Tse-Whit-Zen: An Ancient Klallam Village Reclaimed… Territory Taken but not Forgotten

By

Arlene Wheeler and Barbara Leigh Smith[1]

Abstract: This three-part interrupted case tells the story of an extraordinary archaeological find, the ancient tribal village, Tse-whit-zen, during the construction process replacing the Hood Canal Bridge. This case offers important insights on inter-governmental decision-making and cultural preservation. Part 1 of the case provides background on the Bridge replacement project and the early stages of the planning process. This part of the case is written largely from the point of view of the Washington State Department of Transportation (WSDOT). Part 2 is written from the standpoint of a member of the Lower Elwha Klallam Tribe as the discovery of the ancient village unfolded and everyone struggled with the impact of that discovery, trying to balance cultural considerations with the urgency surrounding the bridge replacement and the impact on the local economy. Part 3 of the case describes the most recent issues surrounding the case after the discovery of substantial numbers of human remains and the ensuring controversy about whether the project should be shut down.

Part I [2]

Urgency and Opportunity

Western Washington has a complex transportation system as a result of its geography. Mountains and waterways divide the state creating a need for ferries and bridges as well as conventional roads. On August 16, 1961 the Hood Canal Bridge opened, becoming the world's longest floating bridge over salt water. This Western Washington bridge quickly became a major thoroughfare for thousands of people traveling between the northern Olympic Peninsula, Kitsap County and the greater Seattle-Tacoma area.

On February 13, 1979 this critical connection was broken. Under sustained winds of 85 miles per hour with gusts up to 120 mph, the Hood Canal Bridge's anchor systems failed and the pontoons anchoring the western half of the bridge sank.

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[2] Part 1 of this case draws extensively on Douglas MacDonald, *The Hood Canal Bridge Rehabilitation Project and Graving Dock Program. A Report to the Governor and Legislature of the State of Washington*, Olympia, Wa: Department of Transportation, May 16, 2006.

While discussions were subsequently held about replacing the entire bridge, the cost was high and time was of the essence so a decision was made to replace just the western half of the bridge that had been lost in the 1979 storm. Even so, it was nearly three years before the bridge re-opened to traffic in October 1982. The resulting delay left thousands of people dependent on erratic ferry service and one to two hundred mile detours.

The reopening in 1982 was greeted with considerable relief. In the years that followed the northern Olympia Peninsula grew along with dependence on the Hood Canal Bridge. The small cities of Sequim, Port Ludlow, and Port Townsend expanded and tourism to the Olympic National Park and other destinations on the Olympic Peninsula swelled.

Hood Canal Bridge Replacement, Again

Unfortunately, the 1990s brought new problems with the Hood Canal Bridge. Periodic inspections revealed widespread corrosion-related deterioration and span jams occurred on the older, eastern portion of the bridge. In 1997, a replacement plan for the eastern portion of the bridge was developed and presented to the Washington State Transportation Commission. It approved the pre-construction activities and planning. Construction activities were initially scheduled to begin as early as 2001 but were not funded until March 2004 for the 2005-2007 biennium. (MacDonald, 2006). Over the intervening years, the estimated cost of the project continued to climb.

