

Enclosed you will find the following materials in support of our present consultation effort:

(1) Cultural Resources Assessment for the Pilot Tidal Energy Project, AMEC Environment and Infrastructure, Inc., February 22, 2012.
(2) FERC's Section 106 Consultation Authorization, dated November 7, 2008, designating the District to act on the FERC's behalf

The District has a rapidly growing service load and is required by the Washington State renewable portfolio standard to supply 15% of its load from new, renewable energy resources by 2020**.** The District believes there is significant potential to help meet this requirement by generating clean, renewable, environmentally benign, and cost-effective energy from tidal flows at selected sites in Puget Sound. The District has selected Admiralty Inlet, the site of the proposed project, as the most appropriate location to establish a tidal energy research and development project to further explore the feasibility of tidal energy generation.

The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (Control building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted easements. The Control building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

The APE for the project includes the following:
Submerged areas – Admiralty Inlet

- Turbine deployment site – bed of Puget Sound (approximately 800,000 square feet)
- Electrical transmission cable route from the HDD exit point to the turbines, including 20-feet on each side of the cable. Much of this route lies within the Turbine deployment site
- Electrical transmission cable route HDD portion from the ordinary high water mark to the HDD exit point, including 10-feet on each side of the cable

Terrestrial Areas – private property

- Electrical transmission cable route HDD portion from the entry point (bore pit) to the ordinary high water mark, including 10-feet on each side of the cable
- Bore pit for horizontal directional drilling. The pit is expected to be approximately 6 feet deep, 20 feet long, 8 feet wide. The final engineering design of the site will dictate the actual dimensions.
- Electrical equipment building footprint (approximately 800 square feet)
- Equipment staging and parking area, typically 75 feet by 120 feet

The District has identified the proposed APE to adequately cover any potential effects from turbine installation, operation, and removal activities. The Washington Department of Archaeology and Historic Preservation provided concurrence with this APE in a letter dated August 8, 2011. If it becomes necessary to expand the APE in the future, the District will formally notify you and request the SHPO's concurrence on the specific APE expansion.

At this time the District requests your concurrence on the following:

(1) determination of "No Adverse Effects to Historic Properties" for the proposed undertaking (pursuant to § 800.4[d][1]).

Thank you for your assistance with this project. We look forward to receiving your response within 30 days of receipt of this request. Please contact Craig Collar at 425-783-1825 or cwcollar@snopud.com should you have any questions or require additional information.

Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
Snohomish County PUD

Enclosures: (1) Cultural Resources Assessment, AMEC Environment and Infrastructure, February 22, 2012
(2) FERC's Section 106 Consultation Authorization, dated November 7, 2008

August 3, 2011

Mr. Robert Pederson, AICP
Director, Island County Planning and
Community Development
PO Box 5000
Coupeville, WA 98239

RE: Proposed Area of Potential Effects for Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Pederson:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District is seeking your concurrence on our proposed APE.

Enclosed you will find the following materials in support of our present consultation effort:

(1) USGS topographic quadrangle depicting the location of the project
(2) Map of the project location depicting the terrestrial components including proposed vault location and horizontal directional drilling route
(3) Map of the project location depicting the submerged components including proposed turbine location area and cable route
(4) FERC's Section 106 Consultation Authorization, dated November 7, 2008, designating the District to act on the FERC's behalf

The District has a rapidly growing service load and is required by the Washington State renewable portfolio standard to supply 15% of its load from new, renewable energy resources by 2020**.** The District believes there is significant potential to help meet this requirement by generating clean, renewable, environmentally benign, and cost-effective energy from tidal flows at selected sites in Puget Sound. The District has selected Admiralty Inlet, the site of the proposed project, as the most

appropriate location to establish a tidal energy research and development project to further explore the feasibility of tidal energy generation.

