

Review of Port Angeles Graving Dock Project Preliminary Report



Transportation Performance Audit Board (TPAB)

Prepared by
Joint Legislative Audit and Review Committee (JLARC)

June 2, 2006

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**REVIEW OF PORT
ANGELES GRAVING
DOCK PROJECT**

PRELIMINARY REPORT



REPORT DIGEST

JUNE 2, 2006

PREPARED BY
JOINT LEGISLATIVE AUDIT AND
REVIEW COMMITTEE (JLARC)

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STUDY MANDATE

In March 2005, the Transportation Performance Audit Board (TPAB) requested that the Joint Legislative Audit and Review Committee (JLARC) conduct a study of the Washington State Department of Transportation's (WSDOT) Hood Canal Bridge east half replacement project, Port Angeles graving dock site. TPAB wanted to review the chain of events which led first to the decision to construct a graving dock at the Port Angeles site, and then to the abandonment of that construction in December 2004 due to the discovery of a historically significant Native American village with extensive archaeological resources and human remains at the site.

JLARC contracted with the firm of Foth & Van Dyke and Associates for this review. Foth and Van Dyke is an established engineering consulting firm headquartered in Green Bay, Wisconsin. They have a specialized practice that focuses on archaeology and cultural resources management associated with large construction projects. Foth and Van Dyke's team for this study included transportation, environmental permitting, and cultural resources specialists who reviewed available project documents and conducted interviews with key project stakeholders. Their attached report provides an analysis of:

- The decision-making that led to the Port Angeles graving dock site selection;
- The impact of the environmental permitting process and permit streamlining on site selection;
- The process used to evaluate archaeological resources and oversight of that work by WSDOT and the state's Department of Archaeology and Historic Preservation (DAHP); and
- The interactions of interested parties, including review of the agreements and consultations between WSDOT and local, state, and federal agencies and tribal governments.

In addition to the work of the consultant, JLARC staff conducted a fiscal review of the Port Angeles graving dock project.

Overview of Hood Canal Bridge Project

The Hood Canal Bridge, a drawspan pontoon bridge that crosses the Hood Canal between the Kitsap and Olympic peninsulas, is an important transportation link in the region. A 1997 WSDOT study reported that the pontoons and anchor system of the east half of the bridge did not meet current engineering standards for seismic forces or severe storms. Due to the condition of the bridge, WSDOT proposed to reconstruct the east half of the bridge by or before 2007.

The reconstruction project required a graving dock site to build the large pontoons and anchors. A graving dock is a shoreline dry dock that is excavated and constructed for the purpose of repairing or building large ships and other water-going vessels. After a large ship or water-going vessel is built, the graving dock is flooded and the vessel is floated away from the dock.

Several environmental factors needed to be addressed in order to accomplish bridge, pontoon, and anchor construction. These included factors dictated by a number of state and federal statutes including the National Environmental Policy Act, the State Environmental Policy Act, Endangered Species Act, Section 4(f) of the U.S. Department of Transportation Act, and Section 106 of the National Historic Preservation Act.

The complexity of the project engineering, the environmental factors that needed to be addressed, and the importance of the bridge as a transportation link presented a very challenging undertaking for WSDOT.

Major Study Findings

JLARC and Foth and Van Dyke recognize the complexity of the bridge project and construction of a graving dock facility. We also appreciate the challenges presented to WSDOT, the DAHP, the Lower Elwha Klallam Tribe, and others in the Port Angeles community following the inadvertent discovery of archaeological material and human remains at the Port Angeles site. Our review of the site selection, environmental permitting, archaeological assessment, interactions of interested parties, and fiscal analysis was focused on analyzing the activities that took place and what practices could be strengthened, so that future projects could benefit from the lessons learned from the Port Angeles project.

Foth and Van Dyke's review of the interactions with the Lower Elwha Klallam Tribe was not fully realized because shortly after beginning the audit, the Tribe filed a lawsuit against the State and declined to participate further in the audit. Foth and Van Dyke did have the benefit of one meeting with the Tribe and access to previously existing records. Therefore, limited observations concerning the interactions of interested parties are provided. However, definitive conclusions about the effectiveness of the tribal consultation process could not be made.

Findings – Foth and Van Dyke:

Foth and Van Dyke's findings concerning the Port Angeles graving dock project's site selection, environmental permitting, archaeological assessment, and the interactions of interested parties indicate that those activities were primarily influenced by:

- The professional judgment of WSDOT that the Hood Canal Bridge project had limited alternatives and required pontoon and anchor replacement within a tight project schedule;
- The challenges presented to WSDOT when what seemed a promising graving dock site for the project encountered unexpected difficulties and WSDOT had not fully assessed all other engineering options that it could pursue; and
- The approach used by WSDOT to utilize and assign appropriate technical resources and skill sets on key project activities.

Foth and Van Dyke acknowledge that WSDOT's own tight project schedule, a welcoming attitude from the community at Port Angeles, and a perceived lack of alternatives all contributed to WSDOT's selection of the Port Angeles site with limited additional investigation of that site compared to other alternatives. The findings, recommendations, and professional suggestions in the Foth and Van Dyke report can help WSDOT avoid being in this position again in the future.

Further, divergent opinions and limited documentation on the tribal consultation process make it difficult to draw conclusions regarding the interaction with interested parties on the project. Nonetheless, from the evidence obtained, JLARC's consultant offers recommendations to improve the method of consultation and communication with interested parties on future projects.

Summary of Foth and Van Dyke's Findings

The following is a summary of the specific findings Foth and Van Dyke present in their more detailed review, which follows Chapter 2 of this report. It is important to note that the audit reviews the activities relating to the Port Angeles graving dock project through December 2004. Since that time, WSDOT and DAHP have undertaken a number of activities that may help to address some of the findings presented below. Despite the gaps in performance identified, Foth and Van Dyke also make the following positive findings:

- The WSDOT Bridge team and the Port Angeles Office did excellent engineering design work within a compressed schedule;
- WSDOT's communications section did an excellent job working with the public concerning bridge closure mitigation and notification; and
- The State Historic Preservation Officer participated within the requirements of Section 106 of the National Historic Preservation Act.

Key Findings Relating to Study Objective 1 – Site Selection

- For the Hood Canal Bridge project, WSDOT's project management and project development schedules were inadequate, and a fast-tracked project schedule reduced the time available for analysis of alternative graving dock sites and options.
 - Documentation of certain aspects of the project process with plans and schedules was lacking.
 - Analysis of using alternative state- or privately-owned graving dock sites was limited and poorly documented.

Key Findings Relating to Study Objective 2 – Environmental Permitting

- The legislatively-mandated Transportation Permit Efficiency and Accountability Committee's (TPEAC) inter-disciplinary team process for permit streamlining entered the project late. Also, the compressed project time schedule limited the ability of permitting agencies to fully consider proposed site alternatives for the graving dock. In addition:
 - Resource agencies on the inter-disciplinary team (IDT) focused the team's efforts primarily on Endangered Species Act concerns, particularly concerns about listed salmon

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species. As a result, site alternatives presented by WSDOT were summarily dismissed due to these concerns.

- WSDOT did not use expertise to either confirm or contradict the regulatory agencies' positions and the IDT's mostly verbal approval or disapproval of alternative sites.
- The review of the archaeology, socioeconomics, and geology of site alternatives, and experts in those disciplines were not represented in IDT discussions.

Key Findings Relating to Study Objective 3 – Archaeological Assessment

- WSDOT did not have a consistent documented protocol for addressing compliance with cultural resources assessment and consultation requirements of Section 106 of the National Historic Preservation Act.
 - The initial graving dock archaeological site assessment of the Area of Potential Effect started late in the overall Hood Canal Bridge timeline. WSDOT carried out this assessment using an on-call consultant contracting process. Although WSDOT's Cultural Resources Program Specialist recognized the need for "deep-site" testing of the Port Angeles construction location and suggested that it be included in the consultant's scope of work for the initial archaeological assessment, a number of factors described below hampered identification of the archaeological resources on the site.
 - The Area of Potential Effect was not adequately defined prior to the initial site assessment in November 2002. WSDOT provided incomplete information to its consultant about the site's Area of Potential Effect: the vertical and horizontal dimensions of the graving dock, the depth of installation for the sheet piling, the location of the on-site stormwater ponds and bioswales (typically vegetated stormwater biofilters), the location and depth of piping, and a description of access roads and staging areas were not defined in WSDOT's request for proposals. Additionally, the indirect effects of dewatering, compaction, and vibration on archaeological resources were not defined as part of the construction project's Area of Potential Effect. The indirect effects should have been evaluated per Section 106 of the National Historic Preservation Act.
 - The scope of work developed by the consultant was based on this incomplete information from WSDOT. The task descriptions of the archaeological consultant's scope of work were brief and did not demonstrate that the consultant understood the specific project objectives. The field investigation/testing approach, laboratory methods, and designation of a repository were not identified by the archaeological consultant in their scope of work. The consultant's absence of incorporation of geotechnical data into their report, and the lack of well-documented procedures and field data, demonstrated a lack of understanding of geological methods and coastal processes in near-shore environments, despite a self-proclaimed "geomorphology expertise." Such expertise should have been required, given the historic and ethnographic evidence that pointed to that general vicinity as the location of Tse-whit-zen village. Despite these gaps in the consultant's scope of work, WSDOT utilized this consultant.
 - The consultant's budget for the initial archaeological investigation included five days of fieldwork to be conducted by the Principal Investigator and the Project Manager.

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However, the work was conducted by a field archaeologist rather than a Principal Investigator. A non-systematic sampling pattern, malfunctioning equipment, wet weather conditions, and the consultant's lack of experience impacted the field investigation and limited it to three days. Despite these difficulties, the contract and approach to the field investigation were not adjusted.

Key Findings Relating to Study Objective 4 – Interactions with Interested Parties

- WSDOT's consultation for the graving dock, with the State Historic Preservation Officer and the Lower Elwha Klallam Tribe as required by Section 106 of the National Historic Preservation Act, began late in the Port Angeles graving dock project site selection process.
 - The State Historic Preservation Officer (SHPO) was not consulted when the Port Angeles project locale was under consideration for use as the graving dock. The SHPO learned of the Port Angeles graving dock project upon review of the initial archaeological assessment report.
 - Consultation with the Tribe on the Port Angeles site was initiated through a form letter on the same day the on-call archaeology consultant was selected to conduct the initial archaeological assessment in October 2002.
 - In accordance with the site monitoring plan, WSDOT consulting archaeologists were supposed to be on site for the monitoring of the graving dock if construction went below four feet. No archaeologist was at the graving dock site when Tse-whit-zen was discovered on August 16, 2003.
 - Face-to-face meetings with the Tribe occurred after the initial discovery of human bone fragments in August 2003. Multiple meetings and correspondence were generated subsequent to the discovery, and the parties executed a Memorandum of Agreement and site treatment plan in March 2004 so that archaeological recovery and construction could continue.
 - Meetings among the parties continued throughout 2004, and it appears that the parties made good faith attempts at communicating. However, there are divergent opinions about the nature of these communications. Because Foth and Van Dyke was precluded from additional discussions with the Lower Elwha Klallam Tribe after the filing of the lawsuit, the effectiveness of the consultation cannot be determined.
 - The compressed bridge project schedule dictated many actions in the field such as changes in archaeological methodologies. Before methodological changes were made, the signatories to the archaeological Memorandum of Agreement should have been consulted as part of the agreement, and the agreement should have been formally updated to reflect these changes.
 - In order for construction to proceed, WSDOT and the Tribe continued to try to mitigate the site. However, the discovery of a large number of human remains and substantial archaeological features led to a December 10, 2004, request by the Tribe that WSDOT permanently halt construction and abandon the site. Later that month, WSDOT announced a decision to stop work at the Port Angeles graving dock.

Findings – JLARC

The following is a summary of the specific findings JLARC staff identified in their review presented in Chapter 2 of this report.

Key Findings Relating to Study Objective 5 – Fiscal Review

- WSDOT’s internal auditor identified \$86.8 million in expenditures related to the Port Angeles graving dock project. This total includes \$60.5 million for construction at the now abandoned site, and \$26.3 million of inefficiencies to the bridge project caused by the shut down of the site.
- WSDOT’s expenditures for archaeological mitigation were made consistent with agency authority and procedures. In comparison to the overall budget for the entire Hood Canal Bridge project, and the anticipated benefits WSDOT expected the Port Angeles site to provide, these costs were small.
- WSDOT did not develop complete benefit and cost information for utilization of the Port Angeles site for multiple construction projects. It should be noted that the site appeared to offer significant benefits for another bridge project, but these benefits were never quantified, and therefore were not available to assess the value of investing in the location.
- Budget and expenditure information for the project is complicated. This information is not maintained in a standardized way; therefore, project budget and expenditures cannot be readily compared.

Conclusions and Recommendations

Foth and Van Dyke concluded that WSDOT’s project and contract management, geological and cultural resources assessments, and communication and consultation practices were lacking on this project and fell short of industry standards for best management practices. They also concluded that the Department of Archaeology and Historic Preservation could pursue a more active role to work with stakeholders to revise archaeological guidelines and standards, deep site testing protocols, and mapping of potential deeply buried sites in the state.

Foth and Van Dyke’s report includes 29 recommendations and several professional suggestions for ways to:

- Strengthen project management, planning, leadership and decision-making;
- Improve the integration of cultural and environmental resources permitting, and consultation and assessment activities into construction project planning; and
- Enhance cultural resource and geological assessment capabilities, including improving contract management of these services when provided by outside consultants.

Foth & Van Dyke recognizes many actions WSDOT has already taken, as well as those underway to address some of the findings identified in their report.

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JLARC's fiscal review concluded that WSDOT's expenditures for the Port Angeles graving dock were made consistent with the Department's authority and, at the time, were not unreasonable given the anticipated benefits the site offered. JLARC did conclude that the absence of standardized budget, cost, and benefit information hindered the Department's ability to explain its selection of the Port Angeles site for pontoon construction as well as justify the investments in archaeological mitigation. JLARC makes two recommendations to address our findings:

- Continue efforts to improve the financial reporting structure for transportation projects.
- Develop and implement policies and guidelines for the appropriate application of different levels of economic analysis for proposed projects, including benefit-cost analysis, depending on the complexity of the proposed project.

Conduct of the Audit

JLARC began the audit in June 2005 and, consistent with government auditing standards for performance audits, utilized consulting services to obtain specialized expertise relevant to the study scope. After a competitive procurement process, JLARC contracted with the firm of Foth and Van Dyke to fulfill the objectives identified by TPAB.

As discussed above, shortly after beginning the audit, the Lower Elwha Klallam Tribe filed a law suit against the state of Washington and withdrew from participation in the audit interview and discovery process. JLARC notified TPAB that the Tribe's withdrawal from participation would limit the ability of the audit team to fully address the study objective relating to interactions of interested parties. TPAB reviewed this matter at their October 7, 2005, meeting and decided to continue with the project, recognizing the limitations on addressing one of the study objectives.

Audit Timeline

The audit was originally scheduled to be completed in December 2005. In October 2005, TPAB approved a change in the audit timeline, extending the completion of the audit to March 2006 in order to accommodate delays associated with the additional time WSDOT indicated was needed to respond to information requests from the audit team.

In January 2006, JLARC began its technical review process with the audited agencies, which was scheduled to be completed by February 10, 2006. WSDOT notified JLARC on January 20, 2006, that the agency needed additional time for its technical review. TPAB approved a request by WSDOT to extend the technical review to February 17, and the audit was rescheduled for completion by April 7, 2006. JLARC received technical comments from WSDOT on March 27, 2006, and TPAB adjusted the audit timeline again, in order to accommodate this delay. TPAB approved a revised audit completion schedule of June 2, 2006, for the preliminary report with the proposed final report scheduled for June 30, 2006.

Summary of Recommendations

JLARC Fiscal Review

Recommendation 1 – WSDOT should continue its efforts to improve the financial reporting structure for transportation projects so that in the future, project budget and expenditure information is presented in a format that is consistent and meaningful to decision-makers and the public.

Recommendation 2 – WSDOT should establish and implement policies and guidelines for the appropriate application of different levels of economic analysis for proposed projects, including benefit-cost analysis, depending on the type and complexity of the proposed project.

Summary of Recommendations

Foth and Van Dyke

Recommendation 1 – Every new WSDOT process or improvement to an existing process should be accompanied by a mandatory implementation plan and followed by an evaluation plan.

Recommendation 2 – WSDOT should require the use of critical path scheduling of the project development processes used on complex projects.

Recommendation 3 – WSDOT should require all project managers to have project leadership, management and responsibility training.

Recommendation 4 – WSDOT should utilize “strategic partnering” to improve both intra- and inter-agency relationships.

Recommendation 5 – WSDOT should continue to expand the utilization of consulting firms for both project and program management.

Recommendation 6 – WSDOT should encourage and support the development of internal subject matter experts.

Recommendation 7 – WSDOT should develop greater project oversight by its headquarters’ design, project management, and construction services.

Recommendation 8 – WSDOT should incorporate ESA and fisheries considerations at the earliest possible opportunity for any transportation project with the potential for impact.

Recommendation 9 – WSDOT should promote stronger inter-agency permitting team leadership by finding someone who can not only provide a balance between the developer and regulator, but a focus for the overall team.

Recommendation 10 – WSDOT and other State agencies should scope early in the inter-agency permitting team set-up process for the expertise needed and secure these team members for the inter-agency permitting team via an active, ongoing and collaborative form of communication.

Recommendation 11 – WSDOT needs to ensure that objectivity and fairness are maintained and that knowledgeable reviewers assess the On-Call Contract proposals. WSDOT should record the full names and positions of every evaluator. More importantly,

documentation of the consultant selection process, including the consultant submittals and evaluator score sheets, must be retained in accordance with the State's retention schedules.

Recommendation 12 – WSDOT should add a geoarchaeology/geomorphology specialty, including deep site testing, to the list of services in the Cultural Resource On-Call Contract scope of work for two reasons— 1) to enhance the multi-disciplined approach to archaeology and 2) to reduce the chances of identifying significant resources late in the project, particularly during the construction phase, which could impact both the project budget and schedule.

Recommendation 13 – WSDOT should require continuing education and training for all their cultural resources specialists to ensure continuation of the Department's core competency. This training should be taken through the Advisory Council on Historic Preservation (ACHP), the National Highway Institute (NHI), or other qualified institution (e.g., university).

Recommendation 14 – WSDOT should require their project managers to contact their Cultural Resources Program for all of their Section 106 compliance issues. Have a WSDOT cultural resources expert review the project, scope of work, and Area of Potential Effect (APE) before the project is completely designed, and consult early with stakeholders.

Recommendation 15 – WSDOT should implement methods to monitor a consultant's progress between major project milestones.

Recommendation 16 – WSDOT should divide management tasks between a project manager and technical expert on large and complex projects.

Recommendation 17 – WSDOT should have a standard protocol for project documentation that includes writing monthly summaries and recording meeting minutes.

Recommendation 18 – WSDOT should provide a detailed written description of the Area of Potential Effect (APE) to the consultant, and require that a detailed scope of work be submitted from the consultant as part of their proposal back to WSDOT. Any subsequent changes to the APE should be formally documented and discussed with regulatory agencies, Section 106 consulting parties, WSDOT's in-house experts, and WSDOT's archaeological consultant(s) performing the work.

Recommendation 19 – WSDOT should continue to develop deep-site testing protocols to lessen the chances of missing a buried site in the future.

Recommendation 20 – WSDOT should initiate Section 106 consultation early because consultation lies at the core of the Section 106 process. Detailed project information and project changes, such as changes to the APE, need to be submitted to the SHPO as well as tribes, and other federal agencies and stakeholders to maintain an informative dialogue. Meeting minutes should be taken and distributed to the consultants and other stakeholders for eliciting further comments, making corrections, and for future reference should disputes or other needs arise.

Recommendation 21 – WSDOT should consider coordinating with the FHWA to revise WSDOT’s Programmatic Agreement to help ensure that FHWA meets its responsibilities for undertakings pursuant to Sections 106 and 110 of the National Historic Preservation Act; and that these changes should include several key stipulations that are based on current best practices promoted by other state DOTs and FHWA divisions.

Recommendation 22 – WSDOT should continue to pursue the implementation of a formal plan as required by the Millennium and Centennial Accords signed by both the State of Washington and the State of Washington’s federally recognized tribes. WSDOT has already developed a formal plan as outlined in Executive Order 1025.00 and we recommend that they continue to build on this plan as they continue to implement procedural Programmatic Agreements with tribes living in or having ancestral homelands in Washington. WSDOT should consider coordinating with the FHWA when and where possible with continuing to develop procedural Programmatic Agreements with tribes who have ancestral homelands in Washington and live in or outside of the state.

Recommendation 23 – The DAHP and possible interested stakeholders such as WSDOT should adopt or amend a set of guidelines for the application of geology in all archaeological investigations and evaluations. Trained earth scientists should be required or highly recommended in all phases of archaeological investigations. The DAHP, should revise the archaeological guidelines and standards on how to perform fieldwork, laboratory work, and report writing. Geologic field work and documentation both need to be standardized between projects that are presented to the DAHP.

Recommendation 24 – WSDOT, FHWA, and DAHP should work together to secure resources (funding and labor) to help produce some standardized geologic mapping/modeling across areas that are expected to have a large developmental need for archaeological surveys in the next five to ten years

Recommendation 25 – DAHP and consulting archaeologists should begin a dialog with geologists knowledgeable of Washington to discuss interpreted areas of high potential for deeply buried sites.

Recommendation 26 – WSDOT, when defining the Area of Potential Effect on behalf of the lead federal agency, needs to consider what the impacts are to an archaeology site if subjected to vibration, settling/compaction, liquefaction, stress-strain, shearing, dewatering, flooding, oxidation, etc., caused by the undertaking. An archaeologist, other pertinent technical experts, and the SHPO and THPO, need to be consulted on the possible effects that might take place at and to the “site” given a set of circumstances predicted by the designers.

Recommendation 27 – WSDOT should require well-documented and standardized field notes, maps, figures, progress reports, final reports, etc. of their archaeological consultants.

Recommendation 28 – Future WSDOT projects should identify a lead Principal Investigator (e.g., federally qualified archaeologist) and define his/her role in detail.

Recommendation 29 – WSDOT should make certain that signatories to an archaeological Memorandum of Agreement are consulted and agree to any archaeological method changes in writing.

Foth and Van Dyke

Summary of Professional Suggestions

Throughout their report, Foth and Van Dyke make a number of observations that do not warrant audit recommendations, but rather are best addressed by the following professional suggestions. These valuable suggestions are based on the consultants' extensive experience and expertise.

Professional Suggestion A—WSDOT and other state agencies should continue to plan for future identified coastal industrial infrastructure requirements and act years in advance of actual need.

Professional Suggestion B—WSDOT should keep local officials in the project communications throughout the siting, permitting, and construction process.

Professional Suggestion C—WSDOT should explore the potential to establish a procedure for requesting a waiver or modification of environmental windows on a per-project, and justifiable basis.

Professional Suggestion D—WSDOT and the resource agencies could address future inevitable fisheries and coastal habitat impacts from planned transportation projects by considering the potential for up-front compensatory mitigation applicable in a programmatic context.

Professional Suggestion E—Future WSDOT and other state agencies' permit streamlining projects should initiate the inter-agency permitting team process as soon as the development project commences. The process should be included in the development project's timeline. The inter-agency permitting team process should include a focus on communication between members.

Professional Suggestion F—A third-party facilitator should be used to keep interdisciplinary permit streamlining teams on track, address areas of concern, and to help improve communication especially regarding permitting processes and agency needs.

Professional Suggestion G—"Proper Tool for the Proper Job." Develop a culture inside of WSDOT that recognizes that tasks like the identification and conservation of, for example, fisheries, wetlands, shorelines, historic buildings, and archaeology sites are steps in the planning, design, and construction process. Each profession has important elements of their job that are best recognized, interpreted, and implemented by those that are actually trained in that area, and that have a vested interest in updating their own professional (i.e., state-of-the-art) expertise.

Professional Suggestion H—WSDOT and other state agencies should start the inter-agency permitting effort as early as possible in a project timeline and focus on communication among members.

Professional Suggestion I—To enhance the learning process for managing project delivery, we suggest that WSDOT provide in-house mentoring programs to inform participants of the best practices in contract oversight.

Professional Suggestion J—WSDOT’s long-term goal could be to work collaboratively with FHWA and SHPO toward developing a Programmatic Agreement with similar review authority and perhaps allowing WSDOT’s in-house experts to manage much of the Section 106 process.

Professional Suggestion K—To facilitate future government-to-government consultation, WSDOT may wish to request copies of constitutions from tribes who have an interest in Washington. The request for these tribal constitutions may go directly to the tribes or to the Bureau of Indian Affairs.

Professional Suggestion L—The DAHP should seek legislative authority to allow the DAHP to issue licenses for “Identification” surveys on all federally and state funded projects regardless of land ownership.

Agency Responses

Agency responses will be included in the final report.

Acknowledgements

We would like to thank staff at Department of Archeology and Historic Preservation and Washington State Department of Transportation who provided information to assist with this report, Lloyd Brown and Jeff Sawyer served as the primary WSDOT information contacts for our consultants, and Steve McKerney acted as a WSDOT liaison throughout the audit process. We extend special appreciation to Randy Hain, Eric Soderquist, Jeri Sivertson, and Jerry Moore as well as many staff from the Olympic Region and the Cultural Resources program for assistance they provided to JLARC staff and our consultants.

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Review of Port Angeles Graving Dock Project

CHAPTER ONE – STUDY MANDATE AND BACKGROUND

MANDATE

The Legislature established the Transportation Performance Audit Board (TPAB) with the passage of Substitute Senate Bill 5748 during the 2003 Legislative Session. TPAB is authorized to conduct performance reviews and performance audits of transportation agencies. The Legislature provided funding for TPAB audits, and the Transportation Commission provides administrative support to the Board.

In March 2005, TPAB requested that the Joint Legislative Audit and Review Committee (JLARC) conduct a study of the Washington State Department of Transportation's (WSDOT) Hood Canal Bridge east half replacement project, Port Angeles graving dock site. TPAB wanted to review the activities and process which led to the decision to construct a graving dock at the Port Angeles site, and to the abandonment of that construction in December 2004 due to the discovery of a historically significant Native American village with extensive archaeological resources and human remains at the site. Below is TPAB's study scope and objectives:

STUDY SCOPE

This study will review the chain of events, starting with the initial Hood Canal Bridge replacement project, which led to the decision to construct a graving dock at the Port Angeles site and to the abandonment of that construction. The review will address legislative and TPAB member questions concerning the Hood Canal Bridge project and the graving dock. A timeline of events will be developed and an analysis of decision-making will be conducted regarding site selection, archaeological and environmental assessment, and interactions between WSDOT and tribal and governmental agencies. The study will also assess WSDOT procedures on unexpected situations and how they were applied in the decision to stop work at the graving dock site.

STUDY OBJECTIVES

1. Site Selection: review WSDOT decisions to build a graving dock compared to use of a privately owned or privately developed site and to choose the Port Angeles site relative to other locations. This review will include an evaluation of risk assessments applied to these decisions, including the type and quality of information available for each potential site.
2. Environmental Permitting: examine the role of the permitting process in site strategy and selection, including timing and interaction of environmental and archaeological assessments and the impact, if any, of permit streamlining activities.
3. Archaeological Assessment: evaluate the process used to conclude the Port Angeles site was unlikely to contain historic or archaeological resources, including an examination of the archaeology consultant's work and oversight of that work by WSDOT and the Office of Archaeology and Historical Preservation.

4. Interactions of Interested Parties: review the agreements and consultations between WSDOT and local, state, and federal agencies and tribal representatives concerning the Port Angeles site, including the decision to permanently halt use of the site as a graving dock.
5. Fiscal Review: provide a detailed analysis of expenditures on the Port Angeles site, including acquisition cost, compared to budgeted amounts. Assess the salvage value of WSDOT assets at the site.
6. Recommendations: based on the information obtained from the review, identify lessons learned that can be incorporated into project procedures to minimize risks for future WSDOT projects.

BACKGROUND

Hood Canal Bridge East Half Replacement Project

The Hood Canal Bridge is a drawspan pontoon bridge that crosses the Hood Canal between the Kitsap and Olympic peninsulas. It is an important transportation link in Western Washington. A WSDOT study in 1997 reported that the pontoons and anchor system of the east half of the bridge did not meet current engineering standards for seismic forces or severe storms. To prevent catastrophic sinking of the east half of the bridge and bring the design to current standards, WSDOT proposed to reconstruct the east half of the bridge by or before 2007. As part of the Hood Canal Bridge east half replacement project, WSDOT required a site to build bridge pontoons. Known as a graving dock, this site was ultimately located at Port Angeles.

As a requirement of Section 106 of the National Historic Preservation Act, a Cultural Resources Survey was prepared for the Port Angeles site and concluded that it did not contain any historic properties (for example buildings) and had a low probability of containing buried archaeological resources. However, soon after breaking ground on the site in August 2003, human bone fragments were discovered and construction was temporarily halted. In March 2004, a Memorandum of Agreement was signed to address future archaeological work, burial removals, and continued construction at the site. The agreement was entered into by the Federal Highway Administration (FHWA), the Department of Archaeology and Historical Preservation (DAHP),¹ and invited signatories WSDOT, the Lower Elwha Klallam Tribe, and the U.S. Army Corps of Engineers. However, the subsequent discovery of a large number of human remains and substantial archaeological resources led to a December 2004 tribal request that WSDOT permanently halt construction and abandon the site. Later that month, WSDOT announced a decision to stop work on the Port Angeles graving dock and pursue alternatives for constructing the Hood Canal Bridge pontoons.

Conduct of the Audit

The Transportation Performance Audit Board received a number of requests from the Legislature to review the Hood Canal Bridge, Port Angeles graving dock project and approved a study scope and objectives in March 2005. Consistent with government auditing standards for performance audits, JLARC utilized consulting services to obtain specialized expertise relevant to the study

¹ Formerly the Office of Archaeology and Historic Preservation.

Review of Port Angeles Graving Dock Project

scope. In April and May 2005, JLARC conducted a competitive procurement process, and in June 2005, contracted with the firm of Foth and Van Dyke to fulfill the objectives identified by TPAB. Foth and Van Dyke is an established engineering consulting firm headquartered in Green Bay, Wisconsin. They have a national practice, with offices in Michigan, Minnesota, Iowa, New Jersey, and Wisconsin, and managed this project out of their office in Eagan, Minnesota. They have a specialized practice that focuses on archaeology and cultural resources management associated with large construction projects, and assembled a team for this project that also draws on the firm's extensive experience with transportation construction, environmental permitting, and tribal relations.

Foth and Van Dyke reviewed the site selection, environmental permitting, archaeological assessment, and interactions of interested parties for the Port Angeles project. Shortly after the audit began, a lawsuit was filed by the Lower Elwah Klallam Tribe against the state of Washington and the Tribe's legal advisors recommended suspending communication about the site, which constrained Foth and Van Dyke in their effort to fully address the one study objective relating to the interactions of interested parties.

Audit Process

JLARC and its consultant conducted an entrance conference with WSDOT and DAHP to review the audit scope and objectives, as well as the audit schedule and process. The agencies established agency contact coordinators for the audit team. JLARC and its consultant experts coordinated with the agencies and their contact coordinators, as well as with other interested parties to the Port Angeles graving dock project throughout the study. Based on these efforts, the audit team conducted multiple interviews and made a number of written and oral requests for information to both agencies and other interested parties, inviting all parties to share any information they believed relevant to the audit objectives. Two briefings were provided to WSDOT and DAHP by the audit team during the course of the audit. These included an update on the status of fieldwork and a detailed discussion about potential audit findings. Further, as described in greater detail below, the draft audit was provided to the agencies for technical review. The audit process utilized by JLARC maintains independence of the audit team while facilitating communication and providing ample opportunity for both WSDOT and DAHP to demonstrate their performance.

Audit Timeline

The audit was originally scheduled to be completed in December 2005. In October 2005, TPAB approved a change in the audit timeline, extending the completion of the audit to March 2006 in order to accommodate delays associated with the additional time needed for WSDOT to respond to information requests from the audit team.

In January 2006, JLARC began its technical review process with the audited agencies, seeking their comments on matters of technical or factual accuracy in the audit work. That technical review process was scheduled to be completed by February 10, 2006. WSDOT notified JLARC on January 20, 2006, that the agency needed additional time for its technical review. TPAB approved a request by WSDOT to extend the technical review to February 17, and the audit was rescheduled for completion by April 7, 2006.

JLARC received technical comments from WSDOT on March 27, 2006. The audit timeline was adjusted again by TPAB in order to accommodate this delay. TPAB approved a revised audit completion schedule of June 2, 2006, for the preliminary report, with official agency responses due on June 21, and the proposed final report scheduled for June 30, 2006.