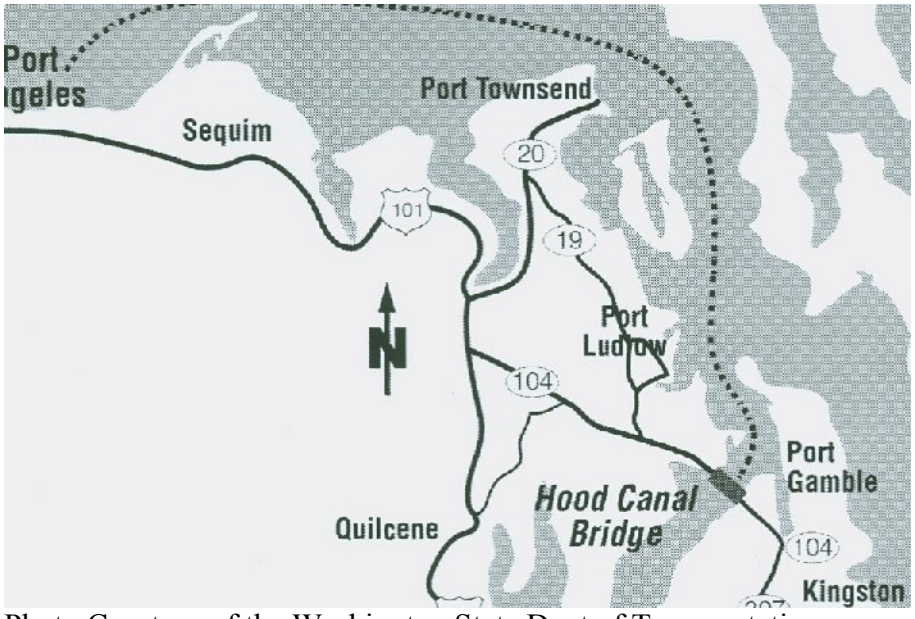


Photo Courtesy of the Washington State Dept of Transportation

One of the major concerns surrounding the Hood Canal bridge replacement was the need for an extended period of time when the bridge would be closed to traffic. Minimizing this down time was widely regarded as crucial since it would affect the lives of thousands

of people every day. Washington State Department of Transportation (WSDOT) studies indicated that as many as 18,000 people used this critical passageway each day. Public hearings and comments from citizen and businesses underscored the importance of making the closure period as short as possible.

Pre-construction Activities and Designation as a High Priority Project

Pre-construction activities began in 1999 to obtain the necessary permits and approvals for the bridge replacement project. This would be a lengthy and complicated process since the program required approximately twenty different types of permits and approvals and involved numerous federal and state agencies, and local jurisdictions (see Appendix 1) . The consultation and permitting included the possible impact on endangered or threatened species (the Endangered Species Act), the National Environmental Policy Act, a variety of water-related requirements and permits, a historical preservation review, and consultation with Indian tribes.

In 2001, the Transportation Permit Efficiency and Accountability Committee (TPEAC) was created by the Legislature and charged with overseeing and streamlining the planning and construction process for several designated high priority large construction projects. The Hood Canal Bridge project was subsequently designated as one of three high priority state projects considered 'critical to statewide economic productivity' which meant that the project would try to achieve a streamlined permitting process to expedite the work. This designation would have the consequence of continuously pushing people towards speeding up the decision making process whenever possible.

The TPEAC committee included elected officials, state agency officials, and other interested parties as well as official non-voting participants. Non-voting members included the Northwest Indian Indian Fisheries Commission (NWIFC) and the Columbia River InterTribal Fisheries Commission (CRITFC) and more than a dozen others such as the Association of Washington Businesses, State Fish and Wildlife Commission and environmental organizations. The original legislation establishing TPEAC had specified that NWIFC and the CRITFC be included and designated non-voting members since tribes had a known interest in many of the issues surrounding these types of project. In the overall TPEAC process, there were unresolved issues about the role for the tribes as stakeholders vs government-to-government partners.[3] Numerous invitations were sent to tribes in the vicinity, but the tribes did not attend the early meetings of TPEAC. Later, questions would be raised about whether there should have been representation of cultural resource management experts as well as experts on natural resource issues.

A group that came to be known as the *Interdisciplinary Team* became the working group that operated under TPEAC. This group included representatives from the Washington State Departments of Transportation, Ecology, Fish and Wildlife, and Natural Resources. In addition to representatives from Kitsap County, five federal agencies (Federal

[3] This is a critical issue with tribes. Federally recognized tribes in Washington State have a formal government-to-government relationship with the State government and its agencies. The tribes do not wish, therefore, to interact with the State as stakeholders, i.e. interested parties.

Highway Administration, US Army Corps of Engineers, National Marine Fisheries Service, US Coast Guard, and US Fish and Wildlife) also sat on the team. The purpose of this group was to achieve all project permits by November 2002.

The National Historic Preservation Act requires federally funded projects to assess the project impact on historic properties (see National Historic Preservation Act at www.achp.gov/nhpa.html for additional information) through a section 106 review process. The initial review indicated minimal impact and focused mainly on the effect of the project on the old bridge itself (a historic landmark) and the impact of the interim transportation systems during the bridge closure on the historic town of Port Gamble.

The initial March 2002 *Environmental Assessment* of the proposed bridge project was sent to the Port Gamble S'Klallam, the Jamestown S'Klallam, Skokomish, and the Suquamish tribes. The initial assessment did not include the location of the graving dock (a fabrication site for parts of the bridge). The more westerly tribes, including the Lower Elwha Klallam and the Makah were not on the mailing, probably because of their distant location from the presumed site of the activity in Seattle-Tacoma and Hood Canal. Following public hearings and some revisions, a *Determination of Non Significance* on the human environment were made with a finding that the Environmental Assessment had adequately addressed the environmental issues and impacts.