The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (Power, Conditioning and Control, or PC&C building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted an easement. The PC&C building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

The Project is expected to generate 300 kW of electrical energy during periods of peak tidal currents with an average energy output of approximately 30 kilowatts (kW). While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

The proposed APE for the project includes the following:
Submerged areas – Admiralty Inlet

- Turbine deployment site – bed of Puget Sound (approximately 800,000 square feet)
- Electrical transmission cable route from the HDD exit point to the turbines, including 20-feet on each side of the cable. Much of this route lies within the Turbine deployment site
- Electrical transmission cable route HDD portion from the ordinary high water mark to the HDD exit point, including 10-feet on each side of the cable

Terrestrial Areas – private property

- Electrical transmission cable route HDD portion from the entry point (bore pit) to the ordinary high water mark, including 10-feet on each side of the cable

- Bore pit for horizontal directional drilling. The pit is expected to be approximately 6 feet deep, 20 feet long, 8 feet wide. The final engineering design of the site will dictate the actual dimensions.
- Electrical equipment building footprint (approximately 800 square feet)
- Equipment staging and parking area, typically 75 feet by 120 feet

At this time, the District has identified the proposed APE to adequately cover any potential effects from turbine installation, operation, and removal activities. However, if it becomes necessary to expand the APE in the future, the District will formally notify you and request the SHPO's concurrence on the specific APE expansion.

The District requests your concurrence on the following:

(1) the appropriateness of the APE for the proposed undertaking (pursuant to § 800.4[a][1]).

Thank you for your assistance with this project. We look forward to receiving your response within 30 days of receipt of this request. Please contact Craig Collar at 425-783-1825 or cwcollar@snopud.com should you have any questions or require additional information regarding the attached APE maps or other aspects of this work.

Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
Snohomish County PUD

Enclosures: (1) USGS topographic map
(2) Map of project location (terrestrial)
(3) Map of project location (marine)
(4) FERC's Section 106 Consultation Authorization, dated November 7, 2008

February 27, 2012

Mr. Robert Pederson, AICP
Director, Island County Planning and
Community Development
PO Box 5000
Coupeville, WA 98239

RE: No Adverse Effect to Historic Properties, Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Pederson:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District is seeking SHPO's concurrence on our proposed determination of "No Adverse Effect to Historic Properties."

The District retained AMEC Environment and Infrastructure, Inc. (AMEC) to conduct a cultural resources assessment of the Project site on January 5, 2012. During the course of the investigation two archaeological sites were documented; one pre-contact site (45IS304) and one historic period archaeological site (45IS303). Two historic buildings were also inventoried; one within the direct APE and one located in the indirect APE. No Traditional Cultural Properties were identified within the APE. AMEC concluded that the District's proposed work will not adversely affect these sites or properties.

Enclosed you will find the following materials in support of our present consultation effort:

(1) Cultural Resources Assessment for the Pilot Tidal Energy Project, AMEC Environment and Infrastructure, Inc., February 22, 2012.
(2) FERC's Section 106 Consultation Authorization, dated November 7, 2008, designating the District to act on the FERC's behalf

The District has a rapidly growing service load and is required by the Washington State renewable portfolio standard to supply 15% of its load from new, renewable energy resources by 2020**.** The District believes there is significant potential to help meet this requirement by generating clean, renewable, environmentally benign, and cost-effective energy from tidal flows at selected sites in Puget Sound. The District has selected Admiralty Inlet, the site of the proposed project, as the most appropriate location to establish a tidal energy research and development project to further explore the feasibility of tidal energy generation.

The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (Control building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted easements. The Control building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

The APE for the project includes the following:
Submerged areas – Admiralty Inlet

- Turbine deployment site – bed of Puget Sound (approximately 800,000 square feet)
- Electrical transmission cable route from the HDD exit point to the turbines, including 20-feet on each side of the cable. Much of this route lies within the Turbine deployment site
- Electrical transmission cable route HDD portion from the ordinary high water mark to the HDD exit point, including 10-feet on each side of the cable

Terrestrial Areas – private property

- Electrical transmission cable route HDD portion from the entry point (bore pit) to the ordinary high water mark, including 10-feet on each side of the cable
- Bore pit for horizontal directional drilling. The pit is expected to be approximately 6 feet deep, 20 feet long, 8 feet wide. The final engineering design of the site will dictate the actual dimensions.
- Electrical equipment building footprint (approximately 800 square feet)
- Equipment staging and parking area, typically 75 feet by 120 feet

The District has identified the proposed APE to adequately cover any potential effects from turbine installation, operation, and removal activities. The Washington Department of Archaeology and Historic Preservation provided concurrence with this APE in a letter dated August 8, 2011. If it becomes necessary to expand the APE in the future, the District will formally notify you and request the SHPO's concurrence on the specific APE expansion.

At this time the District requests your concurrence on the following:

(1) determination of "No Adverse Effects to Historic Properties" for the proposed undertaking (pursuant to § 800.4[d][1]).