Organization of the Report

Chapter 1 provides the study mandate and background. Chapter 2 presents JLARC's fiscal review of the Port Angeles graving dock project. It provides background on the budget history and expenditures on the Port Angeles graving dock project, and makes recommendations for WSDOT to continue its efforts to improve project financial reporting and conduct thorough economic analysis of project alternatives.

Foth and Van Dyke's performance audit follows Chapter 2. The Foth and Van Dyke report contains three sections:

- Section 1 provides background on the Hood Canal Bridge east half replacement project and the regulatory context for the Port Angeles project;
- Section 2 describes Foth and Van Dyke's methodology for conducting the review and the expertise of their project team; and
- Section 3 provides Foth and Van Dyke's detailed analysis of the site selection, environmental permitting, archaeological assessment, and interactions of interested parties for the Port Angeles site.

The report also contains an appendix that provides a timeline of the key activities associated with the Port Angeles graving dock project. Based on the lessons learned from this review, Foth and Van Dyke make 29 recommendations and several professional suggestions intended to strengthen project management and planning, as well as provide for integration of thorough and competent cultural and environmental resources assessment, consultation, and permitting activities for WSDOT projects.

CHAPTER TWO – FISCAL REVIEW

This fiscal review provides background on the budget and expenditures for the Port Angeles graving dock project, as well as the fiscal impact of the project’s closure on the overall Hood Canal Bridge east half replacement project budget. The Department’s project control and budget monitoring activities for this project were also examined to ensure they were consistent with WSDOT internal procedures and authority. JLARC reviewed whether there were financial indicators that might have shown whether or not continued investment at the Port Angeles site was appropriate from a financial standpoint. Finally, the chapter concludes with an update on WSDOT’s ongoing analysis of salvage and surplus materials at the Port Angeles site.

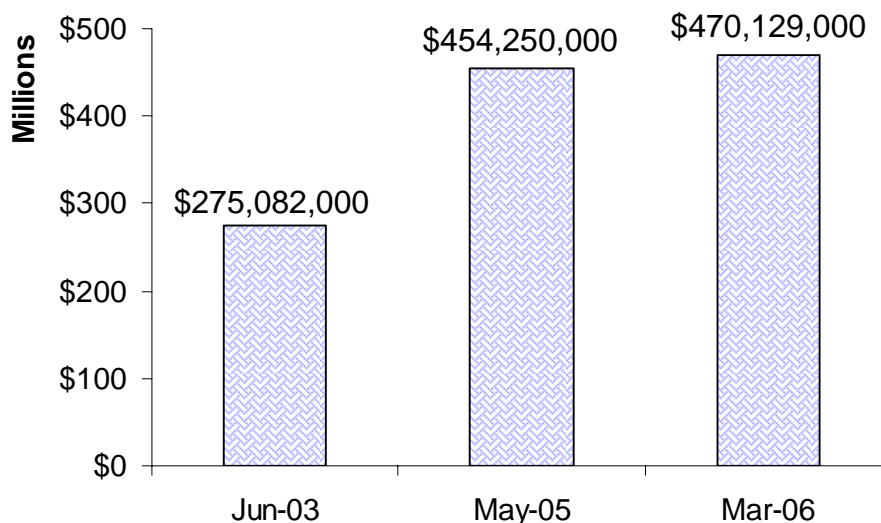
BACKGROUND – BUDGET HISTORY

Budget History – Hood Canal Bridge East Half Replacement Project

In June 2003, the planned budget for the Hood Canal Bridge project was \$275.08 million, with the planned date for completion of the project scheduled for 2007. After construction at the Port Angeles site ended in December 2004, WSDOT developed a revised budget for completing the bridge project by utilizing alternative sites for pontoon construction. In May 2005, \$454.2 million for the Hood Canal Bridge project was included in the Legislature’s revised Transportation Budget. In March 2006, the Legislature adjusted the bridge project budget to \$470.1 million. The increase of \$15.8 million between May 2005 and March 2006 was to address contract negotiations and engineering refinements that occurred during the summer of 2005.

The “budgeted” date to complete the Hood Canal Bridge east half replacement project is now December 2010.

Figure 1 – Hood Canal Bridge East Half Replacement Project Budget Growth



Source: JLARC.

Review of Port Angeles Graving Dock Project

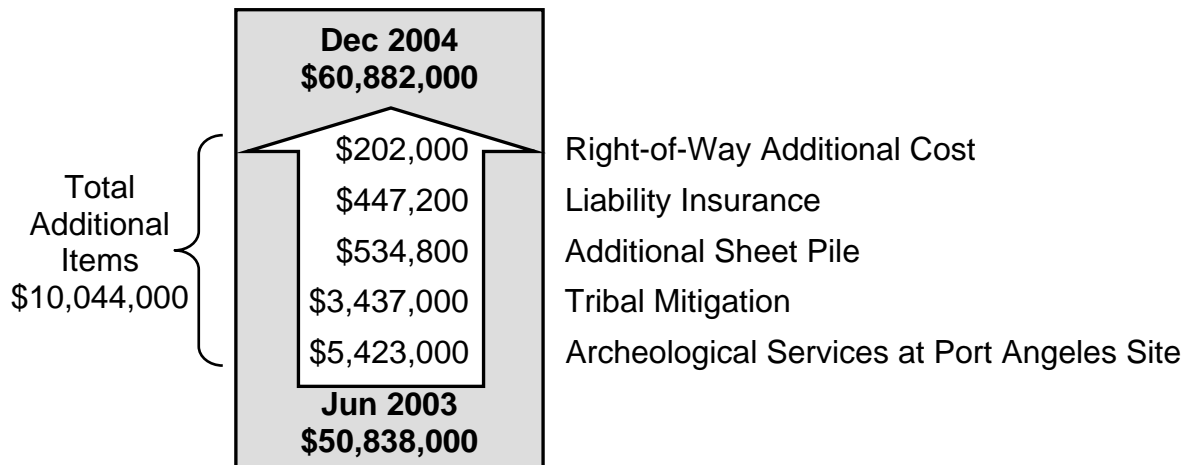
The bridge project budget increase from June 2003 to March 2006 of \$195 million is attributable to a variety of factors which include not only the Port Angeles site but also:

- The cost of major materials for future work, including materials storage, warranties, and sub-contractor and supplier impacts.
- Additional project design and engineering costs associated with project delays and changes at the bridge site.
- Remaining archaeological work (estimated cost to complete archaeology reports and complete payments for recovery efforts).
- Construction management cost increases due to engineering management at five different construction sites around Puget Sound: pontoon casting in Tacoma; draw section assembly in Seattle; pontoons elevated roadway construction and pontoon moorage at the Port of Seattle; and anchor construction and work at the bridge site in Port Gamble.

WSDOT's Internal Budget Tracking for the Port Angeles Site Portion of Hood Canal Bridge Project

The previous section provides the background budget history on the entire Hood Canal Bridge east half replacement project. This section presents detail about the Port Angeles site portion of that budget. In June 2003, WSDOT's internal estimated budget for the Port Angeles graving dock was \$50.8 million, which reflected the actual contract award selected from bids submitted by construction vendors. This figure also included the property acquisition cost of \$5.05 million for the Port of Port Angeles property. Between the June 2003 award date and the December 2004 project closure date, WSDOT's internal budget for the Port Angeles graving dock site grew by 20 percent to \$60.8 million. This was attributable to a number of things including archaeological services, mitigation payment to Lower Elwha Klallam Tribe, liability insurance, additional property acquisition costs and sheet pile costs, and landscaping.

Figure 2 – Growth in WSDOT's Internal Budget Estimates for the Port Angeles Site



Source: JLARC.

JLARC reviewed WSDOT’s project control procedures and the records that document their executive approval of program adjustments for the above budget increases. Our review of the records and follow-up interviews confirmed that due to the timeline and sensitivity of the project, WSDOT’s Assistant Secretary approved the project control decisions relating to the Port Angeles site (rather than project control staff). This was done consistent with agency process, procedures and legal authority.

Background – Expenditures

Expenditures Related to the Port Angeles Site

The above sections provide information about the budget for the Hood Canal Bridge east half replacement project and the Port Angeles site. This section provides information about expenditures related to the Port Angeles site. In July 2005, the WSDOT internal audit division completed an audit of the actual and accrued expenses related to the Port Angeles site and the impacts of its closure. The WSDOT internal auditor evaluated the impact of the project shut down on other aspects of the Hood Canal Bridge project. The WSDOT internal auditor identified expenditures for the Port Angeles graving dock site of \$60.5 million, as well as other inefficiencies attributable to project shut down totaling \$26.3 million for a total of \$86.8 million.

The \$26.3 million of identified inefficiencies included:

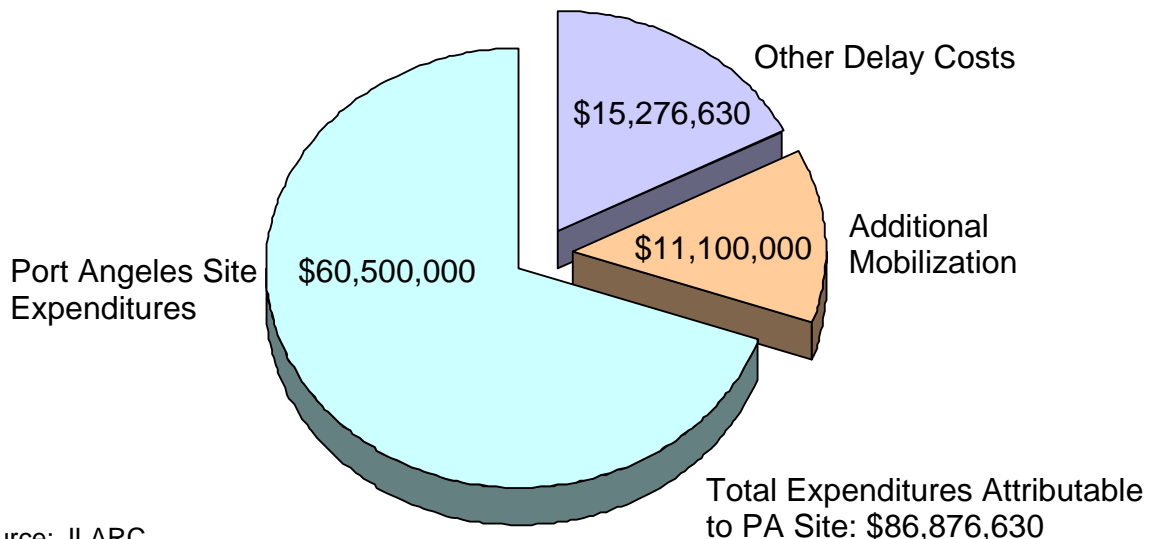
- Additional mobilization costs – \$11.2 million.

(Mobilization is a category of expenses for all of the materials and activities associated with assembling the equipment, supplies, and staff at the work site.)

- Other delay costs relating to selection of a new graving dock site and repair of the east end of the bridge anchor cables – \$15.2 million.

(Delay costs include construction engineering/reengineering, new site assessment, negotiations with the construction contractor.)

Figure 3 – Port Angeles Site Expenditures



Source: JLARC.

Assembling this analysis of the budget and expenditure data for the Port Angeles graving dock project required multiple interviews and review of WSDOT historical budget summaries, WSDOT expenditure tracking spreadsheets, and other information. During the course of our review, WSDOT's Assistant Administrator for the Olympic Region, who is also the current Hood Canal Bridge Project Director, prepared a thorough history of the Hood Canal Bridge project budget and was extremely helpful throughout our fiscal review. Likewise, the WSDOT Port Orchard field staff and staff from the Internal Audit office undertook the task of identifying the expenditures and assigning costs for the Port Angeles site from the total expenditures for the entire bridge project. This activity began prior to JLARC beginning its review and WSDOT provided the information which is presented above.

Despite these significant efforts on the part of WSDOT, it was difficult to analyze the data because of differences between WSDOT's documentation of budgeted project dollars for the Port Angeles site and their publicly reported project expenditures, which were still being finalized during the course of this audit. This difficulty is not unusual given the complexity of the project and the limitations of WSDOT's accounting system. However, providing a comparison of a project budget to expenditures is a common question that decision-makers and the public have. Findings of earlier JLARC and TPAB studies confirm the need for consistent information about project budget and expenditures. Given that, JLARC makes the following recommendation.

Recommendation 1

WSDOT should continue its efforts to improve the financial reporting structure for transportation projects so that in the future project budget and expenditure information is presented in a format that is consistent and meaningful to decision-makers and the public.

Revised Budget for Pontoon and Anchor Construction After Closure of the Port Angeles Site

WSDOT's October 2005 revised internal budget for construction of the pontoons at the new location is \$220.5 million (\$113.5 million increase from the previously budgeted amount of \$106.9 million). This does not include the \$86.8 million of expenditures at the Port Angeles site. Higher costs for the pontoon construction, testing, float-in, anchor construction and contract management and engineering oversight reflect:

- Increases in material and labor costs due to the three-year project delay.
- Impacts due to working at a graving dock one-fifth the size of the facility that would have been built in Port Angeles (pontoons will be built in four cycles, rather than the one to two cycles planned for Port Angeles).
- Limited storage and fabrication areas near the new construction site at Concrete Technologies in Tacoma. This requires multiple job sites:
 - Pontoon casting: Concrete Technologies in Tacoma
 - Pontoon outfitting: testing, moorage: Port of Seattle
 - Anchor construction: site selection in progress

Did continued investment at the site after archaeological discovery make sense?

In an attempt to keep the site viable for a graving dock, WSDOT made significant financial investment in archaeological recovery and mitigation. JLARC examined whether continued investment in archaeological recovery and mitigation at the site made sense from a financial standpoint. In doing so, we compared the difference between \$86.8 million in expenses identified by the WSDOT internal auditor for the Port Angeles site, to the additional amount now needed for pontoon and anchor construction at an alternative location (\$113.5 million).

We deflated WSDOT's revised budgeted costs back to December 2004, when work at the Port Angeles site ended, and compared the difference. We found that even with the expenses for archaeology and the inefficiencies identified by WSDOT's internal auditor for shutting the project down, had the Port Angeles site been successful, WSDOT would have saved the state approximately \$15 million.

WSDOT anticipated that the graving dock site at Port Angeles would be utilized not only for construction of pontoons for the Hood Canal Bridge project, but also in the future for the larger, State Route 520 bridge project. The \$15 million did not include any potential cost avoidance the state may have realized had the Port Angeles site been utilized for building pontoons for the SR 520 project. While complete analysis of potential savings was not possible with the available data, this comparison does provide a context for why WSDOT continued to pursue making the Port Angeles site a viable option for pontoon construction.

Were there financial indicators that may have shown further investment at the Port Angeles Site was not appropriate from a financial standpoint?

The Port Angeles graving dock site costs were only a portion of the overall Hood Canal Bridge project budget. The impact of the anticipated time savings of building a large capacity graving dock at Port Angeles, and that time savings and related cost impact to the overall bridge project were the indicators used by WSDOT. WSDOT anticipated that finding an alternative graving dock site would take one to two years, so mitigation efforts were considered appropriate by the agency. WSDOT indicated that they felt the potential negative impact of schedule delays justified investments in mitigating the Port Angeles site. However, there was not a thorough financial analysis of this.

Absent a more explicit financial indicator, WSDOT explained that the following key areas were indicators to WSDOT that the Port Angeles graving dock site was not viable for the bridge project at the time the project site was abandoned in December 2004:

- Loss of control of schedule and budget for Port Angeles and that impact to the overall Hood Canal Bridge project.
- The cost to keep equipment, staff, materials ready to move to production (contractor stand by).
- The impact of schedule uncertainty on the contractual relationship with the contractor when delays constrain a vendor's ability to find efficiencies. The schedule impact at Port Angeles graving dock went well beyond any project risk estimates and contingencies considered at the time of contract award.

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- Possibility of a third party lawsuit regarding the adequacy of the original National Environmental Policy Act (NEPA) documentation and the associated scheduling delays such a lawsuit might trigger for the entire bridge project.

While JLARC did not find that WSDOT had thoroughly quantified these impacts, our analysis of the cost differences between the Port Angeles site and the 2005 budget for pontoon construction are consistent with WSDOT's professional judgment and practice.

Note:

During technical review for this audit, WSDOT provided a document that described an analysis completed in November 2004. WSDOT had assembled a team to develop a "back of the envelope estimate" to quantify both the additional cost and time delay to the bridge project if the Port Angeles site was abandoned. The document, titled "Hood Canal Bridge Replacement Port Angeles Graving Dock Plan B" provided a "rough initial estimate of the cost and delay if an alternative to the Port Angeles site was to be considered" by Department Executives. The WSDOT document further explains that the team's effort was "intended to serve as more of a "backstop" value to consider as the Department Executives make decisions on the current site and how to proceed in the future." The team concluded that the most viable site for a new graving yard would be at Port Gamble, and that relocating the graving site to Port Gamble would require an additional two-year delay and cost an additional \$60 million. The report recognized that a more formal and in-depth analysis would need to be performed should an alternative site be pursued.

Economic Analysis of Transportation Projects

The U.S. Office of Management and Budget, Department of Transportation, and Government Accountability Office provide guidance on the utilization of economic analysis of major infrastructure investments. Overall, the guidelines suggest that economic analysis is a critical component of infrastructure investment and provide public transportation agencies with the information to target resources in terms of maximizing benefits to the public, account for their decisions, and demonstrate stewardship of public resources. Benefit-cost analysis is one type of economic analysis that provides documentation and structure for analysis of the quantitative and qualitative benefits of project alternatives. This information is particularly worthwhile for projects of major fiscal, social, environmental, and economic impact. Used properly, benefit-cost analysis reveals the economically efficient investment alternative, i.e., the one that maximizes the net benefits to the public from an allocation of resources.² The California and Minnesota Departments of Transportation have established policies and guidelines for when to use benefit-cost analysis, recognizing its utility for analyzing and documenting the decision-making concerning certain types of transportation projects.

WSDOT did conduct a cost estimate validation process (CEVP) study of graving dock options. The report does not indicate any consideration of an identified benefit in having any site available for the SR 520 project. The CEVP report did analyze the risk of the various options. However, the risk regarding possible archaeological impacts at Port Angeles was not based on accurate information. This CEVP analysis was not used as part of a full benefit-cost analysis of the Port Angeles site for a graving dock.

WSDOT does utilize value engineering principles in its construction design activities, and some aspects of economic analysis are typically included in value engineering activities. Value

² U.S. Department of Transportation, Federal Highway Administration, Economic Analysis Primer, 2003.

engineering is a systematic team approach, used to analyze and improve value in a product, facility design, system or service. However, value engineering is not a substitute for benefit-cost analysis of project alternatives.

A benefit-cost analysis of the Port Angeles graving dock site that included the possible benefit of building State Route 520 bridge pontoons at the site would have been a useful management tool for the Department and provided greater documentation and accountability for its decision-making during the course of the Port Angeles graving dock construction project.

Recommendation 2

WSDOT should establish and implement policies and guidelines for the appropriate application of different levels of economic analysis for proposed projects, including benefit-cost analysis, depending on the type and complexity of the proposed project.

Ongoing Analysis of Salvage Value at the Port Angeles Site

WSDOT's estimated value of new materials on hand at the Port Angeles graving dock site is approximately \$1.5 million. Salvage value of surplus and salvage items is estimated by WSDOT to be approximately \$500,000, although actual value could vary dependant upon prevailing market conditions and general interest in salvage items.

WSDOT developed a detailed inventory of material on hand for the project. Items on the inventory consist of materials already procured by the contractor for use on the project at the time of project abandonment. At the time of this study WSDOT was working to develop an appropriate salvage process and value. Certain materials will be returned to the supplier for restocking with the State receiving a credit. Remaining materials would be designated for surplus disposal in accordance with the agency procedures and state rules and regulations. (WSDOT Personal Property Manual, M72-91 and RCW 43.19.190).

WSDOT has coordinated with the Federal Highway Administration (FHWA) to ensure surplus materials for this unique situation meet FHWA requirements and expectations with regard to material procured with federal highway aid program funds. FHWA has authorized WSDOT to proceed using the state approved surplus material disposal procedures.

Surplus materials for the project fall into two basic categories: 1) archaeological equipment and 2) graving dock materials. For archaeological tools and equipment, WSDOT determined their salvage value to be less than \$500. These materials were either donated to Eastern Washington University Archaeological Studies program or issued to WSDOT maintenance staff for use in roadway maintenance. This equipment typically consisted of shovels, wheelbarrows, buckets and sifting screens. Graving dock materials consist of specialized equipment such as pumps, valves and screens, or various steel products such as piling and reinforcing steel intended to be utilized in graving dock construction. WSDOT will consider using these items in another WSDOT project (Hood Canal Bridge pontoon fabrication or SR 520 Bridge graving dock) depending on that determination the second option would be to return the items to vendors/suppliers incurring various restocking fees. Hood Canal Bridge pontoon fabrication and 520 Bridge materials needs are being identified by WSDOT, materials not useful will be designated surplus.

WSDOT reported in September 2005 that they expect to proceed through the surplus materials approval procedures and accomplish disposal of surplus materials by March 2006. However,

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WSDOT does note that it could take as much as 12 months to finalize surplus disposal and realize the revenue generated by the process. Revenue generated through the surplus disposal process is generally designated for the general transportation fund and not certain projects within WSDOT's program.

With respect to removal of installed materials at the site, legal issues relating to the National Historic Preservation Act and implementing regulations would need to be considered. The Section 106 of the Act requires entities to consider affects of an undertaking on historic properties eligible for inclusion in the National Register of Historic Places. On the former graving dock site, this would mean taking into consideration whether the act of removing surplus materials for salvage would have an adverse affect upon the village site or the archaeological resources still contained there. This analysis has not been pursued by WSDOT.

Report

Technical and Process Review of the Hood Canal Bridge and Port Angeles Graving Dock Project

Project Number: 05W017

Joint Legislative Audit and Review Committee
Olympia, Washington

May 2006

Technical and Process Review of the Hood Canal Bridge and Port Angeles Graving Dock Project

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Technical and Process Review of the Hood Canal Bridge and Port Angeles Graving Dock Project

Project Number: 05W017

Prepared for
Joint Legislative Audit and Review Committee
506 16th Avenue S.E.
Olympia, Washington 98501-2323

Prepared by
Foth & Van Dyke and Associates, Inc.

May 2006

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Technical and Process Review of the Hood Canal Bridge and Port Angeles Graving Dock Project

List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
AIA	Association of Iowa Archaeologists
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
BA	Biological Assessment
BIA	Bureau of Indian Affairs
BO	Biological Opinion
CEVP	Cost Estimate Validation Process
CRM	Cultural Resource Management
CSO	Consultant Services Office, WSDOT
CTC	Concrete Technology Corp.
CZM	Coastal Zone Management
DAHP	Department of Archaeology and Historic Preservation (after July 24, 2005)
DNR	Washington State Department of Natural Resources
DNS	Determination of Nonsignificance
DOE	Washington State Department of Ecology
DOT	Department of Transportation
DSY	Duwamish Ship Yards
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPSA	Environmental Permit Streamlining Act
ESA	Endangered Species Act
ESO	Environmental Services Office, WSDOT
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FVDxxxx	Foth & Van Dyke and Associates, Inc. Master Document Catalog number
GIS	Geographic Information System
GOIA	Governor's Office of Indian Affairs
GPS	Global Positioning System
HABS/HAER	Historic American Building Survey/Historic American Engineering Records
H&LP	Highways and Local Programs, WSDOT
HCB	Hood Canal Bridge
IDT	Interdisciplinary Team
IPT	Interagency Project Team
ISTEA	Intermodal Surface Transportation Efficiency Act
JLARC	Joint Legislative Audit and Review Committee
KDOT	Kansas Department of Transportation
LAAS	Larson Anthropological Archaeological Services, Ltd.
LEKT	Lower Elwha Klallam Tribe

MDC	Master Document Catalog
Mn/DOT	Minnesota Department of Transportation
MOA	Memorandum of Agreement
NAGPRA	Native American Graves Protection and Repatriation Act
NMFS	National Marine Fisheries Services
NATHPO	National Association of Tribal Historic Preservation Officers
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NHI	National Highway Institute
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OAHP	Office of Archaeology and Historic Preservation (before-July 24, 2005)
OFM	Office of Financial Management, WSDOT
OSA	Office of the State Archaeologist
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
PDT	Project Delivery Team
RCW	Revised Code of Washington
RFP	Request for Proposal(s)
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Officer
T2	WSDOT Highway and Local Education Programs, Currently WST2
TPAB	Transportation Performance Audit Board
TE	Transportation Enhancement
TEA-21	Transportation Equity Act for the 21 st Century
THPO	Tribal Historic Preservation Officer
TPEAC	Transportation Permit Efficiency and Accountability Committee
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USDOT	United States Department of Transportation
USFW	United States Fish and Wildlife Service
WDFW	Washington State Department of Fish and Wildlife
WisDOT	Wisconsin Department of Transportation
WSDOT	Washington State Department of Transportation
WSHS	Western Shore Heritage Services, Inc.
WST2	WSDOT Highway and Local Education Programs, Formerly T2

Technical and Process Review of the Hood Canal Bridge and Port Angeles Graving Dock Project

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Appendices

Appendix A Timeline of Major Hood Canal Bridge and Graving Dock Project Events

1 Introduction

Section 1 of this report is an introduction to the Washington Department of Transportation's (WSDOT's) Hood Canal Bridge (HCB) and Port Angeles graving dock project under review by the Joint Legislative Audit and Review Committee (JLARC). JLARC's audit of the Port Angeles graving dock project results from a mandate by the Transportation Performance Audit Board (TPAB). TPAB was established by the Legislature in 2003, and is authorized to conduct performance reviews and performance audits of transportation agencies. Foth & Van Dyke's study includes a review of the chain of events, beginning from the time that the Hood Canal Bridge (HCB) replacement project was authorized, which led to the decision to construct a graving dock at the Port Angeles locale, up until the abandonment of the Port Angeles graving dock site in December 2004. Our study objectives include a review of 1) Site Selection; 2) Environmental Permitting; 3) Archaeological Assessment; and 4) Interactions of Interested Parties. The information learned from this review will be used to make recommendations and professional suggestions for procedures that could minimize risk or improve efficiencies in practice for future WSDOT projects. JLARC will provide a fiscal review of the Port Angeles project.

To fulfill our objectives, Foth & Van Dyke assembled a team of transportation, environmental permitting, and cultural resources specialists to review available documents, including correspondence, reports, meeting notes, schedules, telephone logs, contracts, National Historic Preservation Act (NHPA) Section 106 required documents, archaeological licenses, and environmental permits. Additionally, in-person and telephone interviews were conducted with key stakeholders in this project including representatives of the WSDOT, Western Shore Heritage Services, Inc. (WSHS), Larson Anthropological and Archaeological Services Ltd. (LAAS), Lower Elwha Klallam Tribe (LEKT), Port Angeles Port Authority, city of Port Angeles, Federal Highway Administration (FHWA), Washington State Historic Preservation Officer (SHPO), State Archaeologist, Washington State Department of Ecology (DOE), Washington State Department of Fish and Wildlife (WDFW), National Oceanic and Atmospheric Administration (NOAA), United States Army Corps of Engineers (USACE), United States Fish and Wildlife Service (USFW), and others.

Our team reviewed pertinent information on current best approaches to environmental streamlining, tribal consultation, and archaeological Cultural Resources Management published by the FHWA, American Association of State Highway and Transportation Officials (AASHTO) Center for Environmental Excellence, National Organization of Tribal Historic Preservation Officers (NATHPO), and various state DOTs. A lawsuit was filed by the LEKT in August of 2005 against the state of Washington and, subsequently, the tribe declined all further interviews with their members beyond our introductory meeting. Foth & Van Dyke's review of the interactions of interested parties will incorporate the LEKT's view as interpreted from our initial meeting with select tribal council members and their attorney as well as existing documented project correspondence.

This report is formatted by subsections to correspond with the study objectives provided to Foth & Van Dyke by JLARC in the TPAB study scope dated March 31, 2005. The government,

scientific, engineering, and regulatory worlds are rich with acronyms. Hence, a list of commonly used acronyms has been included at the beginning of this report.

Foth & Van Dyke's review was limited with respect to both funding and time limits. Therefore, this report could not represent an exhaustive review of every possible document, nor could every document or interview statement be verified by our team in this large and complicated transportation project. Our findings and recommendations are based upon our analysis of the available project records and interviews, and are informed by professional experience in the pertinent fields of expertise. Our review herein did not intend to assign fault or blame of an individual or agency, although our comments are often candid. One of our goals was to identify "lessons learned" that could be useful in improving agency processes that were employed during the development of the HCB graving dock project. Also, our team set out to help the engineering and science professionals become better members of both individual and collaborative project teams.

1.1 Hood Canal Bridge Project Background and Environmental Streamlining

The Hood Canal Bridge (HCB) (SR 104) is a drawspan pontoon bridge that crosses the Hood Canal between the Kitsap and Olympic peninsulas. The HCB is a "vital transportation link between the Northern Olympic Peninsula and Kitsap, King, Pierce, and Snohomish counties" (WSDOT, 2005). Average daily traffic on this two-lane bridge ranges from 20,000 (weekdays) to 25,000 (weekends) vehicles per day. The shore-to-shore distance spanned by the bridge is 7,869 feet (1.49 miles). The Hood Canal near the bridge has a tidal range of up to 16.5 feet, and depths ranging from 80-340 feet below the water body's surface. Approximately 6,470 feet of the bridge's superstructure is built upon large pontoons, each approximately 360 feet in length. The pontoons are held in place by 3-inch diameter steel cables that are attached to anchors at the floor of the Hood Canal. Each anchor weighs between 1,200 and 3,500 tons.

The bridge was open to traffic in 1961 and has since been subjected to a severe marine environment. The west half of the HCB sank after a storm in 1979. A WSDOT study in 1997 reported that the approach spans, pontoons, and anchor system of the east half of the bridge did not meet current standards for resisting seismic forces and severe storms. To prevent catastrophic sinking of the east half of the bridge and to bring the design to current standards, WSDOT proposed to reconstruct the east half of the bridge by or before 2007. The reconstruction project required a site to build the large pontoons and anchors. A "graving dock" and other options were considered for the construction of the pontoons and anchors. A graving dock is a shoreline dry dock that is excavated and constructed for the purpose of repairing or building large ships and other sea-, ocean-, or large lake-going vessels. A graving dock allows for the construction, maintenance, or repair of a vessel in a dry construction facility, which can later be flooded and allow the vessel to move out to the main body of water. The pontoons and anchors can be built at either the same or different facilities.

Several environmental factors needed to be addressed in order to accomplish bridge, pontoon, and anchor construction. Many environmental concerns occur in the region, which has strict

local and state environmental regulations. Anadromous (salmonids) fish habitat, and stormwater runoff were of particular environmental concern on this project.

“Streamlining” in the transportation process is the term used for efforts and initiatives to expedite the permitting and approval process for transportation projects. Environmental streamlining for state highway projects became legislation with the federal Transportation Equity Act for the 21st Century (TEA-21) in 1998. TEA-21 encouraged cooperation between transportation and environmental agencies to identify overlapping and/or conflicting responsibilities/requirements in order to provide general time frames for project development. This inter-agency cooperation is essential to the overall success of streamlining. Environmental streamlining is the term used to improve the delivery time of transportation projects in conjunction with the protection and enhancement of the environment. The goals of environmental streamlining include 1) improve timeliness in project delivery; 2) integrate the review and permitting process; 3) include full and early participation of all agencies that must review a project or issue a permit or license; 4) coordinate time schedules with other agencies; and 5) improve National Environmental Policy Act (NEPA) decision-making.

In May 2001, the Washington State Legislature passed Senate Bill 6188 and the Transportation Permit Efficiency and Accountability Committee (TPEAC) was created (Chapter 47.06 RCW). This law was intended to coordinate and streamline the environmental permitting process for transportation projects into a “one-stop permit decision-making” process. Three highway projects were selected as pilot projects to assess the efficacy of the permit streamlining process. The HCB was selected by TPEAC in November 2001 as the pilot project to be used as an example of streamlining on a rural corridor that was important for economic vitality. The TPEAC goal of this HCB pilot project was for the WSDOT, in cooperation with federal, state and local agencies and tribal governments, to streamline the permitting process. The cooperative effort focused on the natural environment rather than the built environment. As a result an important state agency, the Department of Archaeology and Historic Preservation (DAHP; formerly OAHP) and its representatives, specifically the State Historic Preservation Officer (SHPO), was not included in development and implementation of the streamlining process.