Why didn't the tribes participate? Some argued that the TPEAC process was not consistent with the structure of government-to-government relations and that the routine notifications that came through the permitting process slipped under the radar because they didn't seem to raise critical issues at the time. The tribes are constantly faced with pressures to keep track of many different projects. While their capacity has grown dramatically over the past twenty-five years, many tribes are short staffed and need to pick and choose which projects should have priority. It's quite conceivable that they simply didn't initially see the bridge replacement as a project raising important cultural resource or natural resource issues. And all of this happened long before Port Angeles was even considered as a site for the project work. Much later, of course, questions would be raised about how tribal participation could have been assured and whether the process and the committees had sufficient tribal representation.

Choosing a Contractor and a Graving Dock Site

Two important decisions in the preconstruction stage involved selection of a contractor and the site for a graving dock. The graving dock is a fabrication site where the new pontoons and anchors would be built. (MacDonald, 2006). When the initial Environmental Assessment was completed and circulated in early 2002, the location of the graving dock had not yet been settled so considerations about the graving dock site was not included in the initial Environmental Assessment.

At the outset, the siting of the graving dock was not considered a major issue. In fact, the original plan was to let the contractors who bid on the project each propose their own graving dock site and arrange for the permits for its use. But in 2002 a number of factors

came together that led to a change of course. It became clear that WSDOT had to set the graving dock site so that permitting could proceed before the contractor was brought on board. Furthermore, in order to ensure competitive bids for the job, WSDOT needed to chose a site that any of the contractors could use if they won the bid. As it turned out, this factor and resistance from vocal environmental groups to the existing Concrete Technology Corporation site made the search for an alternative urgent in 2002 and ultimately led to the entry of Port Angeles as a potential site quite late in the pre-construction process.

Finding an adequate graving dock site that WSDOT could make available to any of the potential contractors was not a simple matter. A number of factors were at play in the choice of a site: 1) fit of the site with the construction needs 2) ease of meeting permit requirements, 3) potential to also serve as a site for a future bridge replacement (the 520 Bridge on Lake Washington), and 4) timeliness of the option in light of the urgency of the situation. A number of previously available potential Puget Sound graving facilities sites had gone out of business and several were too small so there were few options that met the criteria. As always, there was also concern about public support for any given site. NIMBY (not in my backyard) issues frequently got in the way of siting decisions.

One of the new processes that the WSDOT used to examine its assumptions was the WSDOT Cost Estimate Validation Process (CEVP), a peer review process to evaluate cost and schedule estimates. In 2002, a CEVP evaluation on this project raised strong concerns about Concrete Tech in Tacoma. Longer term considerations were also at play since other bridge reconstruction projects were on the horizon. Later estimates indicated that a Port Angeles site could "trim six years off the cycle time for the much more elaborate pontoon fabrication requirements for the SR 520 bridge as compared to the use of the Concrete Tech facility" and this tipped the scales in favor of Port Angeles (MacDonald, 2006, 3-29).

The process ultimately ended up with two options: Concrete Tech, an existing facility in Tacoma, or Port Angeles where a new graving dock could be built on Ediz Hook, waterfront property that had been a sawmill for nearly a century and was now a log sorting area. With widespread community support from local businessmen, city officials, and state legislators, Port Angeles eventually emerged as the front runner after concerns were raised about the small size, the potential delays, cost, and permitting (especially with the Endangered Species Act) at the Tacoma Concrete Tech site.

Port Angeles community leaders were delighted with the prospect of a project that could have an $18 million impact on the local economy and create up to 129 high paying jobs. (*Peninsula Daily News,* November 13, 2002). On November 19, 2002, the decision to attempt to use the Port Angeles site, pending assessments of suitability and permitting, was announced by the WDOT. The State sent the Lower Elwha Klallam Tribe its first letter in October, a month before the preliminary decision. In the meantime, the State purchased the property from the Port of Port Angeles. Everyone seemed to believe Port Angeles was the ideal solution. It appeared be a way to address the urgency of the bridge