Thank you for your assistance with this project. We look forward to receiving your response within 30 days of receipt of this request. Please contact Craig Collar at 425-783-1825 or cwcollar@snopud.com should you have any questions or require additional information.

Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
Snohomish County PUD

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August 3, 2011

Mr. Jason Joseph, Cultural Resources
Sauk-Suiattle Tribe
5318 Chief Brown Lane
Darrington, WA 98241

RE: Revised Proposed Area of Potential Effects for Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Joseph:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District submitted a request for concurrence with our proposed Area of Potential Effects (APE) in February, 2011 and concurrence was granted by Washington Department of Archaeology and Historic Preservation. Recent changes to the proposed turbine locations and cable route have resulted in a revised APE. The District is seeking your concurrence on our revised proposed APE.

Enclosed you will find the following materials in support of our present consultation effort:

(1) USGS topographic quadrangle depicting the location of the project
(2) Map of the project location depicting the terrestrial components including proposed vault location and horizontal directional drilling route
(3) Map of the project location depicting the submerged components including proposed turbine location area and cable route
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The District has a rapidly growing service load and is required by the Washington State renewable portfolio standard to supply 15% of its load from new, renewable energy resources by 2020**.** The District believes there is significant potential to help meet this requirement by generating clean,

renewable, environmentally benign, and cost-effective energy from tidal flows at selected sites in Puget Sound. The District has selected Admiralty Inlet, the site of the proposed project, as the most appropriate location to establish a tidal energy research and development project to further explore the feasibility of tidal energy generation.

The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (Power, Conditioning and Control, or PC&C building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted an easement. The PC&C building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

The Project is expected to generate 300 kW of electrical energy during periods of peak tidal currents with an average energy output of approximately 30 kilowatts (kW). While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

The proposed APE for the project includes the following:
Submerged areas – Admiralty Inlet

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Terrestrial Areas – private property

- Electrical transmission cable route HDD portion from the entry point (bore pit) to the ordinary high water mark, including 10-feet on each side of the cable
- Bore pit for horizontal directional drilling. The pit is expected to be approximately 6 feet deep, 20 feet long, 8 feet wide. The final engineering design of the site will dictate the actual dimensions.
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- Equipment staging and parking area, typically 75 feet by 120 feet

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February 27, 2012

Mr. Jason Joseph, Cultural Resources
Sauk-Suiattle Tribe
5318 Chief Brown Lane
Darrington, WA 98241

RE: No Adverse Effect to Historic Properties, Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Joseph:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District is seeking SHPO's concurrence on our proposed determination of "No Adverse Effect to Historic Properties."

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The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (Control building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted easements. The Control building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

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(2) FERC's Section 106 Consultation Authorization, dated November 7, 2008

August 3, 2011

Mr. Dennis E. Lewarch, THPO
Suquamish Tribe
PO Box 498
Suquamish, WA 98392

RE: Revised Proposed Area of Potential Effects for Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Lewarch:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District submitted a request for concurrence with our proposed Area of Potential Effects (APE) in February, 2011 and concurrence was granted by Washington Department of Archaeology and Historic Preservation (DAHP). Recent changes to the proposed turbine locations and cable route have resulted in a revised APE. The District is seeking your concurrence on our revised proposed APE.

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Terrestrial Areas – private property

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February 27, 2012

Mr. Dennis E. Lewarch, THPO
Suquamish Tribe
PO Box 498
Suquamish, WA 98392

RE: No Adverse Effect to Historic Properties, Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Lewarch:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District is seeking SHPO's concurrence on our proposed determination of "No Adverse Effect to Historic Properties."

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August 3, 2011

Mr. Larry Campbell, THPO
Cultural Resource Protection Office
Swinomish Indian Tribal Community
11430 Moorage Way
La Conner, WA 98257

RE: Revised Proposed Area of Potential Effects for Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Campbell:

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- Electrical equipment building footprint (approximately 800 square feet)
- Equipment staging and parking area, typically 75 feet by 120 feet

At this time, the District has identified the proposed APE to adequately cover any potential effects from turbine installation, operation, and removal activities. However, if it becomes necessary to expand the APE in the future, the District will formally notify you and request the SHPO's concurrence on the specific APE expansion.

The District requests your concurrence on the following:

(1) the appropriateness of the APE for the proposed undertaking (pursuant to § 800.4[a][1]).