1.2 Regulatory Context for the Port Angeles Project

Both the environmental permitting and the Phase I archaeological investigation of the Port Angeles graving dock was necessitated by state and federal mandates, including the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. § 4321-4347); the State Environmental Policy Act (SEPA) (Chapter 43.21C RCW); Section 10 of the Rivers and Harbors Act; Section 404 of the Clean Water Act; Endangered Species Act of 1973 (16 U.S.C. § 1531-1544, as amended); Section 4(f) (23 U.S.C. § 138 and 49 U.S.C. § 303); and Section 106 of the National Historic Preservation Act (NHPA), as amended (16 U.S.C. § 470). These regulatory mandates were enacted to require assessment of the environmental consequences of government (federal and state) actions or undertakings on the human environment including the natural and the built environments. This report subsection provides the context for understanding the major environmental and cultural resources mandates involved in the Port Angeles graving dock project. Many permits and approvals were needed for this project; and, there were several critical regulations identified that had significant implications, both to the project pathway and

the remaining regulatory programs. The following subsections briefly describe these critical regulations, which include the National Environmental Policy Act (NEPA), State Environmental Policy Act (SEPA), Endangered Species Act (ESA), Section 106 of the National Historic Preservation Act, and Section 4(f) of USDOT Act.

1.2.1 National Environmental Policy Act and State Environmental Policy Act

The National Environmental Policy Act (NEPA; 42 U.S.C. § 4321-4347, as amended) was passed into law in 1969 and is a procedural law that establishes a framework for integrating environmental considerations into federal agency decision-making (http://ceq.eh.doe.gov/nepa/regs/ceq/toc_ceq.htm). Federal undertakings that could impact the quality of the human environment (natural and built environments, including archaeological resources) must have the potential environmental impacts of alternative undertakings considered and must be documented prior to the undertaking. The documentation may include an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). All federal actions, which involve federal funding, federal permits and approvals, federal lands and facilities, and federal agency rulemaking, are subject to NEPA review. NEPA further establishes the policy of coordinating compliance with the laws under the NEPA “umbrella” including Section 4(f), the National Historic Preservation Act (NHPA), Executive Order (EO) 13175 (Consultation and Coordination with Indian Tribal Governments), and Section 404 of the Clean Water Act to name a few. These other statutory requirements do not absolutely have to be fulfilled prior to the completion of the NEPA process. However, if a project is excluded from the NEPA process (e.g., categorical exclusions), it is not automatically exempt from other environmental regulations and mandates.

The State Environmental Policy Act (SEPA), Chapter 43.21C RCW, is a state of Washington procedural law (enacted in 1971) that establishes a framework for integrating environmental considerations into state and local agency decision-making (<http://www.ecy.wa.gov/pubs/0206013.pdf>). SEPA requires state or local proposals or undertakings that could impact the human environment to first evaluate the environmental consequences of the action. The information provided during the SEPA process can help to refine a proposal in order to minimize environmental impacts or to deny a proposal when adverse environmental impacts are identified.

Under both NEPA and SEPA, a lead agency is to be designated when developing a proposed action. NEPA and SEPA are to be integrated with agency activities at the earliest possible time to ensure that planning decisions reflect environmental planning. Early coordination with other agencies and the public is an essential part of the project development process. The HCB project is funded by federal monies; therefore, the lead agency for the NEPA process was the Federal Highway Administration (FHWA). A lead agency is responsible for supervising the preparation of the environmental document and coordinating the process with cooperating agencies. WSDOT, being the state agency required to follow SEPA, adopted their NEPA Environmental Assessment for SEPA compliance.

1.2.2 The Endangered Species Act (ESA)

Congress passed the Endangered Species Act (ESA) in 1973 (16U.S.C§1531-1544, as amended). In essence, the law protects those species threatened or endangered with extinction. The law

provides for listing species, developing recovery plans, and designating critical habitat for listed species. Quoting the Federal Wildlife Laws Handbook, “The purposes of the Act are to: provide a means of conserving the ecosystems upon which endangered and threatened species depend; provide a program for conserving those species; take steps necessary to achieve those purposes.”

Any federal involvement in a project, from funding to permitting, includes review of potential impact to listed species, as the law requires each agency to use their authority in furtherance of the Act’s purposes. There are criminal and civil penalties for violation of the Act.

In the state of Washington, State statutes do not provide the same level of protection as the federal law, and thus for the HCB project, the regulatory focus was on federally listed species.

There are currently 40 species on the federal list of threatened and endangered species in Washington (USFWS). Listed species which were reviewed for impact related to the HCB project included the bald eagle, marbled murrelet, brown pelican, northern spotted owl, Steller sea lion, leatherback sea turtle, and humpback whale; of particular concern and focus were the Puget Sound chinook salmon, Hood Canal summer-run chum, and Coastal/Puget Sound bull trout (FVD1622 and FVD1623).

Federal regulation and administration of the ESA is divided between the US Fish and Wildlife Service (USFWS) and NOAA Fisheries (NOAA), with NOAA responsible for marine species. Both federal agencies were involved in the review and permitting of the HCB project.

1.2.3 Section 4(f) of USDOT Act (49 U.S.C. 303)

Section 4(f) of USDOT Act (23 U.S.C. § 138 and 49 U.S.C. § 303, as amended) is the policy that promotes preserving the natural beauty of resources that are crossed by transportation activities or facilities. Section 4(f) resources include publicly owned parks, recreation areas, wildlife or waterfowl refuges, public or privately owned historic sites, and archaeological sites that are important for in-place preservation (<http://environment.fhwa.dot.gov/projdev/4fpolicy.htm>). A Section 4(f) resource may be used by the DOT if there is no feasible or prudent alternative to such use and the project includes all possible planning to minimize harm to the resource. Section 4(f) is more stringent than Section 106, which requires only that effects on historic properties be considered. “Section 4(f) does not apply if FHWA, after consultation with the SHPO and/or THPO [Tribal Historic Preservation Officer], determines that the archaeological resource is important chiefly because of what can be learned by data recovery...and has minimal value for preservation in place” (<http://environment.fhwa.dot.gov/projdev/4fpolicy.htm>). The FHWA’s Determination of Eligibility found that Tse-whit-zen village was eligible for listing on the National Register of Historic Places (NRHP) under Criterion D for important data that could be recovered from the site (see the next subsection below for further explanation of the NRHP nomination criteria). The NEPA re-evaluation in March 2003 determined that the Port Angeles graving dock project area was not a 4(f) land.

1.2.4 Section 106 of the National Historic Preservation Act of 1966

Section 106 of the National Historic Preservation Act (NHPA; 16 U.S.C. § 470, as amended) of 1966, requires that federal agencies take into account the effects of their undertakings on historic properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP) and to provide the Advisory Council on Historic Preservation (ACHP) opportunity to comment on the undertaking (<http://www.achp.gov>). An “undertaking” is considered to be a project that is federally funded; carried out on behalf of a federal agency; requires a federal permit, license or approval; and is subject to state or local regulation administered pursuant to approval by a federal agency. Historic properties consist of prehistoric or historic sites, structures, buildings, objects, or features that are made or modified in the course of human activities. Historic properties are eligible to be nominated to the NRHP if the properties’ quality of significance in American history, architecture, archeology, engineering, and culture is present in some form of a district, site, building, structure, or object and the properties possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- ◆ *Criterion A.* Are associated with events that have made a significant contribution to the broad patterns of our history; or
- ◆ *Criterion B.* Are associated with the lives of significant persons in our past; or
- ◆ *Criterion C.* Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- ◆ *Criterion D.* Have yielded or may be likely to yield, information important in history or prehistory.

Typically, these properties will have achieved their historical “significance” sometime before the last 50 years. Soon after the inadvertent discovery of the Tse-whit-zen site in August 2003, the site was determined to be eligible for inclusion in the NRHP under Criterion D.

1.3 Summary of Project Study Objectives

JLARC charged Foth & Van Dyke with five of six study objectives outlined in their “Proposed Scope and Objectives” dated March 31, 2005, and which was entitled the “Review of Port Angeles Graving Dock Project.” The five objectives charged to Foth & Van Dyke include:

- ◆ **Site Selection** – Review WSDOT decisions to build a graving dock compared to use of a privately owned or privately developed site, and to choose the Port Angeles site relative to other locations. This review will include an evaluation of risk assessments applied to these decisions, including the type and quality of information available for each potential site.

- ◆ Environmental Permitting – Examine the role of the permitting process in site strategy and selection, including timing and interaction of environmental and archaeological assessments and the impact, if any, of permit streamlining activities.
- ◆ Archaeological Assessment – Evaluate the process used to conclude the Port Angeles site was unlikely to contain historic or archaeological resources, including an examination of the archaeology consultant’s work and oversight of that work by WSDOT and the Office of Archaeology and Historic Preservation.
- ◆ Interactions of Interested Parties – Review the agreements and consultations between WSDOT and local, state, and federal agencies and tribal representatives concerning the Port Angeles site, including the decision to permanently halt use of the site as a graving dock.
- ◆ Recommendations – Based on the information obtained from the review, identify lessons learned that can be incorporated into project procedures to minimize risks for future WSDOT projects.

2 Methods

2.1 Audit Review Key Team Members

The following are brief descriptions of the key members that were part of Foth & Van Dyke's review team.

Curtis M. Hudak, Ph.D., P.G. (MN) – Project Management & Geoarchaeology

Dr. Hudak is a Director within Foth & Van Dyke's Infrastructure and Environment Operating Unit, and serves on the Strategic Advisory Team that manages this operating unit. The Infrastructure and Environment unit contains transportation, municipal, environmental permitting and compliance, and cultural and natural resource teams. Dr. Hudak also is the team leader for the Cultural Resource Management (CRM) program within this operating unit, so he was selected to lead this multi-disciplined review team. He has managed multimillion dollar CRM projects for Foth & Van Dyke—one in particular was for a controversial NEPA transportation corridor siting across tribal lands in north-central Minnesota involving state-tribal-FHWA intergovernmental relations. His technical expertise is in Quaternary geology and geomorphology, and archaeological geology. Dr. Hudak has prepared numerous GIS-based models on how to predict the location of deeply-buried archaeology sites in both rural and urban settings. He has also designed and implemented field methods to help locate deeply-buried archaeology sites in both urban and rural environments.

Patricia A. Trocki, M.A. in Anthropology – Archaeology & Section 106

Ms. Trocki is a Principal Investigator and project manager within Foth & Van Dyke's Infrastructure and Environment CRM Program. She has been the principal investigator for some of the most difficult and controversial archaeology projects performed in the Midwestern U.S. and in particular perhaps the most difficult all-encompassing archaeology project ever conducted in the state of Minnesota. Her reputation is impeccable for her principal investigator role on a multi-year, million dollar CRM project for Foth & Van Dyke that helped define a controversial corridor across tribal lands in north-central Minnesota. Her duties for this project included facilitating state-tribal-FHWA intergovernmental relations, consulting with THPO and SHPO as part of Section 106 of the NHPA, organizing and implementing landowner relations, organizing the field and laboratory crews, and authoring a multi-volume report to satisfy the Section 106 requirements. The project involved more than 40 cumulative miles of corridor alternatives that were each 300 feet wide. These corridors were guided around both known and recently identified Native American cemeteries and other sites. Ms. Trocki led our Archaeological and Tribal Relations subteam for this project review.

William Bauer, P.E. (WI) – Transportation Construction & Contracting

Mr. Bauer is the Transportation Program leader for Foth & Van Dyke. He has more than 38 years professional experience in highway design and construction including eight years as the Chief of Construction Operations Management for the Wisconsin Department of Transportation. As a consultant, Mr. Bauer has been involved in numerous major highway design projects such

as IH-280 in Iowa and the Southern Indiana Freeway Corridor Study in Indiana. He is very knowledgeable of the entire project development process from concept definition through construction. Mr. Bauer also serves in a “conflict resolution” role for major transportation construction projects across the United States, and is therefore experienced in *auditing* projects. Mr. Bauer led our Transportation subteam for this project review.

Janis Kesy, P.G. (WI and MN) – Environmental Siting/Permitting & NEPA Process

Ms. Kesy is a Senior Technical Consultant within Foth & Van Dyke’s Infrastructure and Environment Operating Unit. She is responsible for project quality controls and work quality on environmental projects within the operating unit. Ms. Kesy brings more than 23 years of experience as a Professional Geologist in the states of Wisconsin, Minnesota, and Illinois. She has been the project manager and/or technical coordinator for the development of multiple Environmental Impact Statements (EIS) and Environmental Assessments (EA) following NEPA requirements. Ms. Kesy has participated in numerous public hearings held as part of the NEPA process. She supported highway design projects by conducting Phase I/ II environmental site assessments. Ms. Kesy has also attended the Federal Highway Administration’s *NEPA and the Transportation Decision-making Process* training course. Ms. Kesy led our NEPA subteam for this project.

Timothy Bureau, M.A., Environmental Resource Analysis and Management

Mr. Bureau is a Senior Consultant and former vice president of JFNew. He has over 35 years of experience in natural resource consulting and is a designated Expert Witness in Michigan, Wisconsin, and U.S. District Court. The state of Delaware, Department of Natural Resources and Environmental Control (DNREC), appointed Mr. Bureau Hearing Officer & Finder of Fact for a U.S. Army Corps of Engineers application for permit to deepen and widen the Delaware River main navigation channel from Delaware Bay to the Port of Philadelphia. The project involved significant dredging and blasting, with many complex and interrelated issues such as spoil disposal, toxic mobilization, impacts on fauna, threatened & endangered species, liability, water quality, and economics. Mr. Bureau held Public Hearings and reviewed hundreds of documents, studies and comments, culminating in a recommendation to the Secretary based on state statutory permitting criteria. In addition to his experience with JFNew, Mr. Bureau was a Land & Water Regulator for the Michigan Department of Natural Resources for over nine years. Mr. Bureau is on the NEPA subteam.

Keith Summers – Tribal Liaison

Mr. Summers is a Director within Foth & Van Dyke’s Infrastructure and Environment Operating Unit, and serves on the Strategic Advisory Team that manages this operating unit. He also serves as our operating unit’s business manager and resource manager. Mr. Summers is an enrolled member of the Oneida Nation of Wisconsin, a federally recognized tribe, and acted as our liaison with the Lower Elwha Klallam Tribe. He is the former development director for the Oneida Nation, responsible for the leadership, strategic planning and management of Tribal operations with a \$20 million annual budget. Development activities included Engineering, Economic and

Community Development, Housing, Zoning, Planning and Public Works. Mr. Summers is an experienced negotiator with local, state, federal and tribal authorities, and understands jurisdictional and sovereignty issues. Mr. Summers' combined experience and ethnicity puts him in a position of speaking intelligently and freely. Mr. Summers is on the Section 106 and Tribal Relations subteam and was responsible for the tribal relations part of our review.

Many other individuals helped to collect, catalog, and review hundreds of documents, and thousands of e-mails regarding the Hood Canal Bridge and graving dock project.

2.2 Review of Planned Process, Process Compliance, and Process Effectiveness

Foth & Van Dyke's role, with respect to the above listed objectives provided to us by JLARC, was to review for the following:

- ◆ What was supposed to happen at key events during the project (planned process or criteria)?
- ◆ What did happen at each key event (project compliance or findings)?
- ◆ How effective was the process at each key event (process effectiveness or findings)?
- ◆ What, if anything, could/should have happened to make things more effective (recommendations)?

2.3 Data Collection – Request for Documents and Interviews

Foth & Van Dyke started with an open-minded approach of discovery. We listened, read, and observed our way through this discovery process. The review process required us to ask pertinent questions, listen for the response, paraphrase what we heard back to the speaker as appropriate; document the response; review existing reports, permits, and other documents; and observe the sites in question. Our team understood that hindsight is always perfect, and we attempted to analyze the chain of events in a manner that represents the thinking and technology in that particular place and time. At the end of each interview, we asked the interviewee if there was anything else that we should know or should have asked.

Requests for interviews were initiated in June 2005. The team's first series of introductory interviews were held on June 21-23, 2005, both at WSDOT's Headquarters in Olympia, Washington, and at the Port Angeles WSDOT office. These initial meetings with WSDOT and DAHP provided us with a set of 70 documents from WSDOT on June 21, 2005, that we used to start our review. Other introductory interviews were held at this time with the Port of Port Angeles and the LEKT.

From these 70 documents received from WSDOT, Foth & Van Dyke compiled multiple lists of both document and interview requests and sent them out under a cover letter dated July 8, 2005. These lists were individualized and went out to various state, federal, local, and tribal

governments. The list of requested documents and interviewees was especially long for WSDOT, and this took considerable effort on both sides to coordinate the interviews for the planned weeks of August 8 and 15, 2005. We had hoped to receive all the documents from WSDOT at least one or two weeks in advance of our interviews because we were led to believe that most documents were already in preparation for the pending audit; however, the documents were hand-delivered to our Transportation subteam leader on August 12, 2005, in Olympia and at the start of our scheduled interviews. A follow-up letter dated August 30, 2005, was sent to WSDOT to help clarify discrepancies between our July 8, 2005, letter of request and the received documents.

A second request for documents was submitted to WSDOT under a cover letter dated September 1, 2005, which was generated from both our interviews and the first set of documents that we received earlier. Follow-up conversations were held on September 8, 2005, with WSDOT to clarify what we had and had not received with respect to our written requests. Multiple smaller requests for individual documents or requests for clarification were submitted via e-mail by Foth & Van Dyke team members to WSDOT and other stakeholders as needed. Most of these “smaller requests” were further clarifications or additions to those documents that we had already more formally requested in either the July 8 or September 1, 2005, letters of request. For example, Foth & Van Dyke requested a copy of a map of the “usual and accustomed tribal hunting, gathering, and fishing grounds in the state of Washington” from the Governor’s office. This was because WSDOT staff told us this is where the maps were maintained that they used as a source to determine which tribes to notify about the Port Angeles project. Assistance from JLARC led us full circle back around to WSDOT’s Cartography Department before we were able to locate a copy for our review.

The follow-up interviews with the LEKT, which were also scheduled for the week of August 15, 2005, were cancelled the day before our travel for the interviews because of the tribe’s filing of a lawsuit against the State. These follow-up interviews with the LEKT were never held because of the ongoing lawsuit.

2.4 Data Documentation

All hard copy working documents/papers were cataloged with a unique Master Document Catalog (MDC) number (Catalog Identifier) by Foth & Van Dyke. Although this number was unique to each document, sometimes more than one copy of the same document was received from one or more of the supplying agencies. These documents were scanned and put into an Adobe© .pdf format for easier transmission to the project manager and eventually placed on a Sharepoint© website (at Foth & Van Dyke), which is available to the entire review team including two JLARC members. The date, time of origin, date of receipt, and author/origin of the document, if available, were recorded within the MDC. The unique MDC number was placed in blue letters in the upper right hand corner or nearest “clean” spot on the document to that corner. The original received document was then forwarded to either the project manager or his administrative assistant for inclusion in the master document hard file. The digital MDC was put into MS-Access© format for ease of searching and sorting. This software allowed us to sort by time of origin or receipt and helped us to more efficiently and accurately create a timeline or sequence of project events. The MDC and a digital copy of all documents will be a deliverable

to JLARC. The documents are also available for their use either via the Sharepoint© website or from our hard files.

2.5 Progress Reporting

Progress reports were provided to JLARC every two weeks throughout project fieldwork. Key team members who performed duties during the prior two week period assembled status reports that were forwarded to the Foth & Van Dyke project manager on Thursday of every second week after the project start. The project manager then compiled a summary of each key member's work into one summary progress report for delivery to the JLARC staff by Friday afternoon of that same week. The progress reports were in MS-Word© format, delivered as an attachment in an e-mail to the JLARC staff, and followed up later by a hard copy with signature.

2.6 Detailed Work Plan

The development of a more detailed work plan was part of our original scope of work within the contract between JLARC and Foth & Van Dyke. This revised, more detailed work plan was used to update the scope of work and amend the contract on October 12, 2005.

2.7 Constraints on Schedule and Budget

Foth & Van Dyke had a fixed schedule and budget at the start of this project to review a large albeit unknown (to us) quantity of related materials and interviewees. We were informed by JLARC that WSDOT was already preparing for the audit prior to our signing the agreement with JLARC. Even after our June 21, 2005, introductory meeting with the Secretary of Transportation, we were told by WSDOT that much of what we planned to request was already sorted and prepared for photocopying and delivery to our team. Despite that, our requests were apparently overwhelming because information we requested from WSDOT on July 8, 2005, was not provided to us until August 12, 2005. This impacted our preparations for our August 8 and 15, 2005, weeks of interviews.

More than 2,100 documents and 3,000 e-mails were received by Foth & Van Dyke as a result of our review. Many of these documents were duplicates; however, they still were reviewed to make certain of duplicity.

Foth & Van Dyke was expecting that both archaeology consulting firms would complete their "Interim Reports" before we completed our document review. The reports themselves would be used in part to further evaluate the technical competency of both firms and their Principal Investigators. These reports came very late (November 2005) and in one case was only partially complete.

Foth & Van Dyke's review of the interactions of interested parties was not fully realized because of the Lower Elwha Klallam Tribe's (LEKT) pending lawsuit against the State. We made several attempts to speak with the tribal members after the initial introductory interview in June 2005. However, subsequent to the filing of the lawsuit the Tribe declined to participate further in the audit. This was unfortunate, because only the tribe could have validated some discrepancies

that we witnessed between the WSDOT and SHPO interviews; in particular, how much influence the SHPO had with WSDOT's selection of archaeology consulting firms. Although we have some LEKT opinions and documentation that were collected before the lawsuit filing, the opportunity for the LEKT to inform this review was limited.

2.8 Draft and Final Reports

The draft report was delivered to JLARC on December 8, 2005. The "final" report was delivered to JLARC on January 9, 2006, for an agency technical review. Foth & Van Dyke modified the "final" report based upon the agency technical reviews and compiled the current version into the "published" report.

2.9 Planned Oral Presentations

At the time of this writing, oral presentations of our findings are planned for June 2 and 30, 2006.

3 Issues, Findings, and Recommendations

Section 3 addresses the objectives assigned by JLARC to the Foth & Van Dyke review team. Subsection 3.1 addresses WSDOT's project development and graving dock site selection process; Subsection 3.2 addresses the environmental influences on the graving dock site selection process; Subsection 3.3 addresses the environmental permit streamlining influences and agency interactions on the graving dock site selection process; and Subsection 3.4 addresses the many archaeological issues that influenced the Port Angeles graving dock project. Each of these main subsections was researched and written by a different person or team of people at Foth & Van Dyke. The findings regarding each issue come from different perspectives, which are attributed to the variable expertise of Foth & Van Dyke's reviewers (i.e., transportation engineering for Subsection 3.1, environmental science and compliance for Subsections 3.2 and 3.3, and cultural resource management for Subsection 3.4).

3.1 Project Development and the Graving Dock Site Selection

This subsection of the report, in combination with the following Subsections 3.2 and 3.3, addresses JLARC's "Objective Number 1 – Site Selection." This section is an analysis of the WSDOT procedures and events that led the project development process to the selection and development of the Hood Canal Bridge graving dock site at Port Angeles.

On November 19, 2002, WSDOT's Olympic Region Administrator announced the Department's decision to proceed with the design and subsequent construction of a graving dock and supporting facilities, together hereinafter referred to as a graving yard, for the fabrication of 14 pontoons to be used in the replacement and upgrade of the east half of the Hood Canal Bridge and 20 anchors to be used to replace anchors for the entire bridge. At that time, this decision seemed to WSDOT to be the best solution to some of the most vexing problems identified by WSDOT during the planning and design phases of the bridge project. WSDOT believed that the Port Angeles site would be the answer to all its needs. For example, the Port Angeles site:

- ◆ Met the spatial requirements of a facility for the fabrication of both the pontoons and anchors. From past experience, the Department believed that approximately 30 acres was needed for a graving yard. The Port Angeles site was 22 acres, and there was additional adjacent land available that the contractor could lease.
- ◆ Received not only public approval, but active public support. The Port Angeles site did not need to be re-zoned to allow for the construction operations.
- ◆ Met requirements for the fabrication of both pontoons and anchors of the larger SR520 floating bridge replacement project planned for 2008 - 2011. The SR520 project requires the fabrication of 55 pontoon sections. WSDOT estimated that it would take nine years to build these pontoons at the Concrete Technology Corp. (CTC) site due to its small capacity (Graving Dock Alternatives Analysis, WSDOT, May 9, 2003; FVD0026).
- ◆ Appeared to have an acceptable level of risk to both project cost and schedule and was comparable in these risks to the Concrete Technology Corporation and Duwamish Ship

Yard sites, the only other sites under serious consideration at the time (WSDOT CEVP Supplemental Report #1, August 2, 2002, FVD0020).

3.1.1 Audit and Review Methodology

3.1.1.1 Project Records

The primary sources of information regarding the project development process followed by WSDOT staff were the project records. Minutes were provided to Foth & Van Dyke of meetings of the project team, initially called the Hood Canal Bridge – East Half Replacement Team and later called the Hood Canal Bridge Project Delivery Team (PDT), beginning with the first meeting on January 6, 1998 (FVD0134) and continuing to February 10, 2003 (FVD0168). Team meetings were held infrequently until monthly meetings were initiated in October 2001.

The permit streamlining Interdisciplinary Team (IDT) meeting minutes were also reviewed to determine the impact this group had on project development. The IDT was formed in March 2002 in response to the legislatively created Transportation Permit Efficiency and Accountability Committee (TPEAC). The IDT's stated purpose was to "achieve all project permits by November 2002." Although the IDT was not part of the PDT, for the purposes of this review, minutes of the meetings of the IDT were considered project records.

Foth & Van Dyke, during a period of several months, made multiple requests of WSDOT for copies of comprehensive project development schedules used by the PDT to plan and execute its work in the design phase of the project. Project development schedules and revisions thereto were requested for the period from October 1997 to July 2003 at approximate six-month intervals, with the anticipation that these schedules would describe the Department's intentions and actions in investigating and selecting a graving site. An example of the SR520 Bridge project development schedule (provided to Foth & Van Dyke by another WSDOT region) was provided to WSDOT Olympic Region staff on October 12, 2005, to illustrate, not necessarily the form or type of schedule expected, but rather the information, process details, and activity relationships that would enable an objective review of the PDT's performance.

As described in greater detail below, Foth & Van Dyke did receive, either individually or contained in other documents, several schedules. None of these however described either the entire project development process or, specifically, the graving site selection process.

3.1.1.2 Personal Interviews

Personal interviews, face-to-face and via telephone, were conducted with Mr. Douglas MacDonald, secretary of the Department; Mr. Randy Hain, P.E., WSDOT Olympic Region administrator; Mr. Pasco Bakotich, P.E., Olympic Region assistant administrator; Ms. Amity Trowbridge, P.E., Hood Canal Bridge project manager; Mr. Daniel Mathis, P.E., FHWA division administrator; and numerous other WSDOT and FHWA staff. In some cases, follow-up interviews were conducted via telephone to gather additional information. The objectives of the interviews were to identify the persons involved in the project and their roles and responsibilities, to learn the project development process used on the project, and to identify

“lessons learned” from the project. Each interviewee was asked by the Foth & Van Dyke interviewer, “Do you have anything else to add?” to afford him/her the opportunity to provide additional information that he/she thought pertinent to the audit.

3.1.1.3 Databases and Publications

A search was conducted of web sites maintained by WSDOT, FHWA, and the American Association of State Highway and Traffic Officials (AASHTO) to identify policies, procedures, and standards in effect during development of the Hood Canal Bridge project. The objective of this search was to gain an understanding of the project development process used by WSDOT as well as direction provided by other recognized transportation agencies.

Department publications describing its project development processes (e.g., the Project Control and Reporting Guide [FVD0194]) and reports of other groups (e.g., the Joint Legislative Audit and Review Committee’s “Overview of Washington State Department of Transportation Capital Project Management”) were reviewed to gain knowledge of the history and status of Department processes and procedures.

3.1.2 Criteria

3.1.2.1 Standards of Practice in Project Development—Schedules

State DOTs across the United States (e.g., Arizona, Illinois, Michigan, Minnesota, and Wisconsin) have used standard practices in regard to scheduling for decades; not only for funding and construction activities, but also for the planning and design functions of project development. Simple bar charts have been used for very simple projects, relationship bar charts for larger projects, and critical path schedules for complicated projects. Critical path scheduling techniques were first developed in the 1960s and have been refined to fit the specific needs of transportation designers.

Detailed project development schedules are valuable tools for project management. Created early and updated often, schedules enable the project manager to identify the sequence of activities necessary to prepare the plans and contract documents, the interdependencies among the activities, constraints upon the activities, and the critical path of tasks to be accomplished to have the project ready for contracting by the target date. The project manager is able to foresee obstacles and challenges to reaching the target date and to react appropriately to obtain proper resources, re-sequence the activities, and devise contingency plans. A project development schedule also allows all project participants to identify their roles and responsibilities within the development of the project. An excellent description of the benefits of detailed project scheduling is provided in *The Critical Path Method*, by Byron Radcliffe, Donald Kawal, and Ralph Stephenson, Cahners Publishing, Chicago, Illinois, 1967.

In building a comprehensive schedule, a project manager/leader essentially creates a roadmap to successful completion of the project. As cited in the recent report, *Overview of Washington State Department of Transportation Capital Project Management*, the project schedule on which the critical path management process is founded should reflect logical sequences for accomplishing

the required project work. The project schedule should provide a comprehensive depiction of the project reflective of current scope and planning strategies. As a project schedule is developed, logic network methodologies should be employed to identify relationships of activities within and between phases, and to assign estimated durations for those activities. Accordingly, there is a direct correlation between the quality of the project schedule and the effectiveness of managing the critical path.

3.1.2.2 Standards of Practice in Project Development—Project Leadership

Foth & Van Dyke’s experience in transportation engineering has shown that to develop the plans and contract documents required for a construction project, both management and leadership functions need to exist. Management without leadership results in a plethora of historical reports about budgets and time, but does little to direct the achievement of the overall project goal, which is the construction of the envisioned functional transportation facility. The difference between those who are only project managers and those who are also project leaders is revealed in their attention to all the needs of the project team: scope definition, budget, schedules, resources, processes, standards, communication, commitment, and participation. Too often, project managers spend the majority of their time on budgets, schedule reporting (not creating schedules), and human resources. If there is a change of scope or direction, or a problem, a manager may not address this challenge until it occurs. A project leader however, is able to foresee changes and problems, and positions the team to minimize disruption and to maximize the opportunity to make clear and rational decisions. Successful project leaders also know that project difficulties often occur because of relationship issues and spend significant amounts of time on building commitment, cooperation, and communication both within and beyond the project team. Several texts have been written that confirm these conclusions: *Learning to Lead: A Workbook on Becoming a Leader*, by W. Bennis and J. Goldsmith, Basic Books, Perseus Books Group, Cambridge, Mass. 2003; and, *The Lead Dog Has the Best View*, by G. Culp and A. Smith, The American Society of Civil Engineers Press, Reston, Va. 2005.

3.1.2.3 Standards of Practice in Project Development—Technical Resources

Every successful project team needs to have members technically proficient in the tasks yet to be accomplished. The level of proficiency needs to be matched to the level of complexity of the project (i.e., have “the proper tool for the proper job”). These discipline experts need to be available and brought into a project at its earliest stages to assist in problem identification and schedule building; and to be consulted during the project development process whenever there are changes in scope or direction.

The organization with overall responsibility for the project should not only make appropriate subject matter experts available to the project manager, but should insist on the experts’ involvement in development of the project and should confirm their participation. Inexperienced project managers and leaders may not realize that they need assistance, or where that assistance may be obtained.

3.1.2.4 Standards of Practice in Project Development—Relationships

Foth & Van Dyke’s experience in transportation engineering has shown us that a project benefits if working relationships are established with regulatory agencies very early in the project development process, or even before a project is identified. Peer relationships are most effective, with the project staff actually writing the permit applications in touch with the regulatory staff performing the detailed reviews and evaluations. When questions arise that affect the scope, direction, or schedule of the project, the time required to make decisions can be minimized if supervisory personnel of the respective organizations are also already acquainted and familiar with each other’s needs and the needs of the project. If conflicts between the policies of the agencies are identified, an in-place conflict resolution process providing for rapid elevation of disputes through the management ranks of the agencies (all the way to the agency directors if necessary) can serve to keep the project on track and working relationships intact.

An example of success resulting from the creation of working relationships between agencies involved in transportation project development can be seen in the operations of the Wisconsin Department of Transportation (WisDOT) and the Wisconsin Department of Natural Resources (WisDNR). To ensure timely permit application review, WisDOT funds several full-time environmental liaison positions in WisDNR. The personnel in these positions are knowledgeable of the needs and requirements of both departments and have established working relationships with WisDOT engineers. The liaisons are considered part of the project delivery team (PDT), meaning that they are more than a participating “committee member.” Through a Memorandum of Understanding, both departments have agreed to specific procedures for communication and conflict resolution.