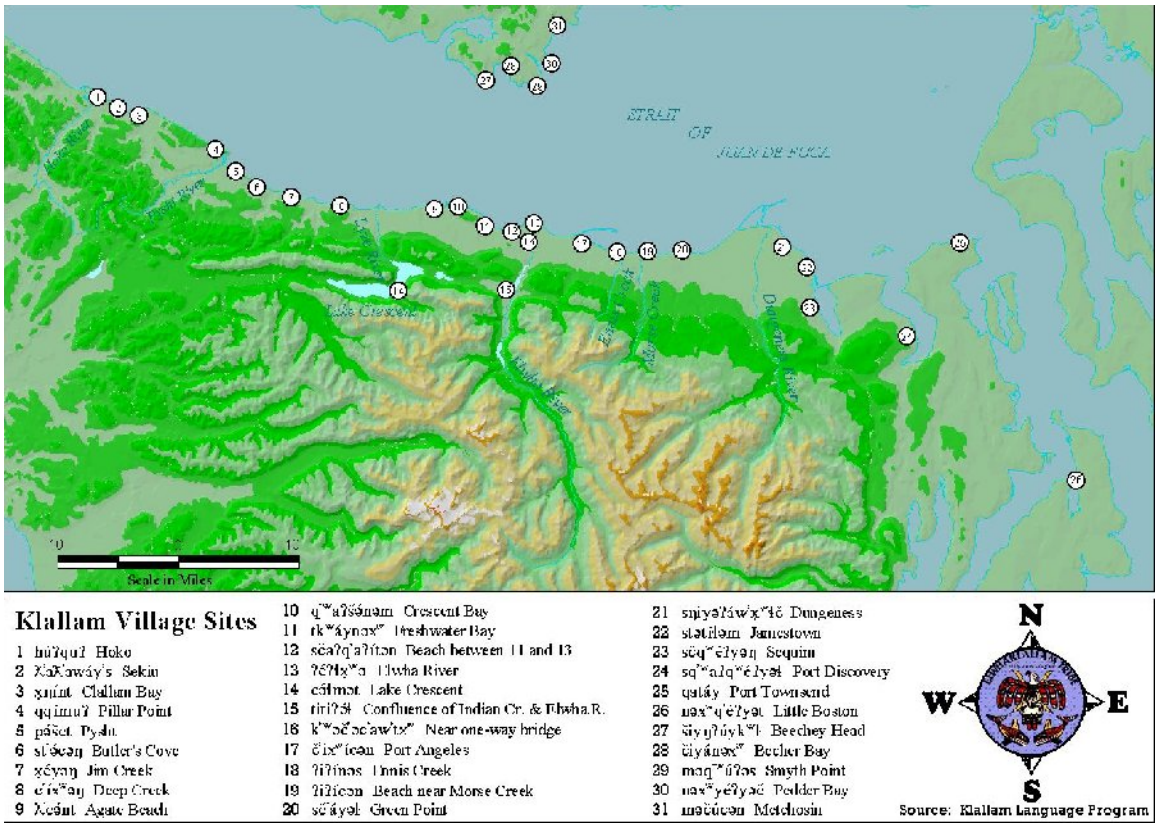
replacement project and the opportunity to meet community economic needs at the same time.

Permitting for the Port Angles Site and Tribal Consultation

To expedite the process, the team moved ahead to secure the necessary permits on parallel tracks. Between December 20, 2002 and June 16, 2003, various permits were submitted and approved including a supplement the National Environmental Policy Act *Environmental Assessment*, a Shoreline Substantial Development permit from the City of Port Angeles, and permits from various state and federal agencies such as the US Coast Guard, the National Marine Fisheries Service, the State Department of Fish and Wildlife, US Army Corps of Engineers, and the State Department of Ecology (MacDonald. 2006, 2-17-2-18).

The City of Port Angeles and the Lower Elwha Klallam Tribe had previously signed an agreement on August 7, 2001 establishing government-to-government relations to "address issues of common concern and to seek solutions to common problems" including issues relating to cultural resources and economic development (Macdonald, 2006, 3-30), but the City did not consult with the Tribe about the Shoreline Use permit.

Historically much of the northern Olympic Peninsula and southern Vancouver Island was Klallam territory and more than 30 villages were scattered throughout this area. Today they are divided politically into three federally recognized tribes—the Port Gamble S'Klallam, the Jamestown S'Klallam and the Lower Elwha Klallam which is the tribal community near Port Angeles. There is also a Klallam community at Beacher Point on Vancouver Island, Canada. "S'Klallam" is an anglicized version of their original name which means "strong people" (Wray, 2002, 18).



Early estimates place the population of the S'Klallam people at 2,400 around 1790 and only 926 by 1855 after the smallpox and measles epidemics of the 1800's.

> The S'Klallam, along with the Skokomish and [now extinct] Chemakum, were signatories to the 1855 Treaty of Point No Point. In signing the treaty to cede 438,430 acres of S'Klallam territory to the federal government, the S'Klallam understood that a reservation was to be established for them between Sequim and Dungeness Bay…However no reservation was established and they were informed they had to move onto the Skokomish Reservation (Wray, 2002, 19).

Most refused to move. In 1910 the construction of dams on the Elwha River began, flooding the creation site of the Elwha people. Efforts continued to consolidate the Klallam people but these failed and were finally abandoned in the 1930's. At that time the government purchased 353 acres of farmland to constitute a new reservation for the Lower Elwha Klallam. There was resistance from local landholders and sportsman, and the reservation was not officially proclaimed for the Lower Elwha until 1968. Today the Tribe holds 856 acres with a population of 750 people. Like other Northwest tribes located along the sea, the Elwha face development challenges since much of their land is located in the floodplain (Valadez, 2002,26-28).

The history of the relationship between the Elwha people and the local community is very mixed. Observers looking back on the issues that subsequently arose as a result of the decision to site the graving dock at Port Angeles would note that if the power structure of

the Port Angeles community had a richer and more open understanding of the Tribe, its interests, and the history and meaning of this waterfront site, the situation might have turned out very differently. But the overwhelming enthusiasm from the Port Angeles community led everyone to overlook the glaring absence of the Lower Elwha people and their history in the discussion at this time. And the pressure to move quickly ahead was ever present.

Still, at this stage of the process there appeared to be no problems with the permits or the site, and stipulations were included that addressed any issues that might arise with unanticipated discovery of historic properties or cultural resources. The City's Shoreline Substantial Development Permit specifically stated that the site would be monitored for cultural resources and work would be stopped, if necessary, to protect cultural resources if they were discovered. Similar provisions were written into the Environmental Checklist.

Choosing Port Angeles as the graving dock site also required re-examining the National Historic Preservation Act Section 106 Review process and conducting a cultural resources survey. To do this work, a consulting firm WSDOT had previously used, Western Shore Heritage Services (WSHS), was hired in October 2002. The hope was that the report could be completed within one month, and the urgency of the work was noted in the instructions to the consultant. They were instructed to survey the literature including archival materials, do a ground survey, a structural review, and coordinate with the Tribe to produce a summary report. The 'Area of Potential Effects ' (APE) was defined in the directions to the consultant, and these specifications were used to take samples for any evidence of cultural resources or human habitation. [4]

[4] The National Historic Preservation Act, Section 106 Review process and designation of Area of Potential Effects (APE) is further discussed in Part 2. WSDOT defined this area.

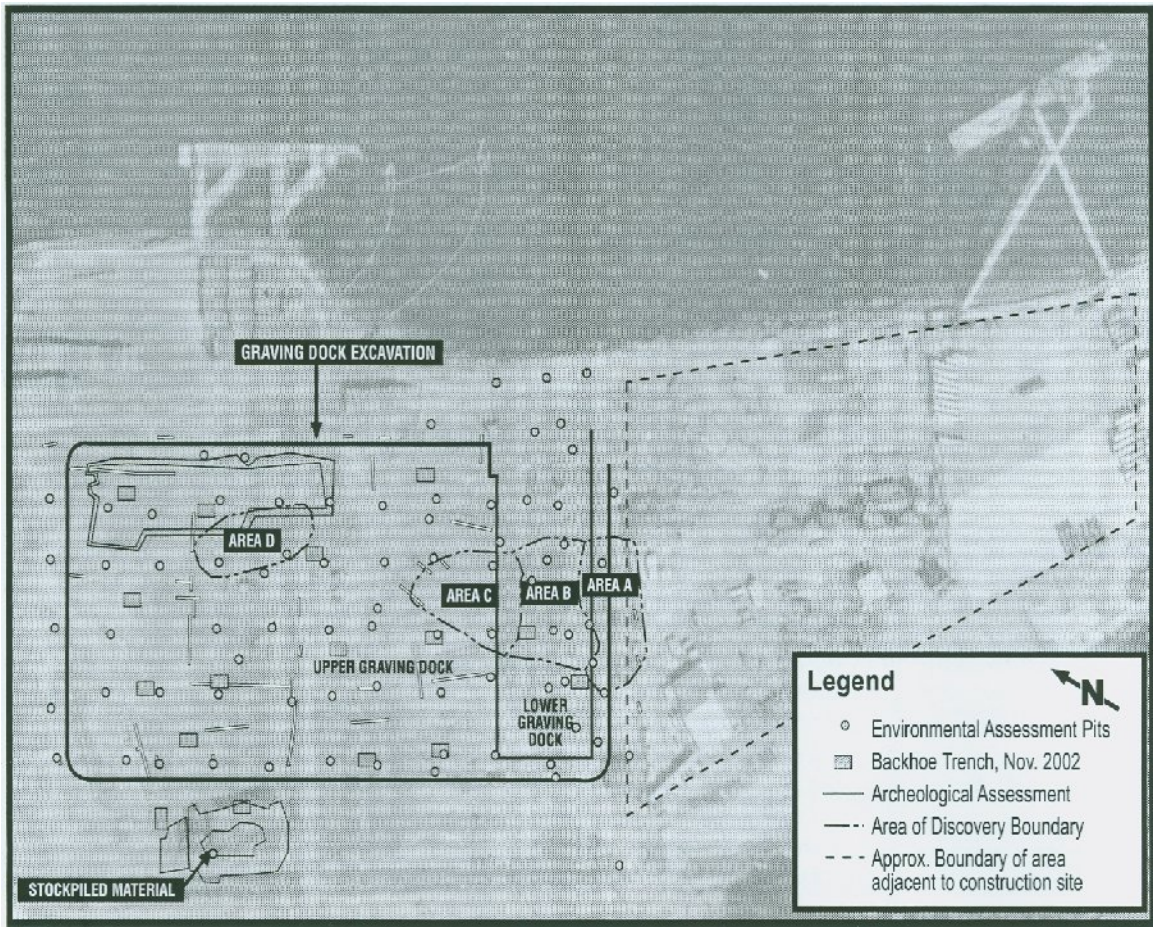


Photo courtesy of the Washington State Department of Transportation

The five-page summary report Western Shore Heritage Services (WSHS) submitted some months later concluded that there was a low probability of encountering Native American cultural resources on the site, but the report did also note historic records that indicated the existence of an ancient Elwha village called Tse-whit-zen on Ediz Hook. Western Shore's report found no evidence of archaeological deposits after drilling 17 sample backhoe trenches throughout the project area to obtain information on stratigraphy and historic period fill and construction, but, following usual protocols, they concluded that a monitoring plan should be developed because of this early history and the high probability for unknown deposits beneath the historic period fill (Burns and Rooke, 2003). The Tribe's archaeologist, Larson Anthropological Archaeological Services (LAAS), field notes and photographs suggested there was some evidence of archaeological deposits in several of the trenches (Lewarch and Larson, March 2003). Western Shore's report was subsequently submitted to the Washington State Office of Archaeology and Historic Preservation for their concurrence, which was forthcoming, and to the six tribes in the vicinity—the Lower Elwha Klallam, the Jamestown S'Klallam, the Skokomish, the Makah, the Suquamish and the Port Gamble S'Klallam.

The Elwha Tribal Chair, Dennis Sullivan, responded saying that the Tribe agreed with the findings and endorsed the recommendation that a monitoring plan be developed. He said,

> We realize that this project is progressing on a fast-track schedule and [we] will make every effort to respond with comments in a timely manner. We agree that archaeological specialists selected in consultation with the Tribe must be on site during excavation activities that exceed four feet. In the unlikely event of an inadvertent discovery of archaeological materials at any depth, work will be stopped and contact made with the Tribe in addition to the Washington State Historic Preservation Officer (MacDonald, 2006, 4-49).

The Tribe also noted that the proposed area was near known Klallam village sites and traditional use areas. They also said that the Lower Elwha had no cultural resources department and no archaeologists on staff to vet the state's proposal.

Contractor Chosen and Construction Work Begins

In February 2003 the bids calling for a contractor were posted with the permitting process largely completed. Bids were opened on June 18, 2003. After an extensive period of bid review, the contract was awarded to Kiewit-General, the low bidder, on June 24, 2003.

Work at site began almost immediately with moving in of equipment and the removal of dirt and debris. On Saturday August 16, 2003 a WSDOT supervisor, David Garlington, noticed a layer of clam shells and dark soil in an area not currently under excavation. Garlington had been with Western Shore when they did the site survey and realized the potential significance of what he observed. He called Western Shore and left a message. He notified the Tribe indicating that no further excavation would take place in accordance with the agreements previously reached. The area was marked off and the State Historic Preservation Officer notified of the subsequent discovery of animal bones, clam shell and shell fish remains, and antler and hunting/fishing points. (MacDonald, 2006, 5-59). In the meantime, 19,600 cubic yards of debris, including intact and disturbed archaeological deposits were taken to the Shotwell quarry and landfill.

References

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Summary of Permits

Permits specifically required by project construction at the bridge site and the proposed traffic mitigation plan using interim terminals at Port Gamble and South Point.

Permit Name	Issuing Agency	Statutory and Regulatory Basis	Key issues and challenges
Shoreline Substantial Development	Jefferson County	Shoreline Management Act	Activities associated with short-term passenger only ferry terminal at South Point and bridge replacement.
Shoreline Substantial Development	Kitsap County	Shoreline Management Act	Activities associated with short term use of Port Gamble Mill site as passenger only ferry terminal.
Shoreline Substantial Development	Kitsap County	Shoreline Management Act	Activities associated with bridge replacement.
Section 401 Water Quality Certification	Department of Ecology	Clean Water Act	Compliance with water quality standards, passenger only ferry facilities, slope development / restoration, construction stormwater runoff, bridge roadway stormwater runoff and bridge maintenance activities at Hood Canal.
CZMA Certification	Department of Ecology	Coastal Zone Management Act	Consistency with state and federal laws regulating coastal zone development, Hood Canal.
NPDES for Construction	Department of Ecology	Clean Water Act	Sedimentation / Erosion Control at Hood Canal Bridge site.
Hydraulic Project Approval	Washington Department of Fish and Wildlife	Fish and Wildlife Code	Potential impacts to aquatic life and habitat related to in-water work at Hood Canal.
Section 404 Nationwide 15	Corps of Engineers	Clean Water Act	Discharges to waters of US required to construct bridge approaches.
Section 9	US Coast Guard	Rivers and Harbors Act	Bridge clearances in navigational waters and construction operation conflicts with navigation.
Section 7 Consultation	US Fish and Wildlife Service	Endangered Species Act	Potential impacts to murrelet, bald eagle and bull trout. Hood Canal and Port Angeles Harbor.
Section 7 Consultation	NOAA Fisheries	Endangered Species Act	Potential impacts to listed salmon species. Hood Canal and Port Angeles Harbor.
Clearing and Grading Permit	City of Port Angeles	City Code	Sedimentation / Erosion Control and contaminated soils handling.
Building Permit	City of Port Angeles	City Code	Building code compliance.
Shoreline Substantial Development	City of Port Angeles	Shoreline Management Act	Port Angeles Harbor Shoreline disturbance.
Section 401 Water Quality Certification	Department of Ecology	Clean Water Act	Compliance with water quality standards, dredge material sampling, characterization /disposal, upland soils management / disposal, concrete transport, construction stormwater runoff, industrial stormwater runoff from completed facility and shoreline restoration at Port Angeles Harbor.
CZMA Certification	Department of Ecology	Coastal Zone Management Act	Consistency with state and federal laws regulating coastal zone development, Port Angeles Harbor.
Section 401 Water Quality Certification	Department of Ecology	Clean Water Act	Potential water quality impacts at Port Angeles Harbor Bridge site.
NPDES / Facility	Department of Ecology	Clean Water Act	Quality of stormwater discharge from completed facility.
Hydraulic Project Approval	Washington Department of Fish and Wildlife	Fish and Wildlife Code	Potential impacts to aquatic life and habitat related to in-water work at Port Angeles Harbor.
Section 10 / 404 Individual Permit	Corps of Engineers	Clean Water Act	Dredging channel at mouth of graving dock and placement of structures within navigational waters.

Permit	Issuing Agency	Key Provisions, conditions and requirements
Shoreline Substantial Development	Jefferson County	- WSDOT shall comply with WDFW and Corps of Engineers permit conditions for bridge site construction. - Approves use of 1130 space park and ride facility at Shine Pit.
Shoreline Substantial Development	Kitsap County	**Bridge site:** - Bridge footprint shall not be expanded. - All construction shall occur within right of way - Submit erosion control plan for review **Port Gamble Park & Ride / Ferry Terminal:** - Stormwater treatment shall be designed and implemented in accordance to county standards. - Temporary ferry dock shall not ground.
Section 401 Water Quality Certification	Department of Ecology	**Bridge site / ferry terminals:** - Construction debris shall not enter the water. - Containment boom shall be used. - Treated lumber or timber use not allowed. - Comply with Construction Stormwater Permit. - Revegetation required for disturbed slopes. - Submit bridge operation manual. - Submit water quality monitoring plan annually.
NPDES for Construction	Department of Ecology	- Implement erosion control plan.
Hydraulic Project Approval	Washington Department of Fish and Wildlife	**Bridge site / ferry terminals:** - No work below ordinary high water mid February through mid July. - Under pier lighting to be provided under work bridge. - No treated lumber allowed in new fender system. - Eelgrass survey required pre and post construction. - Hydroacoustic monitoring for pile driving. - Mitigation required for pile driving.
Section 404 and Nationwide 15	Corps of Engineers	**Bridge site / ferry terminals:** - Comply with Endangered Species Act Section 7 Consultation terms and conditions.
Section 401 Water Quality Certification	Department of Ecology	**Port Angeles:** - Dredged sediment and soils handling and characterization. - Obtain General Industrial Stormwater Permit for facility operation. - Water Quality Monitoring Plan (WQMP) – sampling schedule of at least once a day. - Temporary Erosion and Soil Control Plan – submit 30 days prior to Construction. - WQMP – Testing for Dissolved Oxygen (DO), Ph, Turbidity, Semi Volatiles, plus others, with monitoring daily. - Implement Erosion and Sediment Control Plan (ESCP) and Pollution Control Plan (PCP). - Dredging within Port Angeles Harbor shall avoid the critical low dissolved oxygen period of Aug. 1 thru Oct. 31. - Dredging shall be done using clamshell dredge.
Shoreline Substantial Development	City of Port Angeles	- Professional archaeological review to satisfaction of Lower Elwha Klallam Tribe and City of Port Angeles Community Development Department prior to construction. - Submit drainage plan for review and approval prior to construction. - Submit a Temporary Erosion and Sedimentation Control Plan for review and approval prior to construction. - No work waterward of the Ordinary High Water Mark during periods of juvenile salmonid migration, as determined by Washington Department of Fish and Wildlife. - Obtain approval for disposal of dredge spoils or excess excavation within City through a Clearing and Grading. - Characterize soils exported off-site for disposal for contaminants. - Follow all conservation measures listed in Chapter 7 of the Biological Assessment and Essential Fish Habitat Assessment, dated May 20, 2002, and revised January 1, 2003. - Adhere to all conservation measures for pile driving and removal, eelgrass preservation, erosion and spill control, water quality, and fish protection listed in application. - Remove and dispose of derelict industrial equipment and materials from project and mitigation site shoreline. - Make material improvements to the public access adjacent to the site by providing an aesthetic separation/ barrier between the site and the Waterfront Trail.

Permit Conditions (continued)

Permit	Issuing Agency	Key Provisions, conditions and requirements
Hydraulic Project Approval	Washington Department of Fish and Wildlife	**Port Angeles:** - No in-water work from February 15 through July 14. - No work below Ordinary High Water Line at Shoreline Restoration site from October 15 thru March 1. - Shoreline Restoration remedial work not to occur from February 15 through July 14. - Channel Armoring Provisions. - Channel Dredging Provisions. - Intertidal and In-water Pile Driving and Removal Provisions. - Eelgrass/Macro Algae Habitat Survey required. - Develop Graving Dock Operation and Fish Removal Manual. - Fish shall be prevented from entering pumping chambers and intakes by fish protection screens designed according to Washington Department of Fish and Wildlife Fish Protection Screen Guidelines. - Open gate only as long as necessary to float pontoons, anchors to harbor. - Implement bubble curtain at entrance, operate at all times when door is open. - Monitor dissolved oxygen levels within the graving dock. - Graving dock gate opening allowed only from July 15 through February 14. - Shoreline Restoration Site Provisions – mitigation for 500 lineal feet of new rock armor between Ordinary High Water Line and minus 10 feet Mean Lower Low Water and dredging of 20,800 square feet specified as restoration of 1000 lineal feet of shoreline on Ediz Hook owned by City and leased to Port.
Section 404 / 10	Corps of Engineers	**Port Angeles:** - Comply with archaeological monitoring plan. - Comply with Endangered Species Act Section 7 consultation terms and conditions. - Contractor is not to block navigational waters. - Plan for dredging and disposal of material seven days prior to work.
Section 7 Consultation (Endangered Species Act)	US Fish and Wildlife / NOAA Fisheries	**Bridge site and Port Angeles:** - Hydroacoustic monitoring of impact pile driving. - Bubble curtain for impact pile driving. - Under pier lighting requirements. - Pontoon / anchor moorage requirements during fish window. - Fish handling requirements during graving dock operation. - Bubble curtain at graving dock gate. - Limited hours for pile driving, use of noise shroud.