Thank you for your assistance with this project. We look forward to receiving your response within 30 days of receipt of this request. Please contact Craig Collar at 425-783-1825 or cwcollar@snopud.com should you have any questions or require additional information regarding the attached APE maps or other aspects of this work.

Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
Snohomish County PUD

Enclosures: (1) USGS topographic map
(2) Map of project location (terrestrial)
(3) Map of project location (marine)
(4) FERC's Section 106 Consultation Authorization, dated November 7, 2008

February 27, 2012

Mr. Larry Campbell, THPO
Cultural Resource Protection Office
Swinomish Indian Tribal Community
11430 Moorage Way
La Conner, WA 98257

RE: No Adverse Effect to Historic Properties, Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Campbell:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District is seeking SHPO's concurrence on our proposed determination of "No Adverse Effect to Historic Properties."

The District retained AMEC Environment and Infrastructure, Inc. (AMEC) to conduct a cultural resources assessment of the Project site on January 5, 2012. During the course of the investigation two archaeological sites were documented; one pre-contact site (45IS304) and one historic period archaeological site (45IS303). Two historic buildings were also inventoried; one within the direct APE and one located in the indirect APE. No Traditional Cultural Properties were identified within the APE. AMEC concluded that the District's proposed work will not adversely affect these sites or properties.

Enclosed you will find the following materials in support of our present consultation effort:

(1) Cultural Resources Assessment for the Pilot Tidal Energy Project, AMEC Environment and Infrastructure, Inc., February 22, 2012.
(2) FERC's Section 106 Consultation Authorization, dated November 7, 2008, designating the District to act on the FERC's behalf

The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (Control building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted easements. The Control building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

The APE for the project includes the following:
Submerged areas – Admiralty Inlet

- Turbine deployment site – bed of Puget Sound (approximately 800,000 square feet)
- Electrical transmission cable route from the HDD exit point to the turbines, including 20-feet on each side of the cable. Much of this route lies within the Turbine deployment site
- Electrical transmission cable route HDD portion from the ordinary high water mark to the HDD exit point, including 10-feet on each side of the cable

Terrestrial Areas – private property

- Electrical transmission cable route HDD portion from the entry point (bore pit) to the ordinary high water mark, including 10-feet on each side of the cable
- Bore pit for horizontal directional drilling. The pit is expected to be approximately 6 feet deep, 20 feet long, 8 feet wide. The final engineering design of the site will dictate the actual dimensions.
- Electrical equipment building footprint (approximately 800 square feet)
- Equipment staging and parking area, typically 75 feet by 120 feet

The District has identified the proposed APE to adequately cover any potential effects from turbine installation, operation, and removal activities. The Washington Department of Archaeology and Historic Preservation provided concurrence with this APE in a letter dated August 8, 2011. If it becomes necessary to expand the APE in the future, the District will formally notify you and request the SHPO's concurrence on the specific APE expansion.

At this time the District is requesting your concurrence on the following:

(1) determination of "No Adverse Effects to Historic Properties" for the proposed undertaking (pursuant to § 800.4[d][1]).

Thank you for your assistance with this project. We look forward to receiving your response within 30 days of receipt of this request. Please contact Craig Collar at 425-783-1825 or cwcollar@snopud.com should you have any questions or require additional information.

Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
Snohomish County PUD

Enclosures: (1) Cultural Resources Assessment, AMEC Environment and Infrastructure, February 22, 2012
(2) FERC's Section 106 Consultation Authorization, dated November 7, 2008

August 3, 2011

Richard Young
Cultural Resources
Tulalip Tribes
7515 Totem Beach Road
Tulalip, WA 98271

RE: Revised Proposed Area of Potential Effects for Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Young:

Snohomish County Public Utility District (the District), under the authority of the Federal Energy Regulatory Commission (FERC), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the installation of two tidal turbines in Admiralty Inlet, Washington for the District's Pilot Tidal Project (FERC No. 12690, the Project), pursuant to 36 CFR Part 800. The FERC has designated the District as its non-federal representative for purposes of Section 106 consultation during the pilot licensing process. The District submitted a request for concurrence with our proposed Area of Potential Effects (APE) in February, 2011 and concurrence was granted Washington Department of Archaeology and Historic Preservation. Recent changes to the proposed turbine locations and cable route have resulted in a revised APE. The District is seeking your concurrence on our revised proposed APE.