3.1.2.5 Standards of Practice in Project Development—Project Oversight

It is standard practice that the more complex, unique, or sensitive a project is, the higher the level of management is that is involved in project oversight. The greater the risk of failure or the greater the cost of failure, in money, reputation, or public relations, the more an organization will utilize the experience and expertise of its upper management in overseeing the development of the project. Utilizing its authority, upper management is able to act to reduce risk of failure when it observes that the project does not conform to organizational standards for scheduling and execution.

3.1.3 Conditions

3.1.3.1 Conditions—Chronology of Hood Canal Bridge Project Development Events

The following chronology was constructed primarily from minutes of meetings of the PDT and the interdisciplinary team plus a number of other WSDOT reports and communications. This timeline only includes events pertinent to the development of the project from October 1997 to November 2002, when the Port Angeles graving yard site was selected.

October 1997. WSDOT Bridge and Structures Office issued the report – “William A. Bugge Bridge Replacement Plan for the East-Half Floating Portion” (FVD0004). This report cited the deteriorated condition of the bridge, the limited and unreliable operation of the drawspan, and the

risk of major storm damage as justification for replacing the bridge during the 2003-05 and 2005-07 biennia. A preliminary engineering schedule indicated that construction could begin as early as July 1, 2001. The report also presented a rehabilitation alternative to extend the service life of the bridge by 20 years and suggested that improvements to the anchor cable system capacities would significantly reduce the risk of storm damage.

January 1998. Initial meetings of the project team included discussions of the use of plans on the shelf that would enable advertising for construction contracts as early as February 1999 if replacement of the bridge as soon as possible was required. Meeting minutes indicate that the primary impetus for replacement as soon as possible was the anticipated high maintenance costs of the existing structure. Considerable importance was placed on traffic mitigation plans for an expected six-week closure of the bridge in 2004. WSDOT's expectation was that the pontoons and anchors would be fabricated at graving yards owned by Concrete Technologies Corp. (CTC) and Duwamish Ship Yards (DSY).

April 1999. WSDOT personnel met with representatives of six construction firms to discuss scheduling, incentives/disincentives, public impact, constructability, and design. WSDOT indicated that it may reserve graving yards at CTC and DSY for contractor development. At this time, WSDOT was concerned that a single contractor could, by reserving the sites itself, discourage other contractors from submitting bids, and be apt to submit an inflated bid. (Due to a desire to get the project underway as soon as possible, WSDOT did not consider the possibility of rejecting such a bid and re-letting the contract.) At this time, the Department was considering only the CTC and DSY sites for the fabrication of pontoons and anchors. Records do not indicate that contractor development of a new graving yard site was considered at this time, nor was the possibility of fabrication of the pontoons at one site and the fabrication of the anchors at or near the bridge site considered.

May and June 1999. WSDOT personnel met with officials of CTC and DSY to discuss the suitability and availability of the combined sites for both pontoon and anchor fabrication. An agenda item for the meeting with CTC on May 18, 1999, and for the meeting with DSY on June 23, 1999, was to discuss the adequacy of the respective graving sites.

July 1999. The task of assembling the plans for the bridge approach spans was assigned to the WSDOT Bridge Office.

December 1999. WSDOT Bridge Office and Olympic Region Office met to discuss plans for the bridge and approaches. The "plans on the shelf" needed to be revised to comply with current standards and mechanical and electrical plans needed to be developed for operation of the drawspan. No mention was made of permitting or graving yard issues.

July 2000. WSDOT Bridge and Project Engineers Office met to discuss the use of contract incentives/disincentives to minimize traffic disruption during the closure of the bridge. A great deal of attention was being given to traffic mitigation and public outreach (\$10 million was budgeted).

January 2001. The Project Delivery Team (PDT) discussed: 1) moving the date of advertising the contract from December 2002 to April 2003 because of a funding issue; 2) using WSDOT to obtain the permits for the graving yard rather than leave it up to the contractor; and 3) using the Olympic Region Office to explore advertising a Request for Proposals for other graving yard sites.

March 2001. The PDT discussed leasing the CTC site. The WSDOT Bridge Office reported that there had been a proposal from the Makah tribe to utilize a site at Neah Bay for the construction of pontoons and anchors.

October 2001. Work continued on a lease of the CTC site. A Washington Department of Fish and Wildlife (WDFW) official recommended use of the old Rayonier paper mill site in Port Angeles for construction of the graving yard (not to be confused with the Port Angeles site that was eventually identified in June 2002 and later selected as the graving yard). The meeting minutes reported that the WSDOT Olympic Region Assistant Administrator stated that “. . . we will not be using this site or cleaning it up as part of this project.” Concern was expressed that TPEAC’s possible selection of the Hood Canal Bridge (HCB) Project for a pilot project to streamline the permitting process could delay project development.

November 2001. The PDT discussed traffic mitigation for an anticipated closure of the bridge in 2006. The environmental permitting process is cited as the driving force behind a delay from December 2002 to May 2003 for going to bid. Concern was voiced regarding the deteriorating condition of the existing anchor cables and the risk of losing the bridge in a storm if the project is delayed to 2007. At this time, WSDOT considered the Concrete Technology Corporation (CTC) graving yard site as “. . . the only commercial graving site.” WSDOT intended to work with CTC to address environmental mitigations required by resource agencies to be able to use this site.

December 2001. The PDT was concerned that delays in the environmental permitting process could delay the “ad date” to April/May 2003 and that such a delay may result in increased cost risk. A WSDOT Headquarters Capital Program Management representative stated that funding would not be a reason for delaying the bridge. A suggestion was made by an unidentified member of the PDT to investigate a site at Port Gamble for potential construction of a graving yard, but was rejected by the Region Assistant Administrator. Permitting would be left to the contractor to do. The Bridge Office representative expressed concern that if the permitting of a site is left up to the contractor, the project could be delayed.

December 2001. A WDFW official inspected the CTC site and subsequently wrote a letter to CTC listing measures necessary to avoid and/or mitigate environmental impacts from using the site for the fabrication of pontoons and anchors.

January 14, 2002. Minutes of the PDT state, in part, “Location for the graving dock has not been determined. Concrete Tech cannot deliver this project by itself – we need another location.” “At this time there are no known sites and we don’t expect to have the location of a graving site

any time soon.” “Project Office will pursue an RFP for graving site to operate during specific time and for what.”

February 2002. The PDT was uncertain about the need to designate and permit a graving yard site but was fearful that if a site was not provided, the contractor may file a claim for additional compensation due to delays in obtaining permits. WSDOT realized that anchor fabrication could take place at a land site, not necessarily a graving yard. Publishing a Request for Proposals for a graving yard site was no longer considered due to the urgency to get the project underway in time to make the 2006 closure date. Considerable discussion was devoted to the traffic mitigation plan. Direction was given to pursue sites for anchor fabrication.

March 2002. The IDT was formed in response to the legislatively created Transportation Permit Efficiency and Accountability Committee (TPEAC). The IDT’s stated purpose was to “achieve all project permits by November 2002.” The IDT included, among others, the Hood Canal Bridge Project Manager, the Olympic Region Assistant Administrator for Project Development, and the WDFW official who, in October 2001, had recommended siting the graving yard at an old paper mill site in Port Angeles. The PDT was uncertain about a plan for an anchor fabrication site.

April 2002. An announcement was made that an option for a lease has been obtained for use of the CTC site for pontoon fabrication through June 2003 and renewable thereafter. The anchor fabrication site remained uncertain. The Makah Tribe was still interested in building a graving dock. The PDT determined that WSDOT should reserve a site for anchor construction.

June 2002. WSDOT was still looking for a site for anchor fabrication. A city of Port Angeles official requested that consideration be given to siting a graving yard at another site in Port Angeles, owned by the Port of Port Angeles. Several PDT members visually inspected the site. Meanwhile, the IDT was discussing details about graving dock operations, pontoon moorage, etc.

August 2002. Minutes of the Interdisciplinary Team (IDT) meeting indicated IDT’s support for the new Port Angeles site. WDFW insisted that a graving yard be designated and permitted before a contract was awarded for construction. Minutes of the PDT meeting indicated that no decision had been made for siting a graving yard. The Port of Port Angeles site was to be investigated for hazardous materials contamination.

September/October 2002. The PDT was unsure about how to contract for the graving yard construction, but was pursuing a lease with the Port of Port Angeles. The IDT was extensively discussing construction details, possible future use of the site, etc.

November 2002. Selection of the Port Angeles site for construction of a graving yard was announced. (A possession and use agreement with the Port of Port Angeles was signed in January 2003.) WSDOT’s Port Angeles Project Engineer’s Office will develop the site plans for the graving yard.

3.1.3.2 Conditions—Schedules

The development of the plans and contract documents for the Hood Canal Bridge Project did not have the benefit of well defined and comprehensive schedules. According to the project manager, schedules were “very general and frequently changing.” Two WSDOT Headquarters offices did generate schedules for their specific areas. The Capital Program Management Office created and maintained funding schedules; and, the Bridge Office created anticipated construction schedules.

Foth & Van Dyke received these documents/schedules from WSDOT:

- ◆ A preliminary engineering schedule, dated October 1997, contained within the “William A. Bugge Bridge Replacement Plan for the East-Half Floating Portion.” (FVD0004) This schedule is a simple, half-page, bar chart for the period of late 1997 to mid-2004. It lacks the detail necessary to identify relationships among the project development elements.
- ◆ A closure mitigation plan dated February 5, 1999, and subtitled “Work Program.” This document includes several simple bar charts, one which includes “Bridge Design” as a single bar spanning 1999 and 2000. This schedule lacks the detail necessary to identify relationships among the project development elements.
- ◆ Anticipated construction phase schedules dated May 2002; February 5, 2003; and April 29, 2003. While these schedules are well done and informative, they do not pertain to the design phase, specifically the graving site selection.
- ◆ Several documents and schedules pertaining to the permitting process (FVD1977, FVD1978, FVD1979, and FVD1980). These documents do not describe either the comprehensive design process or the graving site selection activity.

The primary defined schedule element used by the Hood Canal Bridge PDT, as referenced in numerous minutes of team meetings, was the target “float-in” date of May 2006 for closure of the bridge and installation of the replacement pontoons. This target date was regarded as fixed and, as such, affected the decision-making process used to select the graving yard site. The opportunity for implementation of a clear and thorough plan to address the graving yard question lessened as the date neared when the project needed to be advertised for bids if the closure date was to be met. There were several reasons why this float-in date was regarded as inviolable.

- ◆ Extensive and expensive traffic mitigation plans had been developed based on a six to eight week bridge closure beginning at this time. The complicated plans required the cooperation and participation of a great number of public and private organizations.
- ◆ Weather conditions at the Hood Canal limited the amount of time during the year that ferries could be utilized for traffic mitigation.
- ◆ Environmental factors limited certain construction activities to specific times of the year.

- ◆ Federal funds may not be available if the project was delayed.
- ◆ Deteriorating anchor cables and the risk of losing the bridge in a storm was of concern.
- ◆ Construction costs would increase significantly if the project was delayed.

Without a detailed project development schedule to guide the project team in addressing problems in a timely and logical manner, several conditions existed that adversely affected the success of the project:

- ◆ Not having the “Graving Yard Site Selection” as a scheduled activity with its own detailed start date, task duration, and finish date, enabled the early determination that the Concrete Technology and Duwamish sites were the sites that would be used. This went unchallenged until late in the development process, January 2002. There is no indication in the project records provided to Foth & Van Dyke that other sites were evaluated in more than a limited manner, as described in PDT meeting minutes of October and December of 2001.
- ◆ Not having a defined development schedule, made it difficult for the PDT to understand, and perhaps allay the possible risk to timely and orderly decision-making brought about by the introduction of the Interdisciplinary Team (IDT) into the project development process.
- ◆ Not having a defined and scheduled process for selecting a graving yard site, WSDOT proceeded with project development until it was too late to consider alternative methods other than the Department’s securing and permitting a site itself. (See PDT meeting minutes of February 7, 2002, FVD0153.) WSDOT believed that if it left the site selection and permitting for the contractor to accomplish, and permits were either unobtainable or obtainable only at considerable more cost than what the contractor had included in his/her bid, then the contractor would file a substantial claim for additional compensation. WSDOT’s approach did not recognize that a contractor, in submitting a bid, represents that he/she has studied the plans and specifications, including permit requirements, and has found the work to be constructible at the price he/she bids, as described in WSDOT Standard Specification 1-02.4.

To determine how other WSDOT project development teams were utilizing scheduling techniques, Foth & Van Dyke contacted the team involved in the SR520 Bridge Replacement and HOV Project. This project also includes replacement of a floating bridge. The project engineer provided Foth & Van Dyke with very detailed design and anticipated construction schedules. These are excellent examples of schedules that can assist a project development team in accomplishing its mission.

WSDOT’s HCB project staff members were only familiar with construction schedules and did not utilize detailed scheduling techniques for the management of planning and design functions

(i.e., project development). In an interview, the HCB project manager stated that project development schedules were “very general and frequently changing.”

The condition observed by Foth & Van Dyke on this project was not unique. The consulting firm of Gannett Fleming, in the recent report *Overview of Washington State Department of Transportation Capital Project Management*, observed that “Among the example projects reviewed, the practice of critical path management was not fully understood and its application was inconsistent.” The report continued “Scheduling expertise ranged from those who are strong in critical path theory and practice to those who did not understand its fundamentals.” Judging by the difficulty Foth & Van Dyke experienced in obtaining any detailed project development schedules from the HCB project leaders, it was clear that the project leaders fell into the latter group.

3.1.3.3 Conditions—Project Leadership

The Legislature created the TPEAC to devise a streamlined process to obtain permits for transportation projects. Legislative involvement was an indication of dissatisfaction with the time it took to obtain permits and the condition of working relationships between WSDOT and other agencies. These working relationships are an important factor in project delivery and need to be established and maintained as part of the responsibilities of not only the project manager, but also upper management at WSDOT.

As cited in the Joint Legislative Audit and Review Committee’s report entitled *Overview of Washington State Department of Transportation Capital Project Management*, “...there is a disconnect in the articulated roles and responsibilities for (highway) project engineers managing projects. These project engineers readily accept responsibility for the phase they are authorized to work. However, they do not accept responsibility for other phases.”

3.1.3.4 Conditions—Technical Resources

Notwithstanding shortcomings in the utilization of certain technical resources on tasks discussed elsewhere in this report, project development of the Hood Canal Bridge (HCB) Project did include several examples of participation by internal experts.

- ◆ WSDOT’s Headquarters Bridge Office provided expertise and took responsibility for the delivery of the bridge plans.
- ◆ The WSDOT Port Angeles Engineering Office, working with little time and on short notice, produced the graving yard site development plans.
- ◆ The Olympic Region Transportation Planning Office and the Program Administrator created a very comprehensive public involvement/outreach program for the HCB part of the project.

3.1.3.5 Conditions—Relationships and Actions/Influences of Others on the Project Development Process

During project development, it is not unusual for persons and organizations other than the PDT to influence the direction of the project and decisions made en route. Regulatory agencies, local governments, federal government, tribal governments, contractors, and even private individuals have interests to protect, ideas to promote, and duties to perform. A project manager needs to be able to utilize positive influences and protect the project from negative influences.

Federal Highway Administration (FHWA) – Since the federal government through the FHWA provides most of the funding for major transportation programs, it is responsible to see that these funds are used as intended by Congress. “FHWA’s oversight responsibilities will be primarily programs and systems oriented rather than project directed” (Washington Federal-Aid Stewardship Agreement, 2001).

Local Governments – The influence of local governments on the project development process was evident in two areas: 1) the traffic mitigation plan for the planned six-week closure of the bridge and 2) the selection of the graving yard site.

WSDOT’s sensitivity to public relations with local communities and users of the Hood Canal Bridge led WSDOT to invest a great deal of attention, time, and resources to designing an effective traffic mitigation plan. The target date of May 2006 for closure of the bridge was established and quickly became the driving force in development of the project. Both of the teams’ focus on this deadline influenced the project manager to select the Port Angeles site. The only other site under consideration at this time—the CTC site in Tacoma—had a less than 10 percent chance of making the scheduled May 2006 Hood Canal Bridge closure (FVD0026).

Interdisciplinary Team – Organized in March 2002, with representatives from both regulatory agencies (from which WSDOT would need to obtain permits) and WSDOT, this group was to demonstrate an exemplary way to accelerate and ease the permitting process. Though it had a clear enough goal, the role of the IDT in project development at this late stage was unclear to both the IDT itself and the already existent PDT. What is clear, and will be described in more detail later in this report, is that second only to the project manager, the IDT had the greatest influence on the selection of the graving yard site in Port Angeles.

3.1.3.6 Conditions—Project Oversight

From interviews of WSDOT headquarters and region staff, it was found that although there was a resource of headquarters staff experts available to the HCB project manager, upper management neither required the project manager to fully utilize these experts in the project development process nor empowered the headquarters staff with oversight responsibility and authority. Only the headquarters bridge office was significantly included in the HCB project. Though available, scheduling experts, contracting experts, project management experts, and construction experts were included in the project infrequently, if at all, and then only as consultants. Apparently, the HCB project was mostly subject to region level technical and project development oversight.

This condition was consistent with the descriptions of roles of WSDOT organizational units in project delivery contained in the previously referenced *Overview of Washington State Department of Transportation Capital Project Management* report, prepared for JLARC by Gannett Fleming.

3.1.4 Findings

3.1.4.1 Findings—Schedules

The absence of detailed and comprehensive schedules for the pre-construction phase of project development adversely affected the ability of the project manager to avoid the urgency of making the graving site selection decision until late in the project development process. This urgency likely contributed to the decision being made without appropriate investigation and consideration of risks to project schedule and budget.

The sequence of events reported in PDT meeting minutes of 2002 (as the team approached the December 2002 planned date of construction bid advertisements) reveals the lack of both planning and decision-making that created the environment of urgency that existed when the city of Port Angeles proposed the Port of Port Angeles site. As late as January 2002, the team felt that the Concrete Technology Corporation site, which had been expected to be used for fabrication of the pontoons, did not have adequate capacity and another site was needed. At this time, the project office was going to pursue a Request for Proposals (RFP) for other sites. The next month, February 2002, it was decided that there was not enough time to solicit proposals for other sites. Had the project manager created detailed project development schedules with sufficient lead time to evaluate the capacity and environmental challenges of the Concrete Tech site, a thorough search for acceptable sites could have been conducted and those sites investigated in a timely manner. The urgency that existed in June 2002 would not have existed.

The target “float-in” date of May 2006 for both closure of the bridge and installation of the replacement pontoons was the primary defined schedule element used by the Hood Canal Bridge PDT, as referenced in numerous minutes of team meetings. This target date was regarded as fixed by WSDOT and, as such, affected the decision-making process used to select the graving yard site. Our review of existing documents and our own interpretation of interviews could not discern if this target date was truly fixed. The October 1997 report that has been frequently cited by WSDOT as advising replacement of the bridge as soon as possible also presented a rehabilitation plan and suggested that replacement of the anchor cables could reduce the most critical risk of loss by storm damage. Given the December 2004 “shut-down” of the Port Angeles graving dock site, and upgrades made to the bridge anchor system, the float-in date has been adjusted. *This apparently immovable target “float-in” date affected many actions and events in all categories (i.e., planning, siting, environmental permitting, archaeological assessment, agency interaction, etc.) of the project reviewed by Foth & Van Dyke’s team.*

An additional consequence of developing the project without a well-planned schedule and the PDT’s focus on the May 2006 float-in date was the team’s decision to save time by securing the necessary permits for construction. While this procedure may have saved some time up front,

WSDOT's approach to obtaining the permits would dictate the contractor's methods of operation by restricting them to the conditions of the permits, thus losing the opportunity to benefit both financially and through time saved during construction from the contractor's ingenuity and innovative problem solving had he/she been allowed to negotiate the terms of the permits to fit his/her methods of operation.

3.1.4.2 Findings—Project Leadership

Development of the Hood Canal Bridge project suffered from a lack of leadership in the pre-construction phase. Changes and problems that threatened the schedule and success of the project were not foreseen. The project delivery team was not positioned to address these challenges in a timely and rational manner. All stakeholders were not brought together to work cooperatively for the success of the project. It did not appear that there was any one person who accepted immediate responsibility for the entire project development process. As previously cited in Section 3.1.3.3 of this report, this was not an unusual condition with the Department.

3.1.4.3 Findings—Technical Resources

The technical resources utilized by the PDT for the special tasks of bridge plan production, graving site plan production, and public involvement were appropriate and proficient. It was evident that the offices providing these services are experienced in their fields and very able to plan and perform their duties in support of the project.

Though available within WSDOT, project scheduling experts were not brought into the project team to assist in the creation of a detailed and comprehensive project development schedule. Such a schedule may have provided the time necessary for deliberate and planned attention to the inevitable project changes, questions, problems, and challenges.

3.1.4.4 Findings—Relationships and Actions/Influences of Others on the Project Development Process

From Foth & Van Dyke's review of available project records and reports, it appears that FHWA was performing its oversight role appropriately and did not influence either the technical development of the project or, more specifically, the selection of the graving yard site. Recommendations are, however, noted below by Foth & Van Dyke's NEPA and Cultural Resource teams where the State may coordinate with FHWA on possible areas of improvement.

The city of Port Angeles did directly influence the selection of the graving yard site. The City, seeing both a short-term and long-term economic benefit from such a facility, actively promoted the selection of the Port of Port Angeles site. WSDOT, knowing from experience that public acceptance of construction facilities is frequently difficult to find, felt fortunate to have this site proposed with official public support.

Second only to the HCB project manager, the Interdisciplinary Team (IDT) had the greatest influence on the selection of the graving yard site in Port Angeles (additional discussion in Subsection 3.2). From interviews of WSDOT personnel on the IDT and the PDT and from the review of IDT and PDT minutes, it appears that:

- ◆ The IDT strayed beyond its purpose of streamlining the permitting process and became involved in details of the project.
- ◆ The IDT operated without oversight.
- ◆ The IDT lacked clear leadership.
- ◆ Individual agenda influenced IDT actions.
- ◆ The IDT was allowed to exercise authority but that authority was ill-defined.
- ◆ The IDT did not accept responsibility for the consequences of its actions.
- ◆ The IDT discouraged elevation of disputes.
- ◆ The IDT and/or individuals therein discouraged the selection of any graving yard site other than the Port of Port Angeles site.
- ◆ WSDOT's project manager did not bring the IDT into the project team, thus accepting the IDT's lack of responsibility for the success or failure of the project.
- ◆ The PDT and the IDT were working independently with little coordination.

While some individuals on the Hood Canal Bridge project team had working relationships with their peers at the regulatory agencies due to work on previous projects, there was no evidence that project management had established a comprehensive plan for peer-to-peer communications and conflict resolution. Late in the project development process, when the IDT was formed, it was an attempt to speed the permitting process along by, among other things, creating working relationships among the IDT members. In interviews of project team members for this report, several members commented that, in their opinions, constructive working relationships did not develop because: 1) some agencies did not have staff members who were empowered to make decisions on the IDT; 2) the IDT, as a group, was reluctant to utilize its conflict resolution process for fear that it would be viewed as an admission of failure to reach its goal; and, 3) some individuals and their concerns seemed to dominate the group's work.

3.1.4.5 Findings—Project Oversight

WSDOT identifies the role of headquarters staff as one of support only, without project management or project development oversight responsibility or authority. On the Hood Canal Bridge Project, upper management therefore missed the opportunity to detect issues of significant importance to the success of the project (e.g., the lack of a comprehensive schedule, the lack of a plan for siting the graving dock, and challenges to the project development process brought about by actions of the interdisciplinary team). If the constructability, scheduling, and project management experts of the headquarters staff had been more directly involved in the

development of the HCB project, it is likely that the decision of the site of a graving dock would have been made more timely and with more investigation.

3.1.5 Recommendations for Organizational and Process Improvements at WSDOT

The following recommendations primarily pertain to the design function within the project development process and are derived from Foth & Van Dyke's observations of the work done by the Hood Canal Bridge (HCB) project team. Foth & Van Dyke recognizes that WSDOT has already revised its process, particularly in the areas of project control and reporting, and has addressed some of the deficiencies that existed during the development of the HCB project. However, not all revisions have been implemented consistently throughout WSDOT.

Recommendation No. 1: Every new WSDOT process or improvement to an existing process should be accompanied by a mandatory implementation plan and followed by an evaluation plan. WSDOT Regions practice a high level of autonomy in their current organizational structure. Some regions may be slow to implement new processes and embrace new technology, thus depriving their staff and their projects of the best available resources. Process changes are not meaningful if they are not implemented and subsequently evaluated to determine if they accomplished the improvements intended. Though WSDOT's Central Design Office had initiated several changes in project development processes and project reporting, several Region personnel, including the Hood Canal Bridge project manager, stated that they were not aware of the changes.

Recommendation No. 2: WSDOT should require the use of critical path scheduling of the project development processes used on complex projects. Project managers can be successful project leaders if they are able to foresee problems that inevitably occur on their projects and how these problems affect the schedule. With adequate lead time, hasty decisions can be avoided and well thought through decisions can be made with full understanding of the consequences and of possible new risks to the project.

Recommendation No. 3: WSDOT should require all project managers to have project leadership, management and responsibility training. The person in charge of a project needs more than management skills. He/she also needs leadership skills and needs to take responsibility. All too often, project managers spend too much time being information managers, dutifully filing reports on what has happened, and too little time being project leaders, determining what will happen. If a project is completed over budget, late, and with "surprises," chances are that the project lacked a leader.

Recommendation No. 4: WSDOT should utilize “strategic partnering” to improve both intra- and inter-agency relationships. “Project partnering,” a technique for improving working relationships among participants in a construction project, has been used on a great number of WSDOT construction projects. The same technique can prove to be very effective in improving working relationships among the members of different agencies as well as members of different offices within one agency. This is “strategic partnering.” Unlike the “committee” approach to team building, which gathers *representatives* of the various work groups, “strategic partnering” calls for *all* members who interact together to participate in the partnering effort.

Recommendation No. 5: WSDOT should continue to expand the utilization of consulting firms for both project and program management. Our understanding from our interviews with WSDOT, like many state departments of transportation, is that WSDOT is witnessing a shortage of experienced project development engineers due to budget constraints and the retirement of engineers hired during the interstate highway construction era. This gap can be filled by utilizing consultants with the experience and expertise to provide assistance in not only managing projects, but also programs. In Wisconsin for example, WisDOT has contracted with engineering consulting firms for the management of the State Local Highway Improvement Programs and, most recently, for the management of the \$800 million Marquette Interchange Construction Program.

Recommendation No. 6: WSDOT should encourage and support the development of internal subject matter experts. A designer can save time and avoid some problems if he/she is able to consult a seasoned expert who has worked on similar projects. Across the country, our experience indicates that fewer state DOT in-house experts exist because of the ongoing retirement of engineers that entered the profession during the interstate highway construction era. Interviews with staff indicate that the remaining WSDOT experts may not be known to everyone in project development at WSDOT, possibly because of this retirement phase in engineering. Interviews indicate that in the past, each region had a cadre of experts. Everyone knew who they were and that they were readily available. Identifying the available WSDOT experts, publicizing their whereabouts, and encouraging designers to contact them can provide designers with valuable resources. Freeing these experts from less value-added tasks and projects may be required.

Recommendation No. 7: WSDOT should develop greater project oversight by its headquarters’ design, project management, and construction services. Provided with defined roles, responsibilities, and authorities, the personnel at headquarters can lend their experience and expertise to improve the project development process used on individual projects. Scheduling experts can see that projects, especially unique and complex projects such as floating bridges, need detailed and comprehensive schedules created and maintained for the duration of the projects. Construction experts can provide constructability and bidability reviews at critical stages of project development to assure the functionality of the plans and specifications. Project management experts can assure that the regions and project managers are fully utilizing the resources and procedures that will most benefit their projects.

3.2 Environmental Influences and the Graving Dock Site Selection

Subsection 3.2, together with Subsections 3.1 and 3.3; address JLARC’s “Study Objective Number 1 – Site Selection.” Said differently, this subsection focuses on how Port Angeles was chosen as the graving dock site from an environmental perspective (as opposed to the previous Section 3.1, which was from WSDOT’s siting and planning perspective). There are several intertwining issues beyond permitting and construction costs and timeline considerations that led to the decision to go to Port Angeles. “Cost” issues such as operational costs for more frequent flooding cycles at Concrete Technology Corporation, and planning and construction costs for the graving dock required for the larger SR 520 Bridge pontoons are discussed below.

Contractor options for the use of an existing graving dock or construction of a new graving dock were identified in the HCB Environmental Assessment (EA) dated March 2002. As typical with transportation projects, the contractor was to make the final choice on site selection for pontoon construction. However, as IDT meetings proceeded, it became apparent that a graving dock site needed to be identified as soon as possible to meet the project “float-in” date.

A graving dock site was needed for the HCB project and foreseeable future projects, becoming a matter of demonstrable State need, and the agencies represented on the IDT agreed to this basic premise. WSDOT’s approach and ability to obtain permits for a potential graving dock site was a major impact to the environmental process and overall timeline for the HCB project.

A graving dock alternatives analysis of the entire coast was too extensive of an endeavor for WSDOT to undertake, so the approach was general, and included flagging typical impacts and issues regardless of location (personal communication, WSDOT). While availability, affordability and distance were basic factors in examining alternatives, the target “float-in” date dictated every step be figured into the timelines, with pressure to meet those timelines (WSDOT).

In June 2002, a city of Port Angeles councilmember asked WSDOT to consider a property, which was becoming available at the Port of Port Angeles on the harbor and could potentially meet WSDOT’s need for a graving dock (personal communication, city of Port Angeles, WSDOT; PDT minutes FVD0158). WSDOT representatives visited Port Angeles and met with the Port of Port Angeles and the city of Port Angeles to evaluate the site’s potential for anchor construction. WSDOT found after further evaluation that the site was of sufficient size for a new graving dock facility to construct both anchors and pontoons. The site would not only meet the HCB project needs, but also the needs of future WSDOT projects, especially the SR 520 Lake Washington Bridge (PDT minutes, FVD0159).

Our review team identified the target “float-in” date as one of the primary components of the site selection process that impacted many other issues and decision-making events (see Subection 3.1 above). Given that the HCB construction “float-in” date was inflexible by WSDOT’s own accord, there were three other issues that we reviewed to understand the environmental influences that led to the justification of selection of Port Angeles as the graving dock site. Foth and Van Dyke reviewed whether:

- ◆ The selection was made, in part, because Port Angeles was environmentally preferable.
- ◆ The selection was made, in part, because there was a politically friendly and otherwise receptive atmosphere in Port Angeles.
- ◆ The Fisheries and Endangered Species Act (ESA) considerations dictated the selection of Port Angeles.

3.2.1 Was Port Angeles perceived to be environmentally preferable over other sites?

3.2.1.1 Criteria

The National Environmental Policy Act (NEPA), as amended, Public Law 91-190, 42 U.S.C. § 4321-4347, is a procedural law that establishes a framework for integrating environmental considerations into federal agency decision-making. Passed by the U.S. Congress in 1969, NEPA requires that prior to federal undertakings that could impact the quality of the human environment (natural and built environment), the potential environmental impacts of alternatives must be documented. The documentation may include an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). All federal actions, which involve federal funding, federal permits and approvals, federal lands and facilities, and federal agency rulemaking, are subject to NEPA review. NEPA Sec 1508.9(b) indicates that an EA “shall include a brief discussion of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.”

The State Environmental Policy Act (SEPA), Chapter 43.21C RCW, is a state of Washington procedural law that establishes a framework for integrating environmental considerations into state and local agency decision-making. Enacted in 1971, SEPA requires that prior to a state or local proposal or undertaking that could impact the human environment, the environmental consequences of the action must be considered. The information provided during the SEPA process can help to refine a proposal in order to minimize environmental impacts or to deny a proposal when adverse environmental impacts are identified. The process also allows review of possible project alternatives and mitigation measures that will reduce the environmental impact of an action. Both the NEPA and SEPA processes also allow for public review and comment, which is important as a criterion for our analysis of the “Politically Friendly” atmosphere discussed further below in Subsection 3.2.2.

3.2.1.2 Conditions

When attempting to draw a comparison of the Port Angeles site to other potential sites, WSDOT’s only recognized viable alternative, which would be adequate only for pontoon fabrication, was the Concrete Technologies Corporation (CTC) site in Tacoma. CTC, however, could not deliver the project by itself (personal communication, WSDOT; PDT minutes, FVD1417). A key issue at the IDT meetings was: Where were the pontoons going to be built and where were the anchors going to be built (IDT minutes, personal communication, WSDOT)?

The resource agencies strongly encouraged WSDOT to select one site for both pontoons and anchors (personal communication, WSDOT). Communications with the resource agencies regarding potential use of deep water or shoreline areas indicated that those areas were totally excluded for cost or logistical considerations or salmon/fisheries impacts, respectfully. Other graving dock sites were also dismissed in a largely undocumented manner in 2001—at both the Port Gamble and Port Angeles’ Rayonier sites. (The Rayonier site is different from the Port of Port Angeles site selected later in 2002.)

Therefore, the real decision, given the inflexible construction and permitting schedule, was to try to manage construction at two sites with both the CTC and a separate anchor site, or construct both the pontoons and anchors at Port Angeles’ single site. Foth and Van Dyke did not receive formal documentation indicating a graving dock alternatives study was conducted prior to the selection of the Port Angeles site to either justify or reject another pontoon or anchor construction site. If WSDOT had decided to go through a “Request for Proposals” for pontoon and anchor construction with potential contractors prior to the selection of the Port of Port Angeles site, then other ideas may have surfaced. Since the CTC site was under lease by WSDOT, what were the continuing environmental problems and obstacles to using the site? Communications with the agencies revealed the following basic challenges with the CTC site.

- ◆ The physical configuration of the CTC site inhibited retrofitting for fisheries (personal communication, WDFW). Cycling, shading/shadowing, and near-shore use were all real issues at the CTC site (personal communication, WSDOT; PDT minutes and IDT minutes). WDFW and other resource agencies did not like the CTC site, and wanted another site identified (personal communication, WSDOT; IDT minutes). CTC’s site was too small, necessitating multiple graving dock openings/closings and resulting in more opportunities for fish kills (personal communication, WDFW).
- ◆ Industrialization and significant cumulative near-shore impacts had already occurred at and near the CTC site; therefore, the remaining relatively pristine areas were deemed critical habitat by the regulating agencies (personal communication, WSDOT). Ninety-eight percent (98 percent) of the shallow water habitat in the vicinity of CTC was gone or impacted (personal communication, WDFW).
- ◆ Environmental windows (i.e., the time periods that are considered best for an action such as construction to help avoid adverse ecological/environmental impacts) limited opening the CTC site to the November-December period (personal communication, WDFW).
- ◆ SR 520’s Lake Washington Bridge pontoons could not be built at CTC (personal communication WSDOT, WDFW; PDT minutes).
- ◆ CTC was concerned with the use of their facility that might cause future regulatory problems (PDT minutes, FVD1416).
- ◆ WDFW did not like the CTC site, and requested many facility improvements (personal communication, WSDOT).

In addition to its small size, WSDOT recognized that there were serious environmental, cost, and mitigation issues at the CTC site. As a result, WSDOT continued to search for a graving dock. WSDOT received multiple objections from WDFW when they brought various sites to their attention and many of these sites were turned down due to concerns related to fisheries (personal communication, WSDOT). Alternative sites and methods were discarded without thorough evaluation due to input from resource agencies (personal communication, WSDOT). The resource agencies steered WSDOT away from the CTC site, and no progress was made until the Port Angeles site was identified (personal communication, WSDOT).

Thus, the Port Angeles site became the path of least resistance when regulators objected to other solutions (multiple communications, WSDOT). Resource agencies on the IDT strongly supported the selection of the Port Angeles site (personal communication, WDFW; PDT minutes, FVD1424), and were of the opinion that the Port Angeles site would meet the Section 7 ESA requirements (personal communication, WSDOT). NOAA, WDFW and USFW believed that the Port Angeles site had fewer potential adverse impacts compared to the CTC site, including the need for less dredging, fewer open-and-close cycles, greater distance (>7 miles) from a river mouth (and salmon), and more mitigation options. The WDFW believed that the Port Angeles site was a good site, and to their reasoning justified eliminating the need to search further.

Months after the selection of the Port Angeles graving dock site a “*Graving Dock Alternatives Analysis*” Report (May 9, 2003) was issued by WSDOT. The “*Graving Dock Alternatives Analysis*” Report (FVD0026) evaluates three existing graving dock facilities including the CTC site and new facilities including Port Angeles. The *Graving Dock Alternatives Analysis* Report concluded that “*A new facility at Port Angeles represents the only practicable alternative that meets the project purpose and need.*” The report also states that WSDOT believed this site to be the least environmentally damaging of available sites for a new facility because development of this industrial site:

- ◆ Incurs minimal environmental/ecological impacts,
- ◆ Yields relatively low levels of contaminated property and will not involve significant contaminated materials handling and mitigation, and
- ◆ Avoids pristine environmental conditions because it has already been subjected to industrial land uses for the past 100 years.

3.2.1.3 Findings

Operating under the assumption of an inflexible construction and permitting schedule, Foth & Van Dyke recognizes that the apparent lack of viable alternative sites combined with the environmental and regulatory problems at the CTC site, and the advocacy of Port Angeles by the regulating agencies, resulted in WSDOT making a logical choice of Port Angeles for the graving dock and anchor fabrication site. Natural resource, regulatory, and statutory requirements and perspectives all indicate that Port Angeles was the only apparent viable choice (given the target

“float-in” date, information available for this audit, and the available choices at the time of the site-selection process).

3.2.1.4 Professional Suggestions

Professional Suggestion A: WSDOT and other state agencies should conduct early planning and siting of coastal infrastructure projects. The State should continue, as they tried to do with the CTC site, to plan for future identified coastal industrial infrastructure requirements (e.g., a graving dock); however, the State should act years in advance of actual need and recognize that each site will have a unique set of environmental factors, and probably permitting time frames. Determining the presence and extent of endangered species and marine habitat and thus ease of permitting at a location along the coast is critical for the construction of coastal infrastructure. The search for a viable coastline location is apparently a project in itself, and should be treated as such within WSDOT. Said differently, create a project team for the siting and planning of significant coastline infrastructure projects. Identify these potential sites well in advance of perceived needs, and perhaps purchase or lease the property, or obtain easements to “lock” them up for future needs. Perform a thorough due diligence on these sites before they are purchased, leased, or locked into an easement. These properties could be maintained as State property or eventually sold to a private party for future development, whichever is most beneficial to the State.

3.2.2 Politically “Friendly” Atmosphere at Port Angeles

3.2.2.1 Criteria

WSDOT evaluated the Port Angeles site and found that the site would meet their needs for a new graving dock facility. Furthermore, this site would not only meet the HCB project needs, but also the needs of future WSDOT projects. (PDT minutes, FVD0159).

The NEPA and SEPA processes provide an opportunity for the public to comment on a pending project. Other than that, using criteria to measure whether a “politically friendly” environment steered WSDOT toward selection of Port Angeles for a graving dock site is mostly subjective. That said, Foth & Van Dyke’s professional opinion is that development agencies across the United States including those in the state of Washington typically struggle with regulatory/resource agencies. Development agencies like WSDOT typically encounter stiff resistance from resource agencies because a development agency tends to build for the benefit of the economy, which is often at the expense of that which the other agency is mandated to protect. Communities are often torn between support or non-support for the development because, as for example, “Not In My Back Yard (NIMBY)” and the “Creates More Jobs” opposing view points become apparent. Public relations and communications typically are very important for the successful completion or defeat (depending upon one’s personal viewpoint) of a controversial development. When a developing agency locates a site that is widely accepted by both the local citizens and the regulatory/resource agencies, the result is often viewed as a win-win outcome and nearly everyone is satisfied with the end result. The local community perceives the construction/operation/maintenance of a site as an economic boost to the area. The regulatory agencies and environmentalists see relatively less adverse impact to the area’s environment than

if a development placed elsewhere; and sometimes the development can help fund and create improvements to an otherwise less desirable environment.

3.2.2.2 Conditions

There was a great deal of support in the Port Angeles community to utilize the Port of Port Angeles location for a graving yard. Various entities such as the city of Port Angeles Chamber of Commerce and Clallam County Economic Development sent letters of support for the project (FVD0242, FVD0018, and FVD0243).

The potential project was projected to bring approximately 80 jobs (40 local) to the area and significant economic benefit to the area (economic report, FVD0067). An estimated \$11.5 million to \$18 million would be received locally from the graving dock construction and operation. State Legislative Representatives also supported the development of the Port Angeles site because of the economic opportunities the project would bring to the area.

The Port of Port Angeles believed that since WSDOT publicized their intent to construct a graving dock on the Port Angeles site prior to the completion of the land transaction, that this put community and state pressure on the Port of Port Angeles to lease/sell the site to WSDOT for construction of the graving dock at a reduced cost (personal communication, Port of Port Angeles).

The Port Angeles City Council was of the opinion that once WSDOT was in negotiations with the Port of Port Angeles, the City was excluded from communications regarding the graving dock (personal communication, City). The city's planning department was not involved in WSDOT permitting discussions until after WSDOT submitted the Shoreline Substantial Development Permit Application to the City (personal communication, City). During the local permitting process the majority of the planning department's contact was with the local Port Angeles WSDOT office, not the Olympia office responsible for environmental permitting.

There was some thought at WSDOT that permits would be expedited if the Port Angeles site was chosen (PDT minutes, FVD1415). WDFW, who was opposed to the CTC site, was an advocate of using the Port Angeles site (personal communication, WDFW).

WSDOT did a very good job with community outreach regarding pending bridge construction of the HCB. WSDOT began community outreach in 1997 to determine public ideas and opinions about how to minimize the effects of the project, in particular the closure time that would be required to replace the bridge (WSDOT, website). WSDOT prepared newsletters beginning in the fall of 1999. The newsletters were quarterly at first and in December 2003 began being issued monthly. Also WSDOT maintains a website devoted to the project, which is updated weekly <http://www.wsdot.wa.gov/projects/sr104hoodcanalbridgeeast/>. The website allows the public to sign up for e-mail updates and allows for a group or organization to schedule a WSDOT project update through the website. The outreach program focused mainly on bridge closure mitigation. Upon review of WSDOT documents and website, and interviews with the city of Port Angeles, it does not appear that WSDOT did the same level of communication in the City regarding the graving dock development as they did for bridge construction. City Council

members and city personnel opined that WSDOT did not involve them in communications especially with tribal cultural resource issues.

3.2.2.3 Findings

Despite some communication concerns forwarded by the city of Port Angeles and the Port of Port Angeles, the politically friendly atmosphere at Port Angeles made it easier for WSDOT to pursue the graving dock site because it represented the “path of least resistance.” The construction of a graving dock in the City was viewed as a potential economic boost for the area by city, county and state governments, businesses, and residents. Foth & Van Dyke’s review of available documents indicated that the city of Port Angeles was included in project communications up until the City permits were issued; but apparently outside of WSDOT’s communication process once the local permits were issued, construction began, and the village site of Tse-whit-zen was discovered.

3.2.2.4 Professional Suggestions

Professional Suggestion B: WSDOT should keep local officials in the project communications throughout the siting, permitting, and construction process. This can be done by having regularly scheduled meetings with local officials to provide them with first-hand updates on project progress and by inviting them to site visits. Local permitting agencies should be involved at the beginning of the permitting process and on a regular basis throughout the process.

3.2.3 Did Fisheries and Endangered Species Act considerations dictate site selection?

3.2.3.1 Criteria

The Federal Endangered Species Act (ESA), Public Law 93-205, 16 U.S.C. § 1531-1544, as amended, was first passed by Congress and signed into law on December 28, 1973. The law protects those species, and their critical habitats, which are threatened with extinction.

Section 1538, ESA § 9(a)(1), states in pertinent part “Except as provided ... it is unlawful for any person subject to the jurisdiction of the United States to (B) take any such (endangered) species” Section 1532 (ESA § 3) defines “take” to include “... harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”

The ESA protects federally listed animals wherever they occur and federally listed plants whenever there is federal involvement in land transactions, funding, or permitting. Because the HCB project involved federal funding and permitting, and listed (protected) fish and animals occur in the project zones, the project was subject to the jurisdiction and regulatory authority of the ESA.

Section 1539 (ESA § 10) provides for permitting an activity which may cause a “taking” incidental to an otherwise lawful activity. The procedures essentially mirror most State and federal resource regulatory laws. An ESA permit or clearance may be obtained for a project if an

applicant demonstrates there are no alternatives that would avoid or minimize harm, then demonstrates the unavoidable impacts have been minimized, and finally proposes or accepts a compensatory mitigation measures requirement.

The burden is on the applicant to show that different locations, methods, materials, or means that would avoid or minimize harm to a protected species are not practicable.

Efforts to comply with the law and regulations vary and are dependent upon location, the species involved, and at times the individual regulators involved.

The regulations allow development of site- and species-specific protection criteria, a pertinent example of which is “environmental windows” for dredging and other near shore regulated activities. These “windows” take into account species presence and needs to prohibit an activity during a certain time period. For example, the state of Washington prohibits dredging in the Hood Canal from March 15 to June 14 to protect juvenile salmon, and the opening of the Concrete Technology Corporation (CTC) graving dock was limited to November and December. Most states have established periods where dredging is prohibited based on the seasonal presence of the species of concern. There are waivers or modifications of these windows available, but again the burden is on the applicant to demonstrate that the need and benefit is greater than the risk. For example, the WDFW allowed dredging within a closure period for the Commencement Bay Superfund remediation dredging.

Because some salmonids are endangered, any ESA-defined “take” becomes legally and politically extremely sensitive in Washington State.

3.2.3.2 Conditions

Identification of environmental permitting requirements for the HCB project began in the summer of 1999. Initial permitting discussions and preparation of the Environmental Assessment (EA) identified that the Section 7 Endangered Species Act (ESA) consultation was going to complicate WSDOT’s strategy for bidding and construction of the bridge project, particularly within the established timeline. The EA identified that various aspects of HCB construction would affect threatened and endangered marine species.

Since the last use of the CTC graving dock, several species of salmonids have been added to the ESA listings (personal communication, WDFW). Therefore, the listing of these species required considerations in planning, design and permitting of the HCB project which were not present for earlier construction projects. In addition, the cultural and commercial value of the salmon resources coupled with the focus on natural resources, which reflects the value system in the state of Washington, all weighed heavily in identifying fisheries impact minimization as the key parameter in permitting the HCB project (personal communications, WSDOT, WDFW and DOE). WDFW informed WSDOT that fisheries were the major issue with any coastal site (personal communication, WSDOT).

Federal and state law required WSDOT to focus efforts on avoiding and minimizing any potential impact to natural resources and in particular to endangered and threatened species. As

project planning and permitting efforts progressed, the multiple fisheries, habitat, and access issues at the HCB site itself were the subject of many meetings and multiple design and planning changes (PDT and IDT meeting notes). These efforts resulted in all involved agencies agreeing to permitting parameters and conditions, and the FHWA issuing a Finding of No Significant Impact (FONSI) for the bridge replacement under National Environmental Policy Act (NEPA). These documents, agreements and approvals left open the issue of a graving dock location for both pontoons and anchors.

Subsequent to issuance of the Hood Canal Bridge FONSI the concerns regarding retrofitting, operation and sequencing of pontoon and anchor construction at one or multiple graving docks quickly became significant issues in the efforts to streamline the regulatory approval process. So too, did the potential need for temporary moorage of pontoons in near shore waters to affix the superstructures (PDT and IDT minutes). All of these issues were identified early in the IDT meetings, partly because of the focus resulting from a lack of a designated graving dock site (personal communications, WSDOT and resource agencies). Interviews and document review revealed the following major issues dominated fisheries and ESA concerns in operating a graving dock:

- ◆ Environmental windows,
- ◆ Shading from temporary moorage for superstructure work, and
- ◆ Entrapment and entrainment during flooding, openings, and closings.

Environmental windows limited the opening of the CTC site to November and December for example, which would in part dictate the construction schedule if that site were chosen (personal communication, WDFW). Although some protective windows would occur regardless of the site chosen, the location would dictate the actual restrictions.

Although waivers from, and modifications of, environmental windows are considered elsewhere in the United States (requested by the Corps of Engineers for example), there is no mention or discussion of this option in the project record. WSDOT and the resource agencies did negotiate and develop various methods and permit conditions addressing resource impact (FVD2211), but there appears to be no formalized procedure to waive or alter window time frames.

The fisheries shading issue resulted from the potential need to erect superstructures on the fabricated pontoons, exterior to the graving dock and in near shore waters where young salmon migrate and forage. The concern results from the potential for underwater stark lighting contrasts to divert, delay, or preclude fish from entering such an area (personal communication, NOAA Fisheries). In addition, the height and orientation of the moored structures as well as duration of moorage are factors in the extent of shading impact (personal communication, NOAA). The temporary shading impacts to vegetation were not a large concern (personal communication, NOAA). The crux of the shading issue is the physical inability of the salmon species to dilate their eyes, instead requiring slow activation of rods and cones to adapt to light changes (personal communication, WDFW). The potential diversion of young salmonids into

deeper water, impeding movement and causing delay in an area, and exclusion from shallow forage and cover habitat zones all increase the potential for predation (personal communications, NOAA & WDFW). The IDT struggled with this issue and repeatedly debated the need to firmly identify a site or sites for pontoon and anchor construction (IDT minutes, personal communication, WSDOT).

The Draft Puget Sound Salmon Recovery Plan acknowledges and documents shading impacts of permanent structures, but does not discuss temporary shading.

Entrapment and entrainment of fish during opening and closing of a graving dock was the third primary fisheries/ESA issue. This was true regardless of the location of the graving dock (personal communications, WSDOT, WDFW, and NOAA). The concern regarding potential salmon and fisheries kills was not speculation, as fish kills had occurred in the past at the CTC (personal communication, WDFW) and Navy dry docks (personal communication, NOAA). Thus, the number of times a dock would have to open and close became an issue of great concern (PDT minutes, FVD1418). The less cycling need, the less the ESA would be an issue (IDT minutes, FVD1562). The importance of the issue was highlighted by the fact fisheries considerations would dictate flooding and draining design elements of a new graving dock (FVD1517).

Regardless of where a graving dock operation was located, compensatory mitigation would be required for unavoidable fisheries and habitat impacts (IDT minutes, documents and communications with all resource agencies). WSDOT reported that the ESA has changed how site permitting is now completed (personal communication, WSDOT).

3.2.3.3 Findings

Given the inflexible bridge “float-in” date, WSDOT had no other realistic option other than Port Angeles. When provided a possible site that the resource agencies advocated as apparently workable under all the regulatory constraints, WSDOT had no other realistic or regulatory options. Fisheries and ESA considerations and regulations severely limit siting options for a graving dock.

Protective environmental windows are increasing in number and complexity, and the recent trend is likely to continue. This situation is not unique to Washington, which along with other states would benefit by establishing a procedure for requesting waivers or modifications of such windows. Applicants and agencies alike would understand their defined responsibilities and timelines, thereby saving time and expense. The created procedure would facilitate response to emergency situations or those anticipated to have significant adverse effect on health, safety, or welfare of the people.

3.2.3.4 Recommendations and Professional Suggestions

Recommendation No. 8: WSDOT should incorporate ESA and fisheries considerations at the earliest possible opportunity for any transportation project with the potential for impact. Since regulatory considerations may dictate design (and cost) considerations, it makes sense to conduct

a fatal flaw analysis regarding such concerns as early as possible. The entire coast is subject to these concerns.

Professional Suggestion C: WSDOT should explore the potential to establish a procedure for requesting a waiver or modification of environmental windows on a per-project, and justifiable basis. An example of such a procedure was developed by the Corps of Engineers, Philadelphia District, and the state of Delaware, for the Main Channel Deepening Project in Delaware Bay.

Professional Suggestion D: WSDOT and the resource agencies could address future inevitable fisheries and coastal habitat impacts from planned transportation projects by considering the potential for up-front compensatory mitigation applicable in a programmatic context. This would allow WSDOT to budget and plan more effectively, and take advantage of “moments of opportunity” in construction and maintenance activities where cost-effective improvements could be accomplished that exceed any reasonable assessment of impact. There are certainly some fisheries needs which would benefit the resource state wide. The applicability and extent such “credits” may be used for a given future project will be the contentious issue. Based upon our professional experience in other states, the regulatory community may resist this approach and the development agencies may wish to apply the concept excessively, but there is a middle ground that is both beneficial to the resources and cost-effective in planning, permitting, and constructing projects. Tribal fisheries and fishing rights must be taken into consideration in any programmatic agreement, and tribal involvement in the process may be beneficial in restoration and stewardship of resources and habitats on a project basis.

3.3 Environmental Permit Streamlining, Regulatory Compliance and Procedural Effectiveness

Subsection 3.3 is an analysis of the effects that streamlining may have had upon the environmental permitting of the graving dock site selection and cultural resources survey work. Our findings in this subsection relate to multiple JLARC objectives including site selection and environmental permitting (discussed in Subsections 3.1 and 3.2 above) as well as the JLARC objective relating to actions of interested parties which will be presented in Subsection 3.4 later in this report.

WSDOT began scoping permitting requirements and identifying potential environmental impacts for the HCB project in the summer of 1999. Approximately two years later in November 2001, the HCB replacement (SR 104) was selected as a TPEAC “*environmental streamlining*” pilot project. The intent of TPEAC is to achieve transportation and environmental goals by integrating early resource agency involvement. A TPEAC Interdisciplinary Team (IDT) was created for the HCB project that consisted of staff from WSDOT, Washington Department of Ecology (DOE), Washington Department of Fish and Wildlife (WDFW), Washington Department of Natural Resources (DNR), Kitsap County, Jefferson County, NOAA Fisheries (NOAA), U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFW), U.S. Coast Guard, and the Federal Highway Administration (FHWA). Jefferson County was unable to participate on the IDT due to resource constraints. The local Native American tribes

were also invited to participate on the IDT, but limited documentation was available to Foth & Van Dyke on why they were not regular attendees. As noted by IDT members, the IDT focus was on the marine environment, and cultural resource management representation was not invited to be part of the active team. Although TPEAC may not have included provisions for other technical expertise such as cultural resource management to be a part of the IDT process, neither did TPEAC preclude the IDT members from including cultural resources on the IDT or from conducting adequate planning and review for assessments as required by federal or state law.

Six key issues affecting the permitting process were identified by Foth & Van Dyke as a result of interviews and document reviews. These six key issues are discussed in more detail in the following subsections:

- ◆ 3.3.1 – Hood Canal Bridge (HCB) Environmental Permit Streamlining Process,
- ◆ 3.3.2 – NEPA/SEPA process,
- ◆ 3.3.3 – Structure and Leadership of the Hood Canal Bridge (HCB) Interdisciplinary Team (IDT),
- ◆ 3.3.4 – The TPEAC Interdisciplinary Team's (IDT) Working Knowledge of All Disciplines Needed to Facilitate the Hood Canal Bridge (HCB) Project,
- ◆ 3.3.5 – Cost, Focus and Efficiency of the TPEAC Hood Canal Bridge (HCB) Interdisciplinary Team (IDT), and
- ◆ 3.3.6 – State, Local and Federal Agency Interaction.

3.3.1 Hood Canal Bridge (HCB) Environmental Permit Streamlining Process

3.3.1.1 Criteria

The IDT began meeting in March 2002 and met approximately 23 to 24 times. The first few meetings included development of a team charter which identified TPEAC goals:

- ◆ Increase in environmental benefit,
- ◆ Reduction in redesign of transportation projects,
- ◆ Reduction in permit timing,
- ◆ Incorporating projects into programmatic, and
- ◆ Education in mitigation cost.

When first formed the HCB IDT was to have all permits in place for the HCB by November 2002 via a “one-stop permitting” process. However, the completion date changed with the addition of the graving dock site. This project review will be difficult to measure against the goals listed above because they are for a “program” compared to the single portion of a project that the Foth & Van Dyke team reviewed. Our team could, however, review the permitting deadline goal(s) and the “one-stop permitting.” The only readily apparent permitting deadline that Foth & Van Dyke identified from thousands of available project review documents was from a draft IDT schedule dated December 9, 2002 (FVD1658). This draft document had a final permitting date of *May 2003*, but “one-stop permitting” was already known by the IDT in December 2002 to be unachievable by the time the May 2003 date was set.

WSDOT as the lead permitting agency for the HCB project was responsible for the NEPA/SEPA and Section 106 requirements (the FHWA had delegated their Section 106 responsibility to WSDOT).

3.3.1.2 Conditions

When the IDT began, it was focused on environmental permitting of the HCB site. As permitting progressed it was determined that a graving dock site needed to be identified in order to meet Section 7 Endangered Species Act (ESA) requirements. Various graving dock options were discussed in the meetings. As discussed earlier, when the Port Angeles site was brought forward to the IDT as a potential site, the IDT was overwhelmingly in favor of selecting the site for both pontoon and anchor construction (PDT minutes, FVD1424). WSDOT announced in November 2002 that they would be constructing a graving dock at the Port Angeles site. IDT permitting efforts then shifted to the permitting of the graving dock site. Graving dock permitting was handled separately from the HCB, except in the case of Section 7 ESA consultation which considered all elements as one project.

TPEAC streamlining attempted to have one permit for all agencies. The IDT agreed to use a single-application process but struggled with identifying the application to prepare to meet all agency requirements. Washington’s Joint Aquatics Resources Permit Application (JARPA) was selected for this purpose. The JARPA can be used to apply for a variety of local, state, and federal permits. Permits included in JARPA that apply to the graving dock site are:

- ◆ Shoreline Management Permits (city and DOE),
- ◆ Hydraulic Permit Approval (WDFW),
- ◆ 401 Water Quality Certification (DOE),
- ◆ Aquatic Resources Use and Notification (DNR), and
- ◆ Section 404 and Section 10 permits (USACE).

Resource agencies found that the JARPA met many of their information and application needs, but through interviews with resource agency personnel it was determined that this concept of one

application was really not well accepted. Each resource agency had their own legal requirements regarding what was to be included in their permit applications, so each agency needed some form of unique information added to the JARPA package. With each agency wanting a different application or additional information added to JARPA, essentially nothing was streamlined (personal communication, WSDOT). WSDOT believed the resource agencies were reluctant to have one permit because they may have to give up jurisdiction to a different agency. However, the multi-agency negotiation of JARPA contents did help familiarize the agencies with the project scope and allowed for a common baseline of information (Enviroissues, November 2003). A completely standardized JARPA was not submitted for the graving dock site as it was for the bridge site because of overall project time constraints; so, WSDOT did more individualized permits for the graving dock. Below is a summary of the graving dock environmental permit applications and the related timeline. The timeline does not include the schedule for the preparation of the applications.

- ◆ The Hydraulic Permit Approval (HPA) application was submitted January 17, 2003, to WDFW and revised January 29, 2003. WDFW issued the first draft permit January 30, 2003, with the final permit issued March 17, 2003. The issuance of the final permit then triggered a 30-day appeal process. Overall, the HPA process took about two months.
- ◆ The Shoreline Substantial Development Permit was submitted to the city of Port Angeles using JARPA on December 24, 2002. The City issued an exemption on January 23, 2003, and forwarded it to DOE for filing. DOE issued a filing letter on February 14, 2003, which began a 21-day appeal period. WSDOT appealed some of the locally-imposed conditions. The appeal was settled March 4, 2003. Total time for the permit process was about 2.5 months.
- ◆ WSDOT applied to DOE on January 10, 2003, for a Coastal Zone Management (CZM) permit. Concurrency was granted in concert with a conditional 401 Water Quality Certification on May 29, 2003. The 30-day appeal period ended June 29, 2003. The total time for the CZM process was approximately 5.5 months.
- ◆ Clean Water Act Section 401 Water Quality Certification process was triggered by the USACE 404/10 permit application that was submitted on January 8, 2003. The 401 permit was issued May 29, 2003, and the 30-day appeal period began—which then ended June 29, 2003. This process took a total of about 5.5 months.
- ◆ A Clean Water Act Section 404 Nationwide Permit 15 application was submitted January 8, 2003, to the USACE. Mitigation plans were then submitted March 12, 2003. USACE issued comments and WSDOT responded in April 2003. USACE requested an alternative analysis for graving dock location selection. The alternatives analysis was submitted May 9, 2003. Total time for permit issuance was over 4.5 months because USACE wanted to review the Biological Opinion (BO) before issuing the permit.
- ◆ The National Pollution Discharge and Elimination System (NPDES) notice of intent (NOI) was submitted to DOE January 17, 2003, and the public notice issued January 29,

2003. Comments were received February 14, 2003, and responses issued March 7, 2003. The NPDES permit was issued April 8, 2003. Overall it took about three months for the NPDES permit process.

- ◆ The Biological Assessment for the Hood Canal Bridge was submitted May 21, 2002, to NOAA and USFW. The Biological Assessment then required two addenda. It was then revised to add the graving dock site on January 1, 2003. This started the formal consultation with NOAA and USFW. Additional addenda were also issued for the graving dock. NOAA and USFW issued draft conditions to WSDOT on February 18, 2003. The issuance of the draft conditions allowed the project to be bid. The Biological Opinion was issued May 5, 2003. The time from Biological Assessment to Biological Opinion was about one year, or approximately half of the normal time schedule (personal communication, WSDOT).

A White Paper prepared for TPEAC titled “*Concurrent Agency, Public Comment and Appeal Processes: What are the Opportunities for Streamlining?*” (Enviroissues, November 2003) contains a detailed discussion on the individual permit review processes and timeframes involved in the environmental permitting process.

TPEAC attempted to reduce the time involved in the environmental permitting process. This was not necessarily accomplished for all permits because of statutory comment periods and review requirements prior to permit issuance. Also TPEAC only had jurisdiction over state and political subdivisions such as city, county, and special purpose districts. Congress does not require federal agencies to participate in TPEAC. However, there is an expectation that federal agencies will participate and they did participate on this project.

Conflicts often arose on the IDT during the permitting process, triggered by WSDOT’s mission to deliver the project on time and on budget versus the resource agencies mission of protecting the environment, especially minimizing impacts to endangered species. Feedback from team members indicated that streamlining put an emphasis on how to move the process faster, not how to get better information from the development agency so that resource agencies could do their job more efficiently.

Resource agencies believed that because the HCB project was a high visibility project it was receiving atypical agency commitment (i.e., HCB was receiving “special treatment”). USFW and NOAA committed to meeting deadlines even though information they requested from WSDOT was slow in coming (personal communication, USFW, NOAA). Some WSDOT personnel indicated being a “streamlining pilot project” put a spotlight on the project, which helped prioritize and focus efforts; whereas, others at WSDOT believed designation of this project as a pilot project hurt the process because of the spotlight on the work.

The city of Port Angeles was responsible for the issuance of the Shoreline Substantial Development Permit. City employees were not aware of the streamlining process and believed there was no undo pressure from WSDOT regarding the Shoreline Substantial Development Permit application. WSDOT’s Shoreline Substantial Development Permit application received

the same time frame review as any other applicant; however, the focus of the graving dock site was on the marine environment, while the City believed noise and traffic were issues that needed to be addressed (personal communication, City Planning Department).

3.3.1.3 Findings

The planned “one-stop permitting” was not achieved for the Port Angeles graving dock project, although the deadlines for permitting were nearly met (in May 2003) by expediting, when and where possible, the multiple individual permits required for the graving dock. Although a “one-stop permit” (via the Joint Aquatics Resource Permit Application [JARPA]) was used for the HCB permitting process, multiple regulatory agencies still had to request additional information for the JARPA to meet their own legal requirements.

3.3.1.4 Professional Suggestions

Professional Suggestion E: Future WSDOT and other state agencies’ permit streamlining projects should initiate the inter-agency permitting team process as soon as the development project commences. The process should be included in the development project’s timeline. The inter-agency permitting team process should include a focus on communication between members. Resource agencies will have more input at the start of the process. Upfront agency involvement will aid in reducing the time involved with permitting. The team should formalize a collaborative approach to the project permitting. Identify at the start of the project which permit applications, public review periods, and public meetings can be combined, if possible, to reduce duplication of effort.

Professional Suggestion F: A third-party facilitator should be used to keep the inter-disciplinary permit streamlining team on track, address areas of concern, and help to improve communication especially regarding permitting processes and agency needs. With a better understanding of each other’s needs and requirements, the time involved in permitting can be reduced by decreasing the number of revisions/addenda required to get a permit issued. This would also allow the team members to focus their time on other pertinent issues.

3.3.2 NEPA/SEPA Process

3.3.2.1 Criteria

NEPA establishes a national environmental policy and provides a framework for environmental planning and decision-making by federal agencies. NEPA directs federal agencies, when planning projects or issuing permits, to conduct environmental reviews that consider the potential impacts on the environment by their proposed actions. The NEPA process consists of a set of fundamental objectives that include interagency coordination and cooperation, and public participation in planning and project development decision-making.

One federal agency takes the lead role working cooperatively with other federal and state agencies during the entire project development process. The lead federal agency makes the final determination of the impacts to the environment based upon data collected within either an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). NEPA allows

the EIS or EA document to be prepared by the state agency as long as the federal agency provides guidance and independently evaluates the document. Various criteria dictate whether the less detailed EA or more detailed EIS are required and also whether public hearings and comments are required as part of the NEPA process. If an EA is prepared and it results in a Finding of No Significant Impact (FONSI) then an EIS is not necessary. Factors such as a “greenfield” and a large project size might have the lead federal agency proceed directly to an EIS. Factors such as previously disturbed grounds and small project sizes may move the lead federal agency to qualify the project as a “categorical exclusion” (CE) from the NEPA process. If qualifying as a “categorical exclusion” (CE), then no further Environmental Assessment (EA) or Environmental Impact Statement (EIS) would be necessary.

Washington’s SEPA directs state and local decision-makers to consider the environmental consequences of their actions. SEPA Rules (WAC197-11) establish uniform requirements for agencies to use in evaluating the possible adverse environmental impacts of a proposed action. The process also allows for the review of possible project alternatives or mitigation measures that will reduce the environmental impact of a project. The information provided during the SEPA process can help to refine a proposed action in order to minimize environmental impacts, or to deny a proposal when adverse environmental impacts are identified. The SEPA review process is outlined in DOE’s SEPA Handbook (publ. no. 98-114, [http://www.ecy.wa.gov/programs/ sea/sepa/handbk/hbframe.htm](http://www.ecy.wa.gov/programs/sea/sepa/handbk/hbframe.htm)). The lead agency for SEPA (WAC 197-11-926) is responsible for supervising the preparation of the SEPA environmental document and coordinating the process with cooperating agencies. The SEPA rules allow an agency to adopt the environmental analysis prepared under NEPA to satisfy requirements for a SEPA Determination of Non-Significance (DNS). Addenda to a SEPA document are possible for modifications to the overall project and its related or interdependent pieces, and these addenda can be simpler EA addendum checklists (versus a more detailed Environmental Assessment). Per the SEPA Handbook, an addendum contains minor new information that was not included in the original SEPA document of the overall project. An addendum may be issued for any SEPA document, and there is no set format. An addendum is appropriate when a project proposal has been modified, but the changes should not result in any new significant adverse impact. Addenda are not appropriate if the changes or new information indicates any new or increased significant adverse environmental impact. (Note: The use of relative terms such as adverse, significant, large, small, minor, etc, can lead to potential confusion and contention with the application of the SEPA handbook; for example, minor or small for one project, may be major or large for another project.) A SEPA “threshold determination” is the formal decision as to whether or not a project proposal is likely to cause significant adverse environmental impact that requires review in an Environmental Impact Statement (EIS). The threshold determination is the Determination of Significance (DS) or Determination of Non-Significance (DNS). This threshold determination is made by the lead agency after review of the EA or EA checklist.

3.3.2.2 Conditions and Background Information

The HCB project involves federal funding; therefore, the FHWA is the lead agency in the NEPA process. FHWA worked with WSDOT as a cooperating agency. The lead federal agency (FHWA) determined that an EA was necessary, and not the more detailed EIS. The procedures followed by WSDOT for the preparation of the HCB NEPA EA are outlined in WSDOT’s

Environmental Procedures Manual M31-11, Section 411.05 (1) (a)). The EA was signed on March 7, 2002, by the FHWA and WSDOT. The EA for the HCB (not the graving dock) was then issued for review and comment to agencies, local tribes and the public on March 18, 2002. The EA comment period was open from March 18 until April 22, 2002. WSDOT and FHWA indicated few comments were received on the EA document. The EA was then revised between April and May 2002.

Appendix J of the March 7, 2002, EA indicates that an EA public hearing was to be scheduled for April 2002. However, at the March 7, 2002, Project Development Team (PDT) meeting, WSDOT and FHWA made the decision to forego an EA hearing. An EA hearing was not required, and WSDOT typically did not hold them, so the PDT decided it would set a precedent if one was held (PDT minutes, March 7, 2002). Based on the EA, FHWA determined the project had no significant impact on the human environment and determined an EIS was not required. FHWA issued a Finding of No Significant Impact (FONSI) on May 29, 2002.

WSDOT adopted the NEPA EA to satisfy SEPA requirements and issued a Determination of Non-Significance on June 2, 2002. In accordance with SEPA procedures, a SEPA review period ran from June 2 through June 24, 2002. No comments were received and the SEPA EA was adopted on June 24, 2002.

After the Port Angeles site was selected for the graving dock facility in November 2002, a SEPA Environmental Checklist addendum was prepared for the graving dock site dated December 22, 2002. WSDOT concluded in the addendum that the additional work at the graving dock site would not change the SEPA threshold determination for the HCB project.

WSDOT prepared a NEPA reevaluation for the HCB project in March 2003. The re-evaluation was performed because of the change in the EA from the preferred “Contractor Option 3 - the use of existing graving dock facility” to the use of “Contractor Option 1 - the use of a graving dock provided by WSDOT.” WSDOT proposed in the re-evaluation to construct a graving dock in Port Angeles harbor. In the March 7, 2003, letter transmitting the NEPA re-evaluation to FHWA, WSDOT states “*We have concluded there have been no significant changes in the proposed action, and additional mitigation measures have been incorporated into the project, as necessary, to reach this conclusion.*”

Both a white paper prepared for the TPEAC committee by David Evans and Associates titled “*Common Permit Data Requirements: What are the Opportunities for Streamlining?*” (November 17, 2003) and a page on FHWA’s website (<http://environment.fhwa.dot.gov/strmlng/projectgraphs.htm>) reference that federally funded transportation projects fall into the following nationwide categories:

- ◆ 92 percent categorical exclusions or exemptions
- ◆ 7 percent - environmental assessments
- ◆ 1 percent - environmental impact statements

Evans concludes in his report that the majority of transportation projects do not require complicated permits and a smaller percentage of projects require complex environmental permits that consume staff resources. The table below illustrates that since 1998 the distribution of the types of permits required for transportation projects has not varied significantly (Table 1). Given the available data, our review could not determine if the FHWA has a tendency to issue Categorical Exclusions (CE) rather than EAs or EISs in order to meet schedules.

Table 1. Data Table for FHWA Projects by Class of Action

	1998	1999	2000	2001	2002	2003	2004
EIS (%)	2.4	3	2.8	2.9	3	3.4	3.5
EA (%)	6.1	6.8	6.3	6.5	5.6	5.4	4.6
CE (%)	91.5	90.1	90.9	90.6	91.4	91.2	92

3.3.2.3 Findings

The Interdisciplinary Team (IDT) was formed well after the HCB project started and they had to expedite learning about the project as well as performing their prescribed duties.

WSDOT generally followed the appropriate rules for the NEPA and SEPA processes.

3.3.2.4 Professional Suggestions

Professional Suggestion E to initiate the permit streamlining process as early as possible and Professional Suggestion F, to utilize a third-party facilitator (see Subsection 3.3.1.4 above) are both important to this topic.

3.3.3 Structure and Leadership of the Hood Canal Bridge (HCB) Interdisciplinary Team (IDT)

3.3.3.1 Criteria

A team charter was prepared by the HCB IDT during March and April 2002. The charter was reviewed and adopted in May 2002. The purpose of the HCB IDT identified in the team charter was “Achieve all project permits by November 2002 using the flexibilities and innovations envisioned within ESB 6188 and the 7-Step Pilot Permitting Process developed by the One-Stop Permitting Subcommittee.” (FVD1559)

The charter included the team vision, mission, meeting guidelines, communication plan, change management plan and schedule. The charter identified team leadership and membership as follows:

- ◆ Process Owner – (WSDOT employee),
- ◆ Team Leader – (WSDOT employee),
- ◆ Team Members – (representatives of state and federal resource agencies, affected counties, and WSDOT),
- ◆ Facilitator (WSDOT employee), and
- ◆ Recorder (WSDOT employee).

The intent of streamlining was to prepare one packet of information for all regulating agencies. The permitting schedule changed to May 2003 after the Port Angeles graving dock site was selected.

As stated above in Subsection 3.1.2.2., the difference between those who are only project managers and those who are also project leaders is revealed in their attention to all the needs of the project team: scope definition, budget, schedules, resources, processes, standards, communication, commitment, and participation. Too often, project managers spend the majority of their time on budgets, schedule reporting (not creating schedules), and human resources. If there is a change of scope or direction, or a problem, a manager may not address this challenge until it occurs. A project leader however, is able to foresee changes and problems and positions the team to minimize disruption and to maximize the opportunity to make clear and rational decisions. Successful project leaders also know that project difficulties often occur because of relationship issues and spend significant amounts of time on building commitment, cooperation, and communication both within and beyond the project team. Several texts have been written that confirm these conclusions: *Learning to Lead: A Workbook on Becoming a Leader*, by W. Bennis and J. Goldsmith, Basic Books, Perseus Books Group, Cambridge, Mass. 2003; and, *The Lead Dog Has the Best View*, by G. Culp and A. Smith, The American Society of Civil Engineers Press, Reston, Va. 2005.

3.3.3.2 Conditions and Background Information

To gain an overall perspective of the streamlining effort, the leadership and team functioning of the IDT was examined. Lack of leadership in the IDT was a recurrent theme throughout our discussions with many agency personnel.

Team members opined that the IDT provided a setting that allowed the environmental permitting stakeholders the ability to be “on the same page” in regard to the project scope, issues, and progress. Team members indicated that the IDT had an excellent WSDOT facilitator (personal communication, DOE; IDT Results Report, FVD1548). However, feedback received during

interviews and from the IDT Results Report did identify key issues that interfered with team progress:

- ◆ Time was wasted. Many team members believed that much time and effort was wasted in the IDT process. Too much time was spent on administrative non-relevant topics. For example, it took from March through May just to establish the team charter and set the team ground rules (personal communication, WSDOT, WDFW, FHWA). Some IDT members were viewed as using the process to leverage their personal agendas (personal communication, WSDOT). The process resulted in agencies spending time and effort on issues not within their regulatory authority and allowed disruptive conflict to exist within the IDT (personal communication, WSDOT, IDT Results Report, FVD1548). Some agency representatives in the IDT were not decision makers, so it became a longer process to go back to their respective decision makers at each agency (personal communication, WSDOT, DOE; IDT Results Report, FVD1548).
- ◆ Meetings were uncontrolled. The project proponent did not keep control of the meetings, giving a few individual members the chance to dominate, control, and influence other agencies (FHWA, WSDOT). IDT dynamics, such as having all the regulatory agencies in the meetings together, allowed them to build on each others' issues, resulting in small items becoming big issues (personal communication, WSDOT, FHWA). IDT meetings needed better organization and partitioning of topics, with more side meetings. TPEAC had a forum available to elevate conflicts, but IDT members believed if an issue was elevated to a higher level, then they were a failure, so this was resisted (personal communication, WSDOT, DOE). Overall, the IDT struggled with how to work together and how to work through issues.
- ◆ Effort integration. The streamlining process was not adequately planned for it to be a constructive part of the project development process (personal communication, WSDOT). The IDT did not appear to operate as part of the project delivery team (PDT). The PDT focused on cost and schedule and not the environmental permitting piece of the project (personal communication, WSDOT). The project development process was haphazard, with IDT topics being determined meeting by meeting.

Since regulating agencies (driven by the laws that guide them) all have different requirements and perspectives, one application does not and will not work (IDT Results Report, FVD1548).

3.3.3.3 Findings

According to IDT members, decision-making authority and team leadership were both lacking on the IDT, which resulted in time delays. The established dispute resolution process was not utilized, apparently causing time delays. IDT members were concerned with how team performance would be viewed by supervisors. The IDT did not integrate effectively as part of the Project Delivery Team.

3.3.3.4 Recommendations

Recommendation No. 9: WSDOT should promote stronger inter-agency permitting team leadership by finding someone who can not only provide a balance between the developer and regulator, but a focus for the overall team. This individual, to be effective, may need to be outside (or external to) the agencies represented, yet have some authority and a general working knowledge of the agencies. This accomplishment is easier said than done, because from our professional experience elsewhere in the United States, agencies typically are not receptive to external authority. Ideally, this individual would have working experience from both sides of the developer-regulator agency line. Another suggestion may be a governor- or legislative-appointed individual who has the approval or respect of the different agencies; or, the IDT agencies vote for nominated leaders, with the developing agency or agencies having an equal number of votes as the regulatory/resource agencies. Leadership needs to address the handling of disputes more rapidly by creating side or “off-line” meetings to address individual issues and take advantage of established procedures (as originally proposed by the IDT charter). Finding a fair accord between the development and resource agencies is necessary. This leader must understand the need for development as part of economic growth; and also the need for the conservation practices required for, and economic uses of, natural resources. Characteristics of a good facilitator include being organized, focused, results-oriented, and working toward group goals, by effectively handling conflict and respecting all team members.

3.3.4 The TPEAC Interdisciplinary Team’s (IDT) Working Knowledge of All Disciplines Needed to Facilitate the Hood Canal Bridge (HCB) Project

3.3.4.1 Criteria—IDT Expertise

TPEAC (Permit Efficiency and Accountability (Chapter 47.06C RCW)) does not establish criteria for the types of disciplines required on the IDT. Foth & Van Dyke would assume that the team would already have, or seek and add, the required technical, administrative, and leadership specialties for each specific development project. That might mean that the core IDT team has several “revolving” members depending upon the project type. For example, disciplines one would expect on a team for a NEPA/SEPA process and/or an environmental permitting project would be those with expertise in project management, air quality, endangered species, wetlands, biology, geology, socio-economics, planning, history, archaeology, etc. 40 CFR 1502.6 indicates *EISs shall be prepared using an inter-disciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts (section 102(2)(A) of the Act). The disciplines of the preparers shall be appropriate to the scope and issues identified in the scoping process (Sec. 1501.7).*

3.3.4.2 Conditions—IDT Expertise

IDT and external interviews indicated that some disciplines were omitted from the team. As a result of these interviews, it is apparent that the IDT needed to achieve a balance of resources, needs, and disciplines. While archaeology was always on the table, the (IDT) focus was environmental, with a strong emphasis on natural resources, and in particular, endangered and threatened marine species. Additional expertise was needed on the IDT in areas of archaeology and geology (personal communication, WDFW). However, even if natural resources would have

been less focused and/or involved, given the composition of the IDT team for the HCB project, archaeology may still have been underrepresented.

The DOE prepared a report dated December 3, 2003, on the IDT effort for two TPEAC pilot projects—one being the HCB project. The report identified the complete omission of cultural resources when scoping the environmental and project needs (IDT Results Report, FVD1548). This report further found that all participants on the IDT mentioned the lack of Native American (tribal) involvement. Streamlining would have benefited from tribal involvement and, although they were invited, it was not known by IDT members why they did not attend (personal communication, NOAA, WSDOT). We found that the tribes were invited via form letters and e-mails. The Interagency Project Team (IPT) Guidance document (November 2003) relies on tribal involvement to cover cultural resources (FVD1546).

The local permitting agency (City Planning Department) believed the focus of permitting was the marine environment, while noise and traffic were issues that should have been addressed in greater depth (personal communication, city of Port Angeles). As a result, the City believes that socio-economic issues should have been represented in the permitting process.

Backup plans did not exist for cultural resource representation if a tribal member did not attend relevant IDT meetings. Tribal representation on an IDT, however, is not the same as having a working scientific knowledge of archaeology and geology on the team, unless the tribal representative is trained in one of these disciplines.

3.3.4.3 Findings—IDT Expertise

Not all pertinent areas of expertise were represented on the IDT for the HCB project. Archaeology, geology, and socio-economics disciplines appear to have been missing. Team members with general permitting knowledge do not qualify as experts in these “missing” disciplines.

3.3.4.4 Recommendations and Professional Suggestions—IDT Expertise

Recommendation No. 10: WSDOT and other state agencies should scope early in the inter-agency permitting team set-up process for the expertise needed and secure these team members for the inter-agency permitting team via an active, ongoing and collaborative form of communication. With the prevalence of cultural and archaeological resources, the relatively high numbers of federally recognized tribes, and the high potential for deeply-buried and well preserved archaeology sites in Washington, WSDOT should scope early in the planning process the potential need for having an archaeologist (and possibly geomorphologist/ Quaternary geologist) on any project where an IDT is assembled. The SHPO or its designee should be on the team. Socio-economic expertise should also be considered for the team in those areas that may have impacts to the economy and human behaviors; and would better represent the requirements found in NEPA and SEPA. WSDOT should allow for field reviews/site visits by the team members or potential team members early in the process, which may help individual team members (and their other agency technical experts) identify issues early on in the process.

Professional Suggestion G: “Proper Tool for the Proper Job.” Develop a culture inside of WSDOT that recognizes that tasks like the identification and conservation of, for example, fisheries, wetlands, shorelines, historic buildings, and archaeology sites are steps in the planning, design, and construction process. Engineers wish to work on engineering projects, which is all the more reason to have these experts working in their own field of expertise. Some DOTs across this country have developed such an understanding and have assigned their own experts (or hired outside impartial consultants) in areas such as archaeology, fisheries, wetlands, etc., to manage that part of their construction program (e.g., Vermont Transportation Authority). The end result is that these DOTs experience trust by the regulatory agencies. WSDOT needs to adopt the “right tool for the right job” approach to developing project teams, and they appear to have started heading in this direction. Many other DOTs also have difficulties adopting this suggestion. Common sense tells us that the public is not best served by having an archaeologist design a bridge anymore than a civil engineer deciding where and how to test for archaeology and how much that effort should take in time and expense. Likewise, the public is not served well by having a wetland biologist plan a highway corridor anymore than a highway planner writing a contractual scope of work for hydric soil delineations. Each profession has important elements of their job that are best recognized, interpreted, and implemented by those that are actually trained in that area, and that have a vested interest in updating their own professional (i.e., state-of-the-art) expertise.

3.3.5 Cost, Focus and Efficiency of the TPEAC Hood Canal Bridge (HCB) Interdisciplinary Team (IDT)

3.3.5.1 Criteria

When first formed, the HCB IDT was to have all the permits in place for the HCB by November 2002 via a “one-stop permitting” process. However, the completion date changed with the addition of the graving dock site. This project review will be difficult to measure against the goals identified because they are for a “program” compared to the single portion of a project that the Foth & Van Dyke team reviewed. Our team could, however, review for the time deadline

goal(s) and the “one-stop permitting.” The only readily apparent permitting deadline that Foth & Van Dyke identified from thousands of available project review documents was from a draft IDT schedule dated December 9, 2002 (FVD1658). This draft document had a final permitting date of *May 2003*, but “one-stop permitting” was already known by the IDT in December 2002 to be unachievable by the time the May 2003 date was set. Also, WSDOT as the lead permitting agency for the HCB project, was responsible for the NEPA/SEPA and Section 106 requirements

3.3.5.2 Conditions

The IDT began meeting in March 2002 and met approximately 23 times. The first few meetings included development of a team charter that identified TPEAC goals. All those involved had differing opinions on how well the process worked for the project, and those comments, coupled with a review of the document database, revealed that there are three main categories into which the observations and comments can be placed. The first category of concern and comment relates to the cost of the IDT effort. The second category involves the focus of the IDT, during both meetings and “off-line” efforts. The third category relates to the perceived efficiency of the process.

During and subsequent to the IDT process for the HCB project, the DOE, with assistance from DNR and WDFW, prepared a questionnaire for IDT participants and compiled the responses and observations (IDT Results Report, December 3, 2003, FVD1548). This report contains excellent information and should be reviewed for additional observations beyond those discussed below. The two primary sources of the following condition statements were the IDT Results Report and interviews with IDT participants.

Cost

Cost of attending and participating in the IDT, relating to both time and effort, was a major topic of discussion during the interview process. While the IDT Guidance document (FVD1546) recognizes a cost in using the IDT process and identifies WSDOT funding to other IDT agencies as a potential project cost, participants continually mentioned cost and time commitment expectations as being excessive without additional funding (personal communications, WSDOT, DOE, WDFW, NOAA, USFW).

WDFW had the opinion that the IDT needed more formal funding, as the level of effort, commitment, and number of meetings was a lot of cost to absorb. The belief was that future IDT efforts must be funded in order for them to work.

Focus

NOAA and WDFW reported that there were no outside influences that affected their efforts, but rather the schedule and the lag time in FHWA and WSDOT responses affected their performance and focus.

NOAA and WDFW also opined that the IDT meetings were at times unfruitful, going too deep into irrelevant details, and that the focus of some meetings did not need to involve all the

participants, thus wasting their time and illustrating the need for better organization and partitioning of topics well in advance of the formal agenda.

Focus of the IDT group was also affected by the fact that the graving dock location was not selected at the time the meetings started, causing that topic to be the focus of the entire group (personal communication, WSDOT). The focus on the graving dock in part caused the IDT to inadequately address public involvement and input (IDT Results Report, FVD1548).

The IDT Results Report listed several negative aspects of the IDT process that affected the group focus, including that it was not a one-stop process, there were too many unproductive meetings, the timelines and schedules were too compressed, some members did not have any decision-making authority, there was too much regulatory inter-agency support, and that the federal agency involvement/attendance could not be mandated.

Efficiency

Whereas some of the above points also relate to the efficiency of the IDT effort, there were additional and supporting comments questioning whether the streamlining process worked at all. Several WSDOT staff believed there was no advantage to the streamlining process and that permitting timelines were not reduced. WDFW reported that streamlining did not reduce the time or affect of their permitting, and NOAA-Fisheries reported streamlining reduced their review time frame by about a month but increased the time for data collection and report preparation to over 1.5 years compared to 1.0 years following the previous or routine process.

Several inefficiencies were noted in the operation of the IDT. WSDOT staff reported that the IDT had too many young, inexperienced people who were not decision makers—highlighting a real need for higher level people (i.e., with authority) to attend the meetings. WSDOT also believed personalities on the IDT made a big difference in interaction and progress, intimidating some participants, so others could champion their own agenda to the detriment of progress on the project.

The IDT Results Report included an observation that the process was inefficient due to each agency wanting their own forms used, that fisheries issues should have been identified and resolved prior to entering the permitting endeavor, and that the most significant inefficiencies resulted from WSDOT failing to finalize a graving dock location.

The IDT Results Report (FVD1548) did identify positive aspects of efficiencies which resulted from the meetings, including improving collaboration and communication between agencies, time savings, efficient identification of issues, education of regulators, and providing an avenue for regulatory input prior to design completion.

Since the HCB IDT effort was a pilot or initial effort into the process, it was likely to have problems, concerns, and room for improvement.

3.3.5.3 Findings

The IDT was greatly influenced by the replacement pontoon “float-in” date. Subsection 3.1.3.1 above found that the alternative to a replacement bridge was a higher maintenance cost, and it is this higher cost that drove the replacement need as soon as possible. The fixed date for replacing the bridge drove the permitting process and influenced the permit streamlining team dynamics, in part because of the team’s “one-stop permitting goal,” and in part because of the “pilot project (statewide) recognition.” The graving dock alternatives and their evaluations were, therefore, not well documented (at the time Port Angeles was selected) because of the restrictive time constraints.

Being a “pilot project” caused inefficiencies in the team because ground rules and a process had yet to be established, which took valuable time at the start of the IDT. The goal of “one-stop” permitting was unrealistic in such a short time frame, and with relatively little collaborative permitting structure between agencies already in place at the start of the IDT (March 2002). The complexity of permitting in the state of Washington, which involves a variety of local, state, tribal, and federal agencies, regulations, and individual agency requirements or needs is not readily conducive to one-stop permitting. One “packet of information” for the permitting agencies was never achieved.

WSDOT did not challenge the IDT and the graving dock site selection process in part because of the time constraints associated with their chosen approach to addressing the deteriorated bridge structure. Any extended dispute resolution would have caused delays that WSDOT believed they could not accommodate. The issues surrounding the CTC and DSY sites caused an inordinate amount of time and energy to be focused on finding a graving dock site, instead of permitting and other IDT goals. This situation adversely affected both the focus and efficiency of the IDT effort.

The IDT was limited by the composition of the team with agency representatives that did not have the ability to make decisions on behalf of their agencies. This caused inefficiencies in having to go back to the agencies’ respective decision makers.

One benefit of the IDT process was that both the development and regulatory agencies were educated about each other’s programs, specifically, about operations and planning needs of WSDOT, and scientific needs of the regulatory agencies. This knowledge of each other should in itself make for a more efficient permitting process in the future despite the other inefficiencies experienced by the IDT (see the following Subsection 3.3.6 for further discussion on agency interaction).

3.3.5.4 Professional Suggestions

Professional Suggestion H: WSDOT and other state agencies should start the inter-agency permitting effort as early as possible in a project timeline, and focus on communication among members (see Subsection 3.3.1.4) to help address many of the findings identified above.

In addition we suggest that the future inter-agency permitting teams “brainstorm” self-improvements for a more time- and cost-effective team and project management. Time and expenses, for example, may be reduced by:

- ◆ Using videoconferencing and moving meeting locations around.
- ◆ Following their own guidance document and use “off-line” meetings when topics do not involve the entire IDT.
- ◆ Using website technology such as a Sharepoint© website to keep IDT members up to date on permit application documents and to share resource information in a timely manner. This would eliminate the need to wait for information until the IDT meeting.
- ◆ Create a database to track permitting timeframes and keep it on the Sharepoint© website.

3.3.6 State, Local and Federal Agency Interaction

3.3.6.1 Criteria

The Resolution of the Transportation Permit Efficiency and Accountability Committee (TPEAC) contains steps for “one stop permitting” (version May 1, 2002, FVD1553 and FVD1555). These steps were defined so that collaborative and timely action on the part of all agency staff can occur in order to address issues associated with the environmental review and permitting to successfully implement “one stop permitting.” “Step 1 - Project Definition/Interdisciplinary Teams” includes the development of a team charter. A team charter was developed by the HCB IDT to address such items as team vision, mission, meeting guidelines, permitting and meeting schedules, communication protocol, and other coordination issues.

As presented earlier, development and resource agencies represented on the HCB IDT included WSDOT, Washington Department of Ecology (DOE), Washington Department of Fish and Wildlife (WDFW), Washington Department of Natural Resources (DNR), U.S. Fish and Wildlife Service (USFWS), Kitsap County, Jefferson County, National Oceanic Atmospheric Administration (NOAA) – National Marine Fisheries Services (NMFS), U.S. Army Corps of Engineers (USACE), U.S. Coast Guard, and the Federal Highway Administration (FHWA). Jefferson County was not an active participant on the IDT due to resource constraints.

The IDT began meeting in March 2002. The first few meetings were devoted to the development of a team charter and bringing the team up to speed on the project. The permitting goal for the team was to have all permits for the HCB project in place by November 2002. The regulatory agencies on the IDT were involved in all environmental decisions that pertained to siting, project permitting, and environmental mitigation strategies.

No other criteria for proper interaction were identified by the review team at Foth & Van Dyke.

3.3.6.2 Conditions

The Hood Canal Bridge and graving dock project involved a complex permitting process on a very short timeline.

Resource agencies indicated that the IDT was very good in scoping project needs. The team created a forum where all agencies were given the same project information. The “one-stop” permitting intent was for WSDOT to prepare one permit application packet, but agencies said they could not put all permitting requirements for the project into a single permit, so the project reverted to the typical process. Therefore, “one-stop” permitting did not occur (personal communication, WSDOT). The IDT did promote discussion between the development and resource agencies, and state and federal interaction was enhanced.

Resource agencies felt that the project schedule was unreasonable given constraints of the regulatory process and WSDOT could not get decisions fast enough (IDT Results Report, FVD1548, personal communication). Most of the resource agencies acted on incomplete information, to the extent they were able to identify deficiencies and request further information from WSDOT (IDT Results Report, FVD1548). The resource agencies wanted more information in the permit applications. They wanted to understand all aspects of the issues, stating that if they receive more information, then the permit has fewer conditions attached (personal communication, DOE). Although WSDOT had difficulty in providing requested information to the resource agencies in a timely fashion, those agencies were committed to act within the streamlining timeline, and did so. Below are examples of comments received by the Foth & Van Dyke review team:

- ◆ WSDOT opined that their response time took longer because multiple people needed to gather information (personal communication, WSDOT). For the most part, resource agency concerns seemed legitimate (personal communication, WSDOT).
- ◆ WSDOT had a hard time meeting schedules, but they worked hard and did a good job (personal communication, DOE, WSDOT).
- ◆ The IDT process was educational from all aspects, with resource agencies learning many of the concerns, requirements, and jurisdictions of other agencies (IDT Results Report, FVD1548).
- ◆ Heated discussions between WDFW and WSDOT turned into a collaborative effort upon selection of Port Angeles as the graving dock site (personal communication, WSDOT, WDFW, USFW). Each agency’s concerns should have been identified and discussed prior to creating the project schedule and timeline (IDT Results Report, FVD1548).
- ◆ Streamlining did not occur, but there was a positive outcome with little delay (IDT Results Report, FVD1548).
- ◆ Beyond the IDT meetings, communication between federal, state and local agencies, and tribes needed improvement. WSDOT would have had an easier time negotiating one-on-

one with regulatory agencies rather than attempting to do so in a room full of regulators (personal communication, FHWA, WSDOT). Most IDT participants agreed additional electronic/technological support, such as more and better electronic communication, would have been very beneficial (IDT Results Report, FVD1548).

- ◆ The USACE had limited participation in the IDT. Efforts were made to get the USACE to IDT meetings, but they rarely attended (personal communication FHWA, DOE).
- ◆ There was overall consensus that some key players were not present at critical times, as noted by the absence of tribes particularly with discussions related to the graving dock.

3.3.6.3 Findings

The HCB project was a pilot effort for environmental streamlining, and the development of the IDT's functionality. No previous efforts in Washington exist upon which to base a comparison. Considering the time and effort involved in the IDT, better communication, faster conflict resolution, and speedier permitting relative to the past were all reasonable expectations. Based on Foth & Van Dyke's review of the above, the IDT apparently did not achieve the expectations of all agencies that were involved, although significant positive aspects of the process were identified such as:

- ◆ The “streamlining” potentially reduced data collection for natural resource issues, allowing some of the same data to be used by multiple agencies. (Note: the sharing of “data” is different from the challenges of sharing of forms and format for the “one-stop permitting” that we discussed above.)
- ◆ The IDT process was educational from all aspects, with regulatory agencies achieving a mutual understanding of each others concerns, requirements, and jurisdictions, as well as learning some of the design process and basis from which WSDOT formulates the project components (IDT Results Report, FVD1548; personal communications, regulatory agencies). This may have been the first time that some of the IDT regulatory members actually understood how the development agencies worked and, more specifically, how their projects work.
- ◆ The development and resource agency personnel believed that a good product resulted from the cooperative effort on this project, and they had many suggestions to improve the process. Resource agencies believed the IDT was of significant benefit by creating a uniform basis for project understanding.
- ◆ The goals of various members of the IDT were different, and this led to communications and process breakdowns. Compromise of a reasonable extent in order to achieve issue resolution did not appear to occur at the IDT meetings for a variety of reasons. For example, numerous meetings were spent discussing where the pontoons and anchors were to be built. WSDOT would review potential graving dock sites; bring the sites forward to the IDT for consideration and WDFW would turn them down for various reasons (e.g., shading, pilings, impacts to fish; personal communication, WSDOT). Other agencies

were influenced by WDFW (i.e., DOE, NOAA, USFW). WSDOT believed they were receiving a lot of resistance from resource agencies. When the suggestion was made to take the issue(s) to the dispute resolution process, IDT members resisted, so the TPEAC process was lengthier than planned (personal communication, WSDOT, IDT minutes).

On the other side, the IDT needed stronger leadership (as discussed above in Subsection 3.3.3) to further promote effective communications.

A lesson learned from this project is that when projects operate under timeline, budget and schedule constraints, regulators and developers alike communicate from a stressed, defensive position rather than from a gained consensus position. The project record does demonstrate that although there were sometimes heated and contentious discussions, the compressed timeline may have helped develop a consensus within the IDT to go to Port Angeles with the graving dock, even though a thorough evaluation of the site had not yet been completed.

3.3.6.4 Recommendations and Professional Suggestions

Professional Suggestion E: See Subsection 3.3.1.4, which addresses the need to open communication early within the inter-agency permitting team.

Recommendation No. 9: See Subsection 3.3.3.4, which also addresses many of the findings identified above regarding the need for stronger leadership.

3.4 Archaeological Assessment

Subsection 3.4 addresses JLARC's "Objective Number 3—Archaeological Assessment"; and also in combination with the previous Subsection 3.3, "Objective Number 4—Interactions of Interested Parties." Topics of interest are in the following subsections:

- ◆ 3.4.1 - Contracts and Project Management of Archaeological Investigations
- ◆ 3.4.2 - Archaeological Request for Proposal and Scope of Work for Initial Site Assessment in November 2002
- ◆ 3.4.3 - Initial Archaeological Assessment (November 2002)
- ◆ 3.4.4 - WSDOT's Consultation with SHPO and FHWA
- ◆ 3.4.5 - WSDOT's Consultation with the Lower Elwha Klallam Tribe
- ◆ 3.4.6 - Archaeological Geology, Geomorphology and Geoarchaeology
- ◆ 3.4.7 - SHPO Oversight of the Archaeological Investigations at Tse-whit-zen (45CA523)
- ◆ 3.4.8 - Archaeological Monitoring (August 19 – September 17) and Second Archaeological Assessment (September 18-October 3, 2003)

- ◆ 3.4.9 - Data Recovery (April 2004 – December 2004)

Section 106 of the National Historic Preservation Act (NHPA; 16 U.S.C. § 470, as amended) of 1966, requires that federal agencies take into account the effects of their undertakings on historic properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP) and to provide the Advisory Council on Historic Preservation (ACHP) opportunity to comment on the undertaking (<http://www.achp.gov>). An “undertaking” is considered to be a project that is federally funded; carried out on behalf of a federal agency; requires a federal permit, license or approval; and is subject to state or local regulation administered pursuant to approval by a federal agency. Historic properties consist of prehistoric or historic sites, structures, buildings, objects, or features that are made or modified in the course of human activities. Historic properties are eligible to be nominated to the NRHP if the properties’ quality of significance in American history, architecture, archeology, engineering, and culture is present in some form of a district, site, building, structure, or object and the properties possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- ◆ *Criterion A.* Are associated with events that have made a significant contribution to the broad patterns of our history; or
- ◆ *Criterion B.* Are associated with the lives of significant persons in our past; or
- ◆ *Criterion C.* Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- ◆ *Criterion D.* Have yielded or may be likely to yield, information important in history or prehistory.

Typically, these properties will have achieved their historical “significance” sometime before the last 50 years.

3.4.1 Contracts and Project Management of Archaeological Investigations

WSDOT’s contracting procedures reviewed in this document will be addressed in three subsections. Each subsection will address a different aspect of contracting pertinent to the archaeological investigations undertaken at the Port Angeles graving dock. The three subsections include a review of the development of WSDOT’s On-Call Archaeological Consultant List (Subsection 3.4.1.1), the use of sole source contracts (Subsection 3.4.1.2), and oversight and management of contracts (Subsection 3.4.1.3). Please note that “contracts” are also known as “agreements” by parts of WSDOT.

3.4.1.1 Development of WSDOT's On-Call Archaeological Consultant List

3.4.1.1.1 *Criteria*

In an effort to streamline contracting practices and project delivery, on-call consultants are used by many DOTs. An on-call consultant may be procured from the private sector or sister agencies such as a university. The request for on-call consultants is a competitive process that is open to public and private sectors. Several advantages of using an on-call consultant have been identified by various state DOTs. The use of outside on-call consultants results in faster project initiation and reduced administrative paperwork because the funds are dedicated to the consultant prior to the need for a particular service. Additionally, outside consultants can supplement the in-house staff by providing services when the in-house staff is unavailable or when a particular expertise is not available within the agency. However, the practice of outsourcing has disadvantages as well. The quality of communication between outsourced archaeological consultants and transportation design engineers may be variable. Archaeological project delivery may also be variable. Many DOTs found that hiring in-house professionally qualified (according to the Secretary of Interior's Standards) archaeologists in district offices significantly improved management and oversight of the contracts, technical aspects of the archaeological investigations, and project delivery.

Several sources are available to state DOTs for the development and implementation of an on-call consultant list including the FHWA website (<http://environment.fhwa.dot.gov/strmlng/es6stateprac.asp>), individual DOT procedures manuals, and the best practices used by other state agencies. In Washington, guidance for developing consultant procedures is available from the Office of Financial Management (OFM) (<http://www.ofm.wa.gov/contracts/psc/Getting%20Started.pdf>), which provides information and policy support to state agencies, the Governor and the Legislature. In 2002, when the Port Angeles property was being considered for the construction of the graving dock, the OFM's *Guide to Personal Service Contracting Rules and Best Practices (2001)* was available to the WSDOT staff. Additionally, WSDOT has an internal consultant services procedures manual. For WSDOT's future reference it is important to note that the Office of Financial Management updated the *Guide to Personal Service Contracting (updated July 2004)*. This updated guide "identifies both the rules and best practices related to personal service contracting." Washington's statute, RCW 39.29.110 (Senate Bill 5269, 2002 Legislature), "requires adherence to these guidelines, effective January 1, 2003" (*Guide to Personal Service Contracting 2004: 1-1*). Deviations from this Guide are required to be well documented. Pertinent chapters of both the 2001 and updated 2004 contract guidelines published by the OFM were reviewed by Foth & Van Dyke and their contents were found to have considerable overlap.

3.4.1.1.2 *Conditions*

In an effort to streamline the project delivery process, a request was made from WSDOT's Director of Environmental Services to develop an On-Call Services Competitive Selection Process for cultural resources. The general procedures that were followed for this internal request are described in WSDOT's Consultant Services Procedures Manual (<http://www.wsdot.wa.gov/consulting/ConsultantServicesProceduresManual.pdf>). Prior to announcing the Request for Proposal (RFP), the administering office decided that two on-call

consultants would be selected and each contract would have a dollar ceiling of \$350,000 over a three-year period. This dollar amount could be used for multiple tasks, which are components of the On-Call Agreement. A scope and budget for each task order is negotiated. WSDOT's initial solicitation for on-call consultants occurred in March 2001, prior to the creation of TPEAC in May 2001. The solicitation was posted on WSDOT's website and was also advertised in the Seattle Daily Journal of Commerce. The Environmental Services Office administered the on-call process and the Consultant Services Office (CSO) procured agreements for Architectural and Engineering (A&E) Services and Personal Services on a statewide basis. Cultural Resource Management (archaeology, historical inventory and impact assessments) is one type of On-Call Personal Service.

WSDOT's On-Call Consultants RFP outlined the scope of work, the evaluation and selection criteria, and submittal criteria. The scope of work stated that the cultural resources consultant was expected to provide all services related to cultural resource management including "archaeological and historic resources research and reconnaissance; site testing; evaluation of National Register eligibility and effect per 36 CFR, Part 800; construction monitoring; data recovery; artifact cataloging; report preparation; documentation; including photography to HABS/HAER (Historic American Building Survey [HABS]/Historic American Engineering Records [HAER]) standards, of historic properties affected by current and pending state and federal aid transportation projects." In order to achieve the "one-stop" approach for on-call cultural resource consultants, the prime consultant was authorized to use sub-consultants to perform contracted tasks, subject to WSDOT approval.

The evaluation and selection criteria for the On-Call Consultants are qualification-based as defined by Chapters 39.29 and 39.80 RCW and by the Brooks Act 40 U.S.C. § 541 and therefore cannot be a low-bid selection. The criteria used to evaluate and rank consultants on a scale from low to high (0 to 20 points) include:

- ◆ Qualifications and expertise of firms on the team,
- ◆ Qualifications of proposed project managers,
- ◆ Qualifications of key members (consultants and sub-consultants),
- ◆ Firm's project management system (prime consultant only),
- ◆ References/past performances (prime consultant only), and
- ◆ Cost of overhead, direct labor, and profit

In accordance with WSDOT's guidelines, the reviewers were given approximately one to three weeks to evaluate the applications using a standardized evaluation form. The scores for all firms were compared and the two top ranking firms were awarded an on-call contract. The consultants list was then made available for review by WSDOT project managers to determine if the on-call

consultant could be used for their project given the expertise of the on-call team and the project cost.

When an on-call consultant is utilized for a WSDOT project, the project manager has the responsibility of day-to-day oversight and contact with the consultant to ensure the delivery of the project according to the task order. Additionally the project manager reviews the invoices submitted by the consultant. When an on-call consultant completes a project, evaluations at the task level are completed by project managers and are submitted to the agreement manager. The agreement manager is the person who manages the On-Call agreement by assigning Task Order Document Numbers, Task Order Document Amendment Numbers, and compiling the Task Order Document and Amendments, etc. The agreement manager holds the responsibility of completing a performance rating for the on-call master agreement. A cumulative score is calculated for the master agreement from the task evaluations. Both the consultant and the Consultant Services Office (CSO) receive a copy of the task evaluation to enter into an internal tracking system or database known as "Biztrak." In addition to tracking and monitoring consultants from the pre-bidding process through contract awards and final payments, Biztrak facilitates performance scoring the next time a consultant is considered for a project. Performance ratings are requested from outside references typically when performance data is unavailable in the Biztrak system. The outside references are asked to complete a standardized evaluation form provided by WSDOT. These references are provided by the consultant. Performance reviews for WSHS work at the Port Angeles graving dock are currently not available because the contract is not yet closed.

Four firms responded to the March 2001 announcement, including Hart Crowser, Eastern Washington University, Western Shore Heritage Services, Inc., and Archaeological Investigations Northwest, Inc. The applications were sent to the Environmental Services Offices and three individuals were selected as reviewers. At least one of the reviewers was a WSDOT employee and the other two reviewers were thought to be WSDOT employees. Unfortunately, the CSO was unable to read one reviewer's name and the third reviewer signed only a first name. The reviewer who was a WSDOT employee works in the Cultural Resources Program, but is not an archaeologist. The evaluation results ranked Hart Crowser and Eastern Washington University as the highest and they were awarded on-call contracts. After the selected firms were posted on WSDOT's website, Western Shore Heritage Services, Inc. (WSHS) requested a debriefing. During this debriefing, the Consultant Services Office realized that an error had been made in the review process. The CSO had inadvertently failed to call WSHS's outside references for performance ratings. When the scores from the outside references were included for WSHS, the firm's composite score had tied with the top ranking firm. Rather than remove Hart Crowser, the firm with the second highest ranking, WSHS was added as a third on-call consultant. WSHS was selected from the on-call consultants to complete the Phase I archaeological assessment of the Port Angeles graving dock in October 2002 after negotiating a scope of work and budget. The scope of work and archaeological assessment will be discussed in Subsections 3.4.2 and 3.4.3.

3.4.1.1.3 Findings

Our findings regarding the development of the on-call consultants list are based on our review of interviews with personnel from the Consultant Services Office, a review of the WSDOT's Consultant Services Procedures Manual, Washington's Office of Financial Management *Guide to Personal Service Contracting* (<http://www.ofm.wa.gov/contracts/psc/Getting%20Started.pdf>) (2001 and 2004), the on-call list announcement, the four consultants' applications from 2001, and several personal services contracts issued by WSDOT. We found that the development of the on-call consultants list fulfilled statutory requirements that contracts are awarded on the basis of a fair and open process and on the basis of demonstrated qualifications (Chapters 39.29 and 39.80 RCW and the Brooks Act 40 U.S.C. § 541). The Request for Proposal described relatively clear and concise criteria, the competing consultants were afforded the opportunity for debriefing conferences, and WSDOT generally followed recommended best practices. However, we recommend that two current practices could be improved, including the 1) Evaluation Process and 2) Addition of Geoarchaeology/Geomorphology specialists to the Scope of Services.

Evaluation Process: The purpose of evaluation in the consultant procurement process is to provide fairness and objectivity. To ensure that fairness and objectivity are maintained, the Office of Financial Management (OFM) recommends that a team of individuals complete the evaluation. According to best practices, the evaluation team should consist of members whose expertise allows them to evaluate all aspects of the proposals such as technical experts (e.g., in the case of the graving dock project, one or more archaeologists), project managers, or even outside stakeholders (e.g., FHWA, tribal or city representatives). We also recommend this approach to ensure that the best consultants are selected. In the 2001 solicitation for On-Call Cultural Resource Consultants, the evaluation team was made up of three individuals and while one of the evaluators was from WSDOT's Cultural Resources Program he/she was not an archaeologist. In fact, no one in the Cultural Resources Program at the time was a university/college trained archaeologist. Currently (summer of 2005), the Cultural Resources Program employs two full-time federally qualified archaeologists who could be called upon to review consultant proposals. No comments can be made about the particular expertise of the two unknown on-call reviewers.

Past Performance/Consultant References Process: Obtaining consultant references on past performance is widely accepted as a useful tool for assessing competency and capabilities of a firm, and this practice is suggested in the Office of Financial Management's (OFM) *Guide to Personal Service Contracting* (July 2001) as a "best practice." Therefore, it is important that the references checked relate to the requirements stated in the Request for Proposal. Interviews with the CSO indicated that in 2001 outside references were not typically contacted for consultant performance reviews. The CSO assumed that these references would provide only positive feedback. Because the On-Call list was developed in 2001, prior to the passage of Chapter 39.29.110 RCW, which mandates adherence to the OFM personal service contracting guidelines, a reference check was considered a "best practice." During the review process for 2001, the Past Performance/Reference column was left blank for the CSO to complete. The Past Performance/Reference scores were determined by the CSO from data in WSDOT's Biztrak system. However, a consultant submitting a proposal for the first time to WSDOT would not have past performance references in the Biztrak system. Such was the case with WSHS. As a

result, the references provided by WSHS were contacted and these past performance scores were entered into the Biztrak database. The 2001 On-Call announcement did not state that references already in the Biztrak database would be used in scoring the proposals. Without having reviewed the Biztrak database, it is unclear to Foth & Van Dyke whether Biztrak references would accurately reflect the RFP requirements. WSDOT has recently clarified the Past Performance/References criteria and we have no recommendations to make on this topic. At the present time, a consultant can request that WSDOT use existing Biztrak references, can supply three to five new references on WSDOT's standardized forms, and can request that a WSDOT project manager complete a reference for their firm.

Geoarchaeology/Geomorphology Application: WSDOT has done a very good job in defining the on-call consultant scope of work. The on-call consultant is expected to be capable of providing all services related to cultural resource management, which requires a multi-disciplined team of specialists. An all-encompassing team approach to an archaeological investigation can positively impact archaeological interpretation, decision-making, and archaeological recommendations because of the wealth of data provided by each specialist. Further, having a variety of on-call specialists from which to choose should streamline the archaeological process within the larger transportation project's schedule and budget. One specialty that was noticeably missing from the on-call specialists is that of "geoarchaeologist" or "geomorphologist," which would have helped to specifically address the obvious need for "deep-site" testing in Washington.

We will briefly describe how geoarchaeology is used to provide the broader context for its application at archaeological sites such as the Tse-whit-zen village site (45CA523). Additionally, these terms and concepts will be used in other report subsections dealing with the archaeological investigation at Port Angeles. This summary is based on professional publications, including Holliday's (1992) edited volume entitled, *Soils in Archaeology Landscape Evolution and Human Occupation*, and French's (2003) book entitled, *Geoarchaeology in Action Studies in Soil Micromorphology and Landscape Evolution*.

In order to understand geoarchaeology, it is important to define geomorphology first. French (2003:3) defines geomorphology as "the study of the arrangement and differentiation of landforms, and the processes that shape and alter them." Some of the major processes that affect landforms include climate, water (including snow and ice), tidal activity, flooding, volcanic activity, earthquakes, landslides, and human activities such as forest clearing, wetland drainage, and agricultural practices. Geoarchaeology combines the study of the archaeological and geomorphological records and addresses how natural and human-caused processes alter the landscape. Geoarchaeology is "inextricably linked" to archaeology as it can help determine the "processes involved in the creation of the archaeological record" (French 2003:3). French (2003:8-9) identifies three major themes that geoarchaeological research often includes. The first theme focuses on landform evolution, which looks at natural processes such as tectonics, glaciation, and sea level changes to understand how these processes affected the present day landscape. Said differently, how did natural processes create and alter the landforms/landscapes through time? The second theme is the examination of the interaction and interrelationship of the climate, soils, landscape and humans to define detailed explanations of landscapes and land-

use changes. Said differently, how did humans cause change and/or react to the changing environment? The third theme is how the “hydrological regime and burial regime” affects archaeological and environmental preservation that an archeologist is faced with during any excavation. Said differently, how does the hydrology and sedimentation affect the depth below the land surface and preservation of an archaeology site?

3.4.1.1.4 Recommendations

Recommendation No. 11: WSDOT needs to ensure that objectivity and fairness are maintained and that knowledgeable reviewers assess the On-Call Contract proposals.

WSDOT should record the full names and positions of every evaluator. More importantly, documentation of the consultant selection process, including the consultant submittals and evaluator score sheets, must be retained in accordance with the State’s retention schedules.

We further recommend that the members of the evaluation team sign a Conflict of Interest form, a practice common among many other state DOTs. Evaluators should not have a financial interest in the selection results.

Recommendation No. 12: WSDOT should add a geoarchaeology/geomorphology specialty, including deep-site testing, to the list of services in the Cultural Resource On-Call Contract scope of work for two reasons: 1) to enhance the multi-disciplined approach to archaeology and 2) to reduce the chances of identifying significant resources late in the project, particularly during the construction phase, which could impact both the project budget and schedule. The professional qualifications required of the person(s) conducting geoarchaeological or geomorphological investigations should be clearly defined by WSDOT. At a minimum the person(s) should include a postgraduate degree in geology, soil science or Quaternary studies and have field experience in the Pacific Northwest, or similar geologic settings. Make the qualifications worthy of, or parallel to, those required for the federally (U.S. Department of Interior) qualified archaeologist.

3.4.1.2 Sole Source Agreements

3.4.1.2.1 Criteria

Consultants may be obtained through sole source contracts. Sole source contracts are not competitively procured and are awarded when there is only one source (e.g., consultant) known to be able to provide the required services. The sole source procurement process begins with a state agency identifying a need for personal services or goods. In Washington, a state agency utilizing the sole source procurement process is bound by the Office of Financial Management (OFM) policies identified in Chapter 15 of the State Administrative and Accounting Manual as well as Chapter 39.29 of the Revised Code of Washington (Chapter 39.29.018 RCW). Sole source contracts exceeding \$20,000 must be filed with the OFM a minimum of ten days prior to the start of the proposed work. These contracts are subject to OFM approval. Successfully filing a sole source contract with the OFM requires submittal of several items. These items must be capable of withstanding public and legislative scrutiny including justification of need, sole source criteria, reasonableness of costs, and a public advertisement. Following is a brief description of these contract filing requirements.

Justification:

- ◆ Identification of the problem or need with an explanation of how the services are critical to agency responsibilities.
- ◆ Explain why other governmental resources are unavailable and the agency lacks specific expertise.

Sole Source Criteria:

- ◆ The consultant must have unique qualifications or expertise to meet agency needs.
- ◆ Special circumstances, such as geographic limitations, must be explained.

Reasonableness of Cost:

- ◆ Agency must explain how the costs are fair and reasonable since the process was not competitive.

Sole Source Advertisement:

- ◆ Sole source contracts exceeding \$20,000 must be advertised to allow other potential consultants the opportunity to challenge the contract award.

3.4.1.2.2 Condition

Given these legislative mandates in Washington, WSDOT's Consulting Services Office posted a Legal Notice of Intent to Sole Source a contract with Larson Archaeological and Anthropological Services Ltd. (LAAS) to conduct the archaeological data recovery at the Tse-whit-zen village site (45CA523). The sole source contract was in the amount of \$4,600,000. This notice appeared on WSDOT's website and in the *Seattle Daily Journal of Commerce*. The utilization of LAAS was justified by WSDOT on the basis of their demonstrated archaeological expertise on Tribal village sites and a good business relationship with the Lower Elwha Klallam Tribe (LEKT). Most importantly, the trust relationship between LAAS and LEKT was determined to be critical for WSDOT to proceed with the Section 106 process at the Port Angeles graving dock. Consultants were notified of the criteria for submitting an Intent of Challenge as well as a deadline for this submittal. This intent to sole source was filed with the OFM within the required time frame. The Notice of Intent to Sole Source the archaeological investigation to LAAS was not challenged by other consultants. LAAS was awarded the sole source contract on April 1, 2004.

3.4.1.2.3 Findings and Recommendations

We found that WSDOT's procurement of the sole source contract with LAAS followed the OFM guidelines and Chapter 39.29 of the Revised Code of Washington. Future procurement of sole source contracts should continue to follow these established practices.

3.4.1.3 Management and Oversight of Archaeological Contracts and Investigations

3.4.1.3.1 *Criteria*

The business practices of state DOTs can impact the ways in which archaeological consultant contracts are administered and managed. The most frequently cited factors affecting an agency's ability to effectively manage and streamline the management of archaeological investigations include the number and qualifications of both in-house cultural resources staff and management staff, the structure of consultant contracting, and how compliance with Section 106 is incorporated into the NEPA process and project design. Ultimately these factors affected the quality of archaeological investigations such as the Port Angeles Graving Dock project, which was selected as a pilot project for permit streamlining pursuant to Chapter 47.06 RCW. WSDOT's project development guidelines acknowledge the role that their in-house cultural resources experts play in project planning. These guidelines encourage regional offices, the Highways and Local Programs office (H&LP), and other branches to consult with the cultural resources specialist in the Cultural Resources Program during the project planning phase. Additionally, the guidelines suggest that local subdivisions or branches of WSDOT submit the results of cultural and historic resources investigations performed by consultants for review prior to submitting these results to the Department of Archaeology and Historic Preservation (DAHP) and other consulting parties for review.

Some states find that the number of in-house DOT archaeological staff and their availability to conduct technically diverse archaeological investigations necessitates the outsourcing of archaeological work. Similar to Washington, other states achieve outsourcing through the establishment of on-call consultant and prequalification lists. These types of consultant lists have been noted by some state DOTs to facilitate timeliness in project initiation due to reduced administrative paperwork. Alternatively, other state DOTs have noted that the use of a consultant list reduces consistency in the work as well as reduce the response time to address the needs of complex and constantly changing projects. The integration of archaeological investigations into the NEPA process has been documented to vary on the basis of project complexity, the number of project alternatives, and the number of previously recorded National Register eligible sites within a proposed project corridor. Discussing the potential for projects to impact significant and/or sensitive archaeological sites with State Historic Preservation Officers, Tribal governments, and consultants very early in the planning and design process has been documented to help some state DOTs develop ways to avoid archaeological sites and develop a phased approach (see next paragraph) to archaeological survey.

Historic preservation statutes define when a phased approach may be used in identification, evaluation, and mitigation of cultural resources. 36 CFR 800.4(b)(2) allows a phased approach to historic properties identification and evaluation efforts. "Where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted, the agency official may use a phased process to conduct evaluation and identification efforts." The agency official may also defer final identification and evaluation of historic properties in the execution of a memorandum of agreement. If a phased approach is taken for identification and evaluation where alternatives consist of large land areas, corridors, or where property access is limited, then a "phased process in applying the criteria of adverse effect may be used" for

consistency (36 CFR 800.5(a)(3)). Site avoidance is often seen as a win-win outcome for the DOTs in terms of cost and time savings, and for the preservation community in terms of the stewardship of significant cultural resources. The phased approach described in 36 CFR 800.4 and 36 CFR 800.5 should not be confused with a site specific phased research design or site treatment plan.

The best practices identified to effectively manage and streamline archaeological investigations point to the use of federally qualified in-house DOT archaeologists to provide management oversight of archaeological investigations particularly when these investigations are outsourced to consultants. The DOT archaeologists can serve as liaisons to the consultants and can help effectively manage the Section 106 process and its integration with the NEPA process. The types of management oversight by DOT archaeologists may include managing the contracts and/or the consultants. Relying on the expertise of in-house archaeologists for management oversight is considered to be essential for a number of reasons, including:

- ◆ In-house archaeologists are very responsive to project needs,
- ◆ Management oversight by in-house staff can ensure quality and consistency in the consultant's work,
- ◆ In-house archaeologists can improve overall project delivery by maintaining constant communication with the designers and engineers, the archaeological consultants, and the SHPO,
- ◆ Review by in-house archaeologists often results in standardization in reporting and documentation, which may ultimately facilitate and streamline SHPO review,
- ◆ In-house experts can assist in coordinating the Section 106 process with the NEPA process resulting in streamlined project delivery, and
- ◆ In-house archaeologists have a better chance of both awareness and understanding newer (state-of-the-art) technologies, best practices, and legislation that impacts their profession as opposed to another non-archeological in-house professional.

Management oversight of agreements or contracts is essential to ensure that the procured work is complete, accurate, and consistent with agreement terms. Common practices to assist the manager(s) in contract oversight include reviewing invoices, requiring a consultant to provide monthly summaries or interim reports to help track work progress against the scope of work and schedule, and maintaining a paper trail of meeting minutes, telephone logs and other correspondence to ensure that action items are addressed. This oversight may be divided between individuals with the appropriate expertise. For instance, budget oversight and technical oversight of the actual work being performed can be delegated to the appropriate expert. The lack of oversight has been found to result in a substandard final report and overall less efficiency in the project delivery.

3.4.1.3.2 *Conditions*

Interviews were conducted with WSDOT staff, including task or project managers, cultural resources specialists, personnel in the Consultant Services Office (CSO), and some of WSDOT's archaeological consultants, in order to identify how WSDOT's internal business practices impacted the project management of the archaeological investigation at the Tse-whit-zen village site. Our review of these interviews resulted in identifying the composition of the Cultural Resources Program team and their responsibilities, the consultant selection process (previously discussed in Subsections 3.4.1.1 and 3.4.1.2), the key personnel responsible for contract oversight, and the timing of Section 106 compliance process within the NEPA review. The consultant selection process will not be discussed in detail here. The Cultural Resources Program and Project Management will be addressed in this section.

WSDOT Cultural Resources Program: The Cultural Resources Program is part of the Environmental Services Office (ESO) in Olympia and assists all WSDOT regional offices, Highways and Local Programs (H&LP), and other WSDOT branches in complying with Section 106 of the National Historic Preservation Act (NHPA). The Program is involved in Section 106 compliance at various levels including sending letters for initial consultation with tribes, providing the on-call consultants list to project managers, coordinating archaeological and historical surveys and evaluations, reviewing consultants' reports, determining the effects of transportation projects on historic properties, assisting in the preparation of Memoranda of Agreements (MOA), and consulting with the Washington State Historic Preservation Officer (SHPO) on the project level. The Program facilitates cultural resources training, participates in public and professional conferences, and advises agency decision makers in matters of cultural resource management. While the responsibilities of the Program are numerous, the Program Manager feels that her role has limited authority to impact decision-making because it is not an executive level position. Further, the Program Manager stated that project managers view the Program as providing advice on how to address Section 106 compliance requirements with the least amount of effort (personal communication, Cultural Resources Program).

The Cultural Resources Program was staffed with two cultural resources specialists in 2002 when Port Angeles became the preferred alternative for the construction of the graving dock. The program manager is an expert in Section 106 compliance; however, the program manager's formal educational background is in accounting. The program manager has had some specialized training in Section 106 compliance but not enough to meet federal (U.S. Department of Interior) standards to act as a Principal Investigator. The program manager has been in the Program since 1997 and has worked for WSDOT for 28 years. The second cultural resources specialist joined the Program in 2000. This specialist is a federally qualified historian with approximately 30 years of experience in cultural resource management and Section 106 compliance. This latter specialist has supervised archaeological field investigations and has written archaeological reports. For example, the specialist's work includes an archaeological investigation of Sequim Bypass in the 1990s, for which he was a consultant to WSDOT's Port Angeles office. Because of this wide ranging background, technical reviews of archaeological consultant's work are typically conducted by this specialist. We did not request a curriculum vitae from this specialist and therefore cannot comment on whether he meets all of the federal

requirements for an archaeologist, but he has demonstrated competency in many aspects of cultural resource management.

Defining the “Professional Qualification Standards (1983)” per the “Secretary of Interior’s Standards and Guidelines” (http://www.cr.nps.gov/local-law/arch_stnds_9.htm) is important to review. The federal guidelines for an archaeologist include at a minimum:

- ◆ A graduate degree in archaeology, anthropology or closely related field;
- ◆ One year full-time professional experience or specialized training in archaeological research, administration or management;
- ◆ Four months of supervised and analytic experience in North American archaeology; and
- ◆ Demonstrated ability to carry research to completion.

Additionally, a prehistoric archaeologist shall have at least one year of full-time professional experience in the study of archaeology of the prehistoric period. An historic archaeologist shall have at least one year of full-time professional experience in the study of archaeology of the historic period.

The minimum requirements in history are a graduate degree in history or closely related field; or a bachelor’s degree in history or closely related field plus one of the following:

- ◆ At least two years of full-time experience in research, writing, teaching, interpretation, or other demonstrable professional activity with an academic institution, historic organization or agency, museum, or other professional institution; or
- ◆ Substantial contribution through research and publication to the body of scholarly knowledge in the field of history.

Our interviews with two WSDOT cultural resources specialists identified concerns of a pattern of behavior that they recognize. Both CRP specialists indicated that there is a long standing “unwritten” policy of not sending projects from the Olympia Region to the CRP office for review (since the late 1990s). The current regional environmental manager contacted the CRP program personnel to review the proposal submitted by WSHS for the initial investigation of the Port Angeles graving dock location; however at the time, the CRP specialist who reviewed the proposal thought that this consultation between the ESO and the CRP was atypical. Based on our interviews, the ESO continues to contact the CRP Program on specific project cultural resources issues. However, the CRP manager noted that in general the contact between her office and the Office of Environmental Services in Olympia was estimated to be much less than what she observed for other regional offices and branches.

Important issues that were considered in this review is the nature of coordination between the Cultural Resources Program and the ESO given the ESO’s apparent history of taking sole

responsibility for completing the Section 106 process. Additionally, other factors considered in this review included whether the recommendations provided by the in-house experts regarding the Port Angeles project were based on legal requirements and current best practices and whether the number of expert staff and their professional qualifications limited their ability to make professional recommendations.

Based on an examination of written correspondence between WSDOT personnel, it is apparent that input from the in-house cultural resource specialists was sought by the ESO for the Port Angeles Graving Dock project, but was infrequent. In general, the in-house specialists were excluded from technical management oversight of the archaeological investigation on the Port Angeles Graving Dock project. As the site mitigation was underway in April 2004, WSDOT's in-house cultural resource experts appear to have been increasingly displaced with a concomitant increase in consultation with the SHPO and the OSA at the DAHP. The recommendations provided by the cultural resources experts at WSDOT followed expectations for current best practices and followed the Section 106. Two examples of interaction between the ESO and one of the cultural resource specialists, the historian, are presented below.

Between September 5, 2003, and February 11, 2004, a relatively small number of e-mails (11) were written to or by this cultural resource specialist regarding the Port Angeles graving dock. In an e-mail dated February 11, 2004, the cultural resource specialist recommended that the project manager from the ESO obtain second and third opinions from consultants other than WSHS and LAAS, and specifically, those that were familiar with the archaeological investigation of shell midden sites (FVD2028). The project manager's response was that LAAS's estimate of \$5.4 million was high and therefore it was important for WSDOT to "evaluate required elements from what might be optional" (FVD2029). In this instance, coordination between the ESO and the CRP occurred, but the CRP's recommendation was not implemented.

The initial archaeological assessment at the Port Angeles graving dock by WSDOT was undertaken by an on-call consultant in November 2002 due to the lack of federally qualified in-house staff to perform the work. The Port Angeles graving dock archaeology assessment started late in the overall HCB timeline because the selection of Port Angeles for the graving dock occurred in late summer/early fall 2002. The environmental project manager who oversaw the archaeological contract, requested advice on the Port Angeles project from one of the in-house cultural resources specialists. This specialist, the historian, was responsible for accurately identifying the need for deep-site testing of the graving dock project area. He further assessed that the standard archaeological techniques of pedestrian survey and shovel testing would be inadequate to investigate the Port Angeles site, which was covered with an estimated 6 feet of overburden. The Port Angeles locale had been used extensively by various industries (e.g., logging, shipbuilding) from the early 1900s to the present. Many of these early industries had placed manmade fill on the shoreline in order to build their industrial complexes above the high tide line. The specialist recommended that the archaeological consultant monitor the excavation of trenches. Mechanical trenching, a standard and professionally accepted technique, was proposed as a relatively quick method for removing the historic fill to determine whether intact archaeological material occurred below the fill. This field technique was recommended by

WSDOT's Cultural Resource Specialist and was implemented during the initial field assessment conducted by WSHS.

After the identification of the Tse-whit-zen village site (45CA523) during construction in August 2003 and its subsequent Determination of Eligibility was written, WSDOT was required under Section 106 to resolve the adverse effect on the National Register eligible site of Tse-whit-zen village (45CA523). Many steps were involved in resolving adverse effects, including the preparation of documentation, notification of the Advisory Council on Historic Preservation, negotiation of an agreement document with consulting parties, preparation of a Memorandum of Agreement (MOA), filing the agreement document with the Advisory Council on Historic Preservation (ACHP), and carrying out the provisions of the agreement document. An MOA is a legally binding document that is prepared at the end of the Section 106 process, and describes what will be done to resolve identified adverse effects. An MOA provides for only minor modification or decision-making regarding the site after it is signed, but typically provides a protocol for creating an amendment as well as clauses for dispute resolution. The same WSDOT cultural resources specialist recommended that a MOA be developed to resolve the adverse effects on the Tse-whit-zen village site. This recommendation complies with federal regulations. However, shortly after making this recommendation, this specialist, who was WSDOT's primary cultural resources specialist for archaeology stated that he was not involved in reviewing or commenting on future archaeological investigations at the site per an executive level management request. Both the CRP manager and CRP specialist believed that WSDOT's upper management did not initially want to negotiate an MOA for fear that this process would impact the HCB project timeline (personal communication, interview with WSDOT personnel, August 15, 2005).

Project Management: Effective agreement management is the key to ensuring that the contracts are prepared and executed appropriately and that the work being procured is complete, accurate, and consistent with the agreement terms. Agreement management is achieved by a few key individuals at WSDOT, including the agreement manager and the task or project manager. The agreement manager prepares and executes contracts, assigns Task Order Document Numbers, Task Order Document Amendment Numbers, compiles the Task Order Document and Amendments, and completes a performance rating for on-call master agreements. The contract project manager or task manager has the responsibility of day-to-day oversight of and contact with the consultant to ensure the delivery of the project according to the agreement or task order if a master contract is involved. The project manager may be thought of as a liaison for the contract. Additionally, the project manager reviews the invoiced work effort submitted by the consultant. When a consultant completes a project, an evaluation is completed by the project manager and is then submitted to the agreement manager. This section will focus on the duties of project managers.

To fulfill compliance with Section 106 of the National Historic Preservation Act (NHPA) for the Port Angeles graving dock locale, WSDOT procured archaeological services from WSHS using an on-call personal service contract and from LAAS using a sole source personal service contract. Outsourcing the archaeological investigation was necessary because the in-house expertise within the Cultural Resources Program was limited. One WSDOT employee, the

regional environmental manager, acted as the project manager for all of the archaeological contracts issued for the Port Angeles graving dock.

Foth & Van Dyke reviewed the consultant's contracts and the contract deliverables. A review of the consultants' contracts identified that the following key items were included in the agreements: start and completion dates; non-payment and termination of contract clauses; the scope of work; State (i.e., project maps and project data) and consultant deliverables (i.e., monthly summaries, meetings as necessary, reports, etc.), a schedule and budget. WSHS was issued ten amendments that increased the budget and two amendments that extended the contract completion date. The most recent amendment (at the time of researching for this report), Amendment 13, of WSHS's on-call contract went into effect on July 1, 2005, and extended the completion date to September 29, 2005. LAAS had two amendments to their personal services contract. The first amendment increased the budget. The second amendment was for a revision of the previously developed scope, schedule and budget due to WSDOT's abandonment of the graving dock project. The report due date on LAAS' second amendment is August 1, 2006. Foth & Van Dyke reviewed the project deliverables for both consulting firms, including monthly summaries, interim reports, meeting notes as well as information documented during our interviews. Below is a list of items reviewed.

- ◆ *Monthly Summaries.* Monthly progress reports were written by LAAS for May through September 2004. LAAS created several site maps showing the distribution of excavation units in October 2004; these maps were copies of faxes sent to WSDOT's Port Orchard office, but no cover sheet was attached. No monthly summaries written by WSHS were provided to Foth & Van Dyke.
- ◆ *Interim Reports.* WSHS prepared an interim report dated October 7, 2005, summarizing the results of monitoring and excavation in the bioswale area. LAAS prepared an interim report dated October 10, 2003, discussing the distribution of archaeological deposits identified during the second site assessment in September and October 2003. LAAS prepared a probability sample status report in November 2004. An interim report on the status of data recovery at Tse-whit-zen was jointly prepared by WSDOT, LEKT, LAAS, and WSHS in November 2004. Draft reports discussing the data recovery effort and construction monitoring at the Tse-whit-zen site were due from both LAAS and WSHS in September 2005. After internal QA/QC of this non-public document, the draft report prepared by LAAS, dated September 19, 2005, was released to Foth & Van Dyke for review in mid-October. WSHS submitted an incomplete draft report to WSDOT in October after missing their deadline in September 2005. This draft non-public document was unavailable for Foth & Van Dyke's review until WSDOT completed its internal QA/QC. Foth & Van Dyke received the report the week of November 14, 2005, at the time of writing this report.
- ◆ *Meeting minutes.* Throughout the course of archaeological investigation at Tse-whit-zen, many formal meetings (i.e., meetings with written agendas provided to participants in advance) and informal meetings (i.e., conducted in the field to solve problems, weekly field meetings for construction and archaeology) were held. Meetings were part of each

consultant's task agreed to in their contracts. During our interviews with participants of these meetings, it became clear that limited notes or minutes were written. Some interviewees indicated that they wrote minimal notes on action items, but these notes would be discarded upon the completion of the required action. Action items would often be mentioned in e-mails or written correspondence as a means to follow up on only specific topics discussed at meetings. No participant was assigned the responsibility for producing minutes.

3.4.1.3.3 Findings

Cultural Resources Program: In order to effectively manage archaeological investigations conducted under Section 106 mandates, the management staff should possess appropriate knowledge regarding cultural resources and the Section 106 process. WSDOT performed well by developing internal cultural resource management educational opportunities through the WST2 (Washington State Technology Transfer Center; formerly T2) Educational Training Program. The creation of this program resulted from a partnership between WSDOT, FHWA and Washington State local agencies focused on enhancing the technical and management skills of local agencies' staff (<http://www.wsdot.wa.gov/TA/T2Center/T2HP.htm>). The Tribal Liaison Office also offers cultural resource management classes. The Cultural Resources Program helps coordinate some of these training programs. Since at least 2001, a cultural resources class has been available through WST2. Currently, this class is a 3.5-day course, including topics such as archaeological material culture, state and federal cultural resources regulations, general prehistory of Washington, and preservation techniques. WSDOT's Tribal Liaison Office also offers training in Section 106 compliance. The cultural resources classes are offered agency-wide, but are not mandatory. Members of the Cultural Resources Program typically attend these classes sometimes in addition to outside courses offered by the Advisory Council on Historic Preservation (ACHP) and the National Highway Institute (NHI).

Our review of available interviewees' comments indicates that WSDOT does not have a *consistent* documented protocol for addressing Section 106 compliance needs at some management levels. Further, it is typical for some managers to exclude input from their in-house experts despite WSDOT's project development guidelines encouraging regional offices to consult with their in-house cultural resources specialists both during the project planning phase and after the outsourced cultural resources consultants provide WSDOT with their results. The cultural resources specialists we interviewed indicated that several project managers in WSDOT's Olympic Region have not routinely consulted with them. The cultural resources specialists have an intimate knowledge of the Section 106 process and an excellent understanding of historic preservation issues as they relate to transportation projects. With input from these specialists, WSDOT can achieve agency-wide consistency in interpretation of the regulations and in implementation of the Section 106 process, particularly when new regulations are put into effect or on particularly complex transportation projects. Understanding the Section 106 process and best practices in cultural resource management can allow for better balancing of resources, thereby facilitating streamlining in the environmental process. Our interviews suggest that WSDOT project managers developed a pattern of not routinely utilizing their in-house CRP staff. However on the Port Angeles Graving Dock project, consultation with the cultural resources staff occurred during the early months of the Port Angeles Graving Dock project, but

this consultation was not consistent throughout the entire project. WSDOT's reliance on their in-house CRP staff was replaced by frequent consultation with the SHPO as the consultation process evolved.

As a final note, WSDOT has increased their in-house cultural resources expertise within the past two years. The Cultural Resources Program staff has increased from two to six staff members. Two of the new staff members are archaeologists and the other new staff members are cultural resources specialists. One archaeologist has been hired at the Port Angeles office.

Project Management of Consultant Contracts: We found that WSDOT's regional environmental project manager demonstrated a lack of attentiveness to ensure that the deliverables were submitted and deadlines met particularly with regard to monthly summaries and reports. The lack of monthly summaries does not facilitate the project manager's responsibility to monitor the consultant's progress between deadlines and project milestones. Further, the project manager's ability to assess whether a consultant is performing the work detailed in the contract may be reduced in the absence of monthly summaries.

Failure to monitor a consultant's progress in terms of scheduling, budgeting and technical performance throughout the life of a contract can result in an unacceptable final product such as a final report.

One method that may offer flexibility in project oversight, particularly on large and complex projects, is to divide the management tasks between the project manager and a technical expert such as a Cultural Resource Specialist. The project manager, who may not have the technical expertise to review the archaeological consultant's work, could manage the budget, conduct invoice reviews, and ensure that deadlines are met. An archaeological technical expert could review the work product to ensure that the consultant is performing according to the archaeological scope of work identified in the contract, and that the work complies with current legislation. One method that could enhance the learning process for managing project delivery, is to offer in-house mentoring programs to inform participants of the best practices in contract oversight. Mentoring would be voluntary, but could be useful in providing "real world" examples as a learning tool for project managers.

During our interviews, several stakeholders (consulting parties, agency officials, consultants) commented that they were often times uninformed about project progress because they could not attend some meetings to which they were invited, and were not invited to many of the informal meetings. The information gleaned from monthly summaries and meeting minutes could be used to compile monthly or bi-monthly newsletters or memoranda on project progress, which could be distributed to all of the stakeholders and, if appropriate, the public.

3.4.1.3.4 Recommendations

Recommendation No. 13: WSDOT should require continuing education and training for all their cultural resources specialists to ensure continuation of the Department's core competency. This training should be taken through the Advisory Council on Historic Preservation (ACHP), the National Highway Institute (NHI), or other qualified institution

(e.g., university). Members of WSDOT's Cultural Resources Program typically attend cultural resources classes sometimes in addition to outside courses offered by the ACHP and the NHI. WSDOT's cultural resources staff is their in-house team of experts who can assist project managers in fulfilling WSDOT's obligations under Section 106 of the NHPA. Train all of the many levels of WSDOT management to the cultural sensitivity required on some projects and in some localities. Managers also need to better understand what Section 106 consultation means and when it needs to be applied.

Recommendation No. 14: WSDOT should require their project managers to contact their Cultural Resources Program for all of their Section 106 compliance issues. Have a WSDOT cultural resources expert review the project, scope of work, and Area of Potential Effect (APE) before the project is completely designed, and consult early with stakeholders. WSDOT should use their in-house experts and outside sources for unusual projects to help them save time and expense. In addition, the final construction plans should also be reviewed by the Cultural Resources Program to document and minimize the changes to the APE. One potential savings would come from the possibility of avoiding high potential areas for archaeology sites.

Recommendation No. 15: WSDOT should implement methods to monitor a consultant's progress between major project milestones. Methods might include, for example, monthly or weekly consultant's project progress reports, meeting minutes, etc.

Professional Suggestion I: To enhance the learning process for managing project delivery, we suggest that WSDOT provide in-house mentoring programs to inform participants of the best practices in contract oversight. Mentoring would be voluntary, but could supplement what is learned in the mandatory class by providing "real world" examples as a learning tool for project managers.

Recommendation No. 16: WSDOT should divide management tasks between a project manager and technical expert on large and complex projects. The technical expert could be employed by WSDOT or could be an outside impartial consultant with archaeological expertise. A consultant may be compensated or provide the services voluntarily. An example of using outside specialists can be found on WSDOT's Website of Ethnobotany and Cultural Resources in Washington, which directs questions regarding ethnobotany to an employee of the Bureau of Land Management.

Recommendation No. 17: WSDOT should have a standard protocol for project documentation that includes writing monthly summaries and recording meeting minutes. Monthly summaries and meeting minutes are intended to provide useful information throughout the project. During our interviews, several stakeholders (consulting parties, agency officials, and consultants) commented that they were often times uninformed about project progress because they could not attend some meetings to which they were invited, and they were not invited to many of the informal meetings. The information gleaned from monthly summaries and meeting minutes could be used to compile monthly or bi-monthly newsletters or memoranda on project progress, which could be distributed to all of the stakeholders and, if appropriate, the public. This approach would be very useful on large projects such as the Port Angeles graving dock.

3.4.2 Archaeological Request for Proposal and Scope of Work for Initial Site Assessment in November 2002

3.4.2.1 Criteria

A Request for Proposal (RFP) is used to identify the most suitable consultants for a planned project. Washington's Office of Financial Management defined an RFP as a "procurement document used in state government to procure personal services. This document not only serves as the basis for the consultants to respond but, as importantly, serves as the foundation for the eventual contract" (OFM 2001:5-4). The OFM guidelines further states that the RFP must provide "clear, unambiguous statements of project goals and objectives" (OFM 2001:5-4). At the time of the Port Angeles project, the OFM guidelines were considered best practices. It should be noted for future WSDOT projects that it is mandatory for state agencies to follow the current guidelines. According to best practices, the RFP for an archaeological project should include a detailed description of the project, define the Area of Potential Effect (APE), define milestones and deliverables, and request specific information from the consultant. Project plans and maps are often provided with the RFP. The RFP defines the criteria for the scope of work that the consultant submits. With an on-call agreement, the RFP is a non-competitive process and as a result, the preferred consultant(s) is selected for a project. The scope of work and budget are negotiated between WSDOT and the selected consultant.

In order for the consultant to develop an appropriate scope of work and testing protocol, the project should be described in detail, particularly the APE. According to 36 CFR Part 800.16, the Area of Potential Effect "means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." The APE therefore encompasses the vertical and horizontal extent of physical impacts to the project area as well as indirect impacts within the project area. Typically, buildings, structures, districts, traditional cultural properties and cultural landscapes are often thought to be impacted by direct and indirect effects and the APE for these types of properties may be defined beyond the construction limits. Indirect project impacts could include visual and auditory impacts to an adjacent historic building, but could also (for example) include the effects of dewatering on an archaeological site adjacent to a project's construction limits or APE. The APE should be defined by the federal agency responsible for the undertaking or its representative and is expected to include areas that are subject to reasonably foreseeable effects of the undertaking and should be guided by project specific plans.

Given the project description and a definition of the APE in the Request for Proposals (RFP), the consultant must provide a detailed scope of work and a budget. Without an accurate description of the APE in the scope of work, a consultant would have difficulty developing a realistic scope of work, budget and schedule, which provides the foundation for the contract. Typically, a scope of work includes:

- ◆ Company information,
- ◆ Introduction that restates project objectives for the purpose of illustrating the consultant's understanding of the project,
- ◆ A detailed explanation of how the consultant will achieve the objectives by describing pre-field, field, laboratory, and report preparation methods,
- ◆ Identification of deliverables,
- ◆ Identification of services provided by the State,
- ◆ Qualifications of the Consultant,
- ◆ Key personnel,
- ◆ QA/QC strategies,
- ◆ Project schedule,
- ◆ Budget, and
- ◆ Other information requested in the RFP.

3.4.2.2 Conditions

Subsection 3.4.2 deals only with WSDOT's solicitation of an RFP for the initial archaeological site assessment that was ultimately conducted by WSHS in November 2002. A discussion of the archaeological monitoring that occurred between August 19 and September 18, 2003, as well as a discussion of the second archaeological assessment that occurred between September 18 and October 3, 2003, can be found in Subsection 3.4.8. The on-call consultant list was used to select WSHS for the initial archaeological assessment of the Port Angeles graving dock in October 2002. On October 21, 2002, the Regional Environmental and Hydraulic Manager requested a scope of work in a letter to WSHS to conduct a literature search and an archaeological survey for the Port Angeles graving dock; WSHS was to coordinate this work with the LEKT. This manager provided the project location, preliminary site plan sheets, a historic map dating to 1924 illustrating historic industrial complexes, and a recent aerial photograph. The urgency of this work was noted in the letter and WSHS was requested to complete the final report on or before November 15, 2002. The dock facility was described as an old mill site currently used as a log sorting yard and composed partially of harbor fill. As much as 7.8 acres of impervious surface would be added to the graving dock floor. Water for the dock and groundwater encountered during excavation would be treated in on-site stormwater ponds. The work was to include creosote pile removal, installation of new piling, dredging, driving of sheet pile walls, excavation for the dock, pouring the concrete floor, and installation of underground piping (for fire protection within 300 feet of the harbor). The Area of Potential Effect included "all new ground disturbance plus any areas of concern noted by the appropriate tribes" (FVD1066).

3.4.2.3 Findings

The request for services sent to WSHS failed to provide an accurate project description and APE. It is unclear who defined the APE, but our interviews suggest that the Cultural Resource Specialist (historian) did not see a map of the APE until he reviewed the initial site assessment report. The vertical and horizontal dimensions of the graving dock, the depth of installation for the sheet piling, the location of the on-site stormwater ponds and bioswales (typically vegetated stormwater biofilters), the location and depth of piping, and a description of access roads and staging areas were not defined in the RFP. Additionally, the indirect effects of dewatering, compaction, and vibration on archaeological resources were not defined as part of the APE. However, WSHS was referred to the Port Angeles office for all questions regarding the above mentioned details project design.

It is important to point out that two major changes to the APE were made after the initial archaeological assessment had been completed. The first change included an area outside of the graving dock footprint needed for the construction of bioswales (typically vegetated stormwater biofilters) and the drainage system necessary to keep the project area dewatered during construction. Ultimately, a separate monitoring plan had to be developed for the bioswales and drainage system because these facilities were introduced after the MOA was signed. A second design change was made by WSDOT to realign the orientation of the graving dock; this design change included a 5-10 degree rotation counterclockwise of the graving dock alignment as depicted on aerial photographs provided by WSDOT as well as noted by the SHPO and a WSDOT Cultural Resource Specialist during interviews.

The scope of work developed by WSHS was based on the relatively inadequate project material provided by WSDOT. WSHS' scope of work outlined several tasks, including "pre-scoping task, review background data, conduct field investigation, prepare report, manage project, State-furnished materials, deliverables, schedule and budget." The task descriptions were brief and did not demonstrate that WSHS understood the specific project objectives. The scope of work provided no discussion of the graving dock project, the APE, and the methods by which the APE would be tested. WSHS did not provide a section on laboratory methods nor was a repository designated for the curation of any cultural material identified. This is necessary given the project's location along the shoreline of the Strait of Juan de Fuca and the potential for wet-site archaeology within this environmental setting. An example of wet-site archaeology is the Hoko River archaeological site complex, located approximately 55 miles west of Ediz Hook where the Hoko River flows into the Strait of Juan de Fuca. This site complex produced well-preserved archaeological materials such as cordage, basketry, fish hooks, woodworking tools, fish bone, and animal bone from water-saturated organic deposits below the high tide line (Croes 1995). The recovery of water logged archaeological and paleoenvironmental remains pose serious concerns for conservation. If these types of materials are exposed to oxygen and are allowed to dry out, their decay and destruction may be accelerated. Appropriate conservation methods should have been included in WSHS' scope of work in the event that a wet site was discovered. WSHS' description of their proposed field investigation was inadequate stating, "WSHS will conduct an on-site investigation of the project area to identify cultural resources within the project area of potential effect (APE). WSHS will evaluate sites for eligibility for inclusion in the National Register of Historic Places (NRHP) (as necessary) and will identify the extent of the

potential project impacts to cultural resource sites.” Field investigation methods should be explicitly stated, and the methods used should be guided by the environmental setting and project objectives. The budget included five days of fieldwork to be conducted by the Principal Investigator (one 8-hour day) and the Project Manager (four 8-hour days). A note at the bottom of the budget spreadsheet stated “WSHS reserves the right to substitute staff as needed to accomplish the work as specified in the Scope of Services.” WSHS not only substituted the principal investigator and project manager for a field archaeologist, but changed the schedule to four days of fieldwork.

The Port Angeles property was known to have had a long history of industrial use and to have historic fill across the property. However, the depth of historic fill was unknown when the Port Angeles property was selected for the graving dock construction.

3.4.2.4 Recommendations

Recommendation No. 18: WSDOT should provide a detailed written description of the Area of Potential Effect (APE) to the consultant, and require that a detailed scope of work be submitted from the consultant as part of their proposal back to WSDOT. Any subsequent changes to the APE should be formally documented and discussed with regulatory agencies, Section 106 consulting parties, WSDOT’s in-house experts, and WSDOT’s archaeological consultant(s) performing the work. The type and extent of impact defined in the Request for Proposal will help the consultant determine appropriate testing techniques. One of the goals of the archaeological investigation should have been to address the depth of the fill, whether intact soils were buried below the fill and, if present, whether cultural material occurred in the buried soils and underlying strata. Appropriate methods should have been developed by the consultant in order to meet these objectives. Neither WSDOT nor their consultants should assume that there are no significant Pre-contact and/or historic archaeological sites in disturbed areas. A consultant should carefully consider environmental and historic features that were present before modern land-altering activities, and then apply the appropriate field testing program as defined in a detailed scope of work. Appropriate laboratory methods must be included in the scope of work as well as the identification of an artifact repository. Because the Principal Investigator is responsible for the quality of a project from the research design to the final report, the archaeological guidelines of many SHPOs and state agencies specify a percentage of time the principal investigator should spend on a field project. Provide a detailed written APE to WSDOT’s consulting archaeologists inside their contract to protect both parties from misunderstandings. According to 36 CFR Part 800.16 the APE includes the geographic area in which direct and indirect impacts will occur within the project area. Both the direct and indirect effects of earth moving, vibration, noise, dewatering, settlement, oxidation, site truncation, liquefaction, etc. within the APE must be considered by the agency responsible for the undertaking.

3.4.3 Initial Archaeological Assessment (November 2002)

3.4.3.1 Criteria

In order for land managers to make sound decisions about the effects of their undertakings on historic properties in a project area, a careful selection of methods is necessary to identify the kinds of properties that might be present. An archaeological assessment (frequently called a “Phase I Archaeological Investigation” in other parts of the United States) that meets the Secretary of the Interior’s Guidelines for Identification (Identification) includes a statement of objectives or a research design, archival research, field survey, and a report of the survey results. A research design provides the overall plan to guide the location, identification and eligibility assessment of cultural resources. The research design addresses all aspects of the investigation from archival research to report preparation, including field and laboratory methods, the integration of interdisciplinary information, and may include the procedures to deal with unexpected discoveries including the discovery of human remains. The objectives of Identification include the documentation of existing data about known historic contexts, derived from archival research, to define the physical extent of the area to be surveyed and the methods to be used to investigate the area. The methods employed should be compatible with the “environmental character of the geographic area under study and the kinds of properties most likely to be present in the area” (http://www.cr.nps.gov/local-law/arch_stnds_2.htm). Special survey techniques may be needed in certain environmental settings. The types of specialized techniques may include remote sensing, underwater archaeological survey, and deep-site testing.

The results of the survey must be incorporated into the planning process. The survey results should be presented in a report. This report should include an introduction, description of area surveyed, reasons for not surveying areas, the research design, methods used, including whether those differed from the methods stated in the objectives and the reasons for using different methods, the survey results and recommendations. The results should demonstrate how the objectives were met. The report should also include the following types of visual information:

- ◆ Areas surveyed illustrated on a topographic map (with scale and north arrow),
- ◆ Location of a sites identified on a topographic map (with scale and north arrow),
- ◆ Sketch maps of sites identified with site boundaries depicted (with scale and north arrow), and
- ◆ Photographs as appropriate.

If special survey techniques are employed, such as trenching, coring, or augering, the report should include a nationally recognized standard description of the soils (e.g., USDA or Unified Soil Classification System), stratigraphy identified, and profile drawings with a scale depicted.

3.4.3.2 Condition

The report for the Port Angeles graving dock archaeological assessment was prepared by personnel from WSHS and completed in January 2003. This report presented the archival research results, field methods, field results, and recommendations. Foth & Van Dyke reviewed project documentation and conducted oral interviews with many of the participants. The goal of this review was to determine what processes led to the ultimate outcome of the survey and how one of the premier sites on the Olympic Peninsula, the Tse-whit-zen village (45CA523), was not identified.

The survey was conducted by a federally qualified archaeologist from November 12-15, 2002, at the start of the rainy season. This archaeologist was not the Principal Investigator. Prior to the start of fieldwork, personnel from WSHS conducted a background literature search at the DAHP and the Clallam County Historical Society. This research identified several previously recorded sites near the Port Angeles graving dock project area and illustrated a rich history of occupation on and near Ediz Hook. In particular, the project area was determined to be a possible location of an important Klallam village site known as Tse-whit-zen. In ethnographic accounts, the Tse-whit-zen village location was described as east of a lagoon outlet at the base of Ediz Hook on Port Angeles Harbor. Ethnographic research also indicated that Klallam villages were located in close proximity to their cemeteries. The Tse-whit-zen cemetery was documented in 1856 by an early Euroamerican settler who constructed his house near the graves. In 1920, when industrial development of the area was underway, the Washington Pulp and Paper Corporation excavated footings for the pilings of their mill and “disturbed hundreds of Indian bones” (Burns and Rooke 2003: 4; Larson and Lewarch 1991:21). The exact location of the cemetery was unknown when the WSHS field investigation began, although an attempt had been made to make tribal inquiries. The archaeological assessment report indicated that personnel from WSDOT contacted the LEKT and the Makah tribal representatives “concerning the possibility of significant cultural properties in or near the project area....No project area-specific concerns were identified” (Burns and Rooke 2003:5). The nature of this contact (i.e., in-person meeting, telephone call, or letter) was not described.

The site assessment report objectives were to include “background research, a pedestrian survey of the project area; monitoring auger holes, backhoe trenches and evaluation of geologic features in the project area; and production of a report” (Burns and Rooke 2003:2). Three components of the project area were described—the graving dock facility (10.24 acres), the stormwater treatment area (1.20 acres), and staging, parking and access road areas (10.23 acres). The construction of the graving dock is defined as the purpose of the project. This graving dock would include construction impacts in an area measuring 905 feet x 460 feet, with a maximum excavation depth of 25-30 feet. However, most of the construction was stated to be within 4 feet of the ground surface. Activities associated with the graving dock would include installation of sheet piling, piping for fire protection, excavation for the dock and pouring a concrete foundation for the dock floor, measuring 9.55 acre. WSHS defined only the 9.55-acre graving dock footprint as the APE and focused the field investigation in this area. The APE was described as heavily disturbed with areas covered in asphalt and concrete. The original shoreline was characterized as “covered with fill.”

The field survey included a visual inspection of the project area to determine whether any historic properties, including standing structures or objects, would be visually impacted. The subsurface sampling included the removal of nine split spoon augers to a depth of 35 feet and 17 trenches measuring 2 feet (W) x 6 feet (L) x 7 feet (D). The trenches and augers were sampled using a 40 meter grid. A backhoe was provided by WSDOT to excavate the trenches. WSDOT also provided the auger. Additional trenches were excavated to “clarify the sequence of sediment deposition in areas where features or dark organic sediment layers were encountered.” Areas along the southern project limits were not tested due to the presence of asphalt.

The field archaeologist was faced with very wet conditions given the depth of the water table and the season. The auger sampling did not identify historic or prehistoric archaeological materials. However, the field archaeologist noted that limited information could be gained from the saturated sandy and silty sediments, suggesting that recovery was poor using the split spoon and auger. Historic debris or dredged sediments were documented to a maximum depth of 20 feet in the augers. Below 20 feet, gray sand with diffuse shell fragments was noted. The archaeologist did not identify evidence of the “native shoreline or shell midden debris” from the augers. The trenches documented historic debris to a depth of 5 feet, and sometimes deeper than 6 feet. Historic debris in many of these trenches included brick, asphalt, wooden pilings, and buried features. These features were designated as dating to the historic-era and associated with the milling industry.

The survey results did not identify visual impacts to historic properties, nor did it identify subsurface prehistoric or historic archaeological sites. Based on these results, WSHS recommended that the potential for identifying buried archaeological sites was low. Nevertheless, monitoring for any ground disturbing activities below 4 feet was recommended due to the potential for impacting the historically documented Native American villages in the area. No monitoring was recommended for the staging areas, parking areas, access roads and stormwater treatment facilities because their ground disturbing impacts would be less than 4 feet below current surface.

3.4.3.3 Findings

Our findings suggest that project streamlining efforts described in Subsections 3.1 and 3.3 accelerated the consultant’s schedule. In order to complete the SEPA checklist in December 2002, the archaeological findings were necessary for inclusion into this document. The overall testing program and report reflects a lack of attention to important details that may have otherwise been addressed given additional time.

The assumption by WSHS staff that the historic fill was at least 4-feet deep (as demonstrated by the 4-ft depth criterion for archaeological monitoring) along a shoreline demonstrates a lack of understanding of coastal processes in near-shore environments. The surface morphology of the native beach was not level and would not extend parallel to the modern (flat) ground surface unless the shoreline had been leveled prior to the placement of fill. WSHS did eventually recognize that the fill depths varied across the project area. An archaeological evaluation at the Daishowa American Port Angeles Mill, located approximately 1,000 feet west of the Port Angeles project area, demonstrated the potential for native beach deposits to occur at various

depths below historic-era fill in a similar industrial setting (Larson and Lewarch, 1991). Additionally, geotechnical cores that had been collected prior to the archaeological field investigation suggest that black organic soils occurred at various depths throughout the project area and some contained shell fragments. These dark strata could potentially represent “buried soils” that formed at or near a former land surface, and have subsequently been covered by more recent sedimentation. Therefore, buried soils occur within strata “covered by younger sediments and which [may] continue to undergo [some] soil-forming processes” (French 2003:41). Buried soils contain evidence about the evolution of past landscapes and they may also contain evidence of human use of these older landscapes. Recognition of a potential for buried soils at the Port Angeles locale should have dictated a sampling strategy focused on identifying the native soil/historic fill contact and the potential for the buried native soil to contain archaeological materials. Testing protocols for buried soils will be discussed in more detail in Subsection 3.4.6 below. The identification of the potential for buried cultural deposits to occur was particularly important at the graving dock project area because so much historic and ethnographic evidence pointed to that general locale as the location of Tse-whit-zen village. As recently as 1991, Larson and Lewarch (1991:22) documented through oral interviews that contemporary members of the Lower Elwha Klallam Tribe “think of the Ediz Hook cemetery as the ‘big cemetery’ and that it may have been the cemetery for villages other than Tse-whit-zen.”

In addition to incorporating geotechnical data into the sampling strategy, historic data could have been used to identify potential subsurface remnants of buildings and structures. An attempt could have been made either to avoid these features during testing or to assess the amount of disturbance caused by their construction. WSDOT’s Geographic Services maintains historical photograph archives, which contain over 500,000 photographic negatives dating back to the late 1940s. Sanborn Fire Insurance maps depict buildings, structures and utility trenches. Historic plat maps may have also been available for Port Angeles. These documents were not referenced as reviewed resources in the report.

The introduction to the initial archaeological assessment report by Burns and Rooke (2003) states that the investigation would include an evaluation of geologic features in the project area. This type of evaluation might include a description of the landform, the formation processes that shaped the landform, post-depositional processes that affected the landform-sediment assemblage and their potential to contain archaeological deposits. A geologic investigation was not provided in the report and overall, very little geologic data was provided. The Area of Potential Effect (APE) was tested using heavy machinery to excavate trenches and remove split-spoon cores. No soil descriptions are provided, and no trench profiles were drawn and described in the report. The reasons for this absence of such important data may be that an archaeologist conducted the investigation rather than an academically trained professional geoarchaeologist or geomorphologist. To be fair, it should be pointed out that even if a geoarchaeologist performed the investigation, OSHA regulations would have restricted them from working in the trenches, which were approximately 7-feet deep, but only 2-feet wide and without shoring. Given the dimensions of the trenches it would have been difficult to observe the wall profile from outside of the trenches; however, the bucket could have brought select samples to the surface for a closer examination. Further, good sediment recovery appeared to be lacking in the augers.

The report failed to include an explanation of why several trenches and auger tests were not separated by 40 meters as stated in the methods section. The report mentioned that additional trenches were excavated when features were identified, but the number and location of these trenches is not provided in the report. No project plans were included in the document depicting the footprint of the graving dock, the staging and parking areas, access road, stormwater ponds, and piping. The maps depicted the project location on a 7.5-minute topographic map and the trench and auger locations on an aerial photograph. A north arrow and scale are not depicted on the aerial photograph, but the trenches illustrated appear to be relatively large. The trenches appear in slightly different locations on more recent site maps; the report provides no description of how the trenches were mapped.

3.4.3.4 Recommendations

Recommendation No. 12 mentioned in Subsection 3.4.1.1.4 above would have helped this situation assuming that the geoarchaeologist or geomorphologist was used on this project.

Recommendation No. 19: WSDOT should continue to develop deep-site testing protocols to lessen the chances of missing a buried site in the future (See Subsection 3.4.6). This effort is in its infancy at WSDOT and was started after the identification of Tse-whit-zen. We further recommend that 1) a scope of work be carefully developed to complement a project's goals; 2) any techniques and descriptions for trenching or coring, if required for the project, should be described/represented in some standardized way within and between WSDOT projects (e.g., trench profiles and core logs should be drawn in a similar manner, written logs should have standardized