Enclosed you will find the following materials in support of our present consultation effort:

(1) USGS topographic quadrangle depicting the location of the project
(2) Map of the project location depicting the terrestrial components including proposed vault location and horizontal directional drilling route
(3) Map of the project location depicting the submerged components including proposed turbine location area and cable route
(4) FERC's Section 106 Consultation Authorization, dated November 7, 2008, designating the District to act on the FERC's behalf

The District has a rapidly growing service load and is required by the Washington State renewable portfolio standard to supply 15% of its load from new, renewable energy resources by 2020**.** The District believes there is significant potential to help meet this requirement by generating clean, renewable, environmentally benign, and cost-effective energy from tidal flows at selected sites in

Puget Sound. The District has selected Admiralty Inlet, the site of the proposed project, as the most appropriate location to establish a tidal energy research and development project to further explore the feasibility of tidal energy generation.

The Project will involve the deployment, operation, monitoring, and evaluation of two 6-meter diameter Open-Centre Turbines developed and manufactured by OpenHydro Group Ltd in Admiralty Inlet, approximately ½ mile offshore from Admiralty Head (see attached map). The turbines will be installed on the seabed at a depth of approximately 58 meters using a triangular steel foundation (approximately 20 meters per side) anchored by gravity. No pilings are required for installation of the turbine. An electrical transmission cable will be installed underground from shore to approximately the 19-meter water depth contour using horizontal directional drilling (HDD) to avoid damage to the cable and impacts to the sensitive near shore area. The bore length will be approximately 300-meters long. Sub ducts will be placed in the bore to allow two cables to be installed. The cables will be directly laid on the sea bed from each turbine base to the HDD exit as shown in the attached map.

A new on-shore building (Power, Conditioning and Control, or PC&C building) will be constructed to accommodate electrical equipment. The building will be constructed on private residential property east of the Coupeville-Port Townsend State Ferry Terminal on which the District has been granted an easement. The PC&C building will resemble a garage structure and will be designed to adhere to local design guidelines and to blend aesthetically with other structures in the vicinity. No other buildings will be constructed on the site. Other terrestrial work including equipment staging and HDD work will be conducted in a manner which results in as little ground disturbance as possible.

The Project is expected to generate 300 kW of electrical energy during periods of peak tidal currents with an average energy output of approximately 30 kilowatts (kW). While the turbines will produce a modest amount of energy, the primary purpose of the Project is to gather data to advance the viability of commercial tidal energy generation from technical, economic, social, and environmental standpoints. This data is critical to the responsible advancement of commercial scale tidal energy in the United States.

The proposed APE for the project includes the following:
Submerged areas – Admiralty Inlet

- Turbine deployment site – bed of Puget Sound (approximately 800,000 square feet)
- Electrical transmission cable route from the HDD exit point to the turbines, including 20-feet on each side of the cable. Much of this route lies within the Turbine deployment site
- Electrical transmission cable route HDD portion from the ordinary high water mark to the HDD exit point, including 10-feet on each side of the cable

Terrestrial Areas – private property

- Electrical transmission cable route HDD portion from the entry point (bore pit) to the ordinary high water mark, including 10-feet on each side of the cable
- Bore pit for horizontal directional drilling. The pit is expected to be approximately 6 feet deep, 20 feet long, 8 feet wide. The final engineering design of the site will dictate the actual dimensions.
- Electrical equipment building footprint (approximately 800 square feet)
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At this time, the District has identified the proposed APE to adequately cover any potential effects from turbine installation, operation, and removal activities. However, if it becomes necessary to expand the APE in the future, the District will formally notify you and request the SHPO's concurrence on the specific APE expansion.

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(1) the appropriateness of the APE for the proposed undertaking (pursuant to § 800.4[a][1]).

Thank you for your assistance with this project. We look forward to receiving your response within 30 days of receipt of this request. Please contact Craig Collar at 425-783-1825 or cwcollar@snopud.com should you have any questions or require additional information regarding the attached APE maps or other aspects of this work.

Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
Snohomish County PUD

Enclosures: (1) USGS topographic map
(2) Map of project location (terrestrial)
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February 27, 2012

Richard Young
Cultural Resources
Tulalip Tribes
7515 Totem Beach Road
Tulalip, WA 98271

RE: No Adverse Effect to Historic Properties, Snohomish County PUD Admiralty Inlet Pilot Tidal Project (FERC No. 12690)

Dear Mr. Young:

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Respectfully submitted,

Craig Collar
Senior Manager, Energy Resource Development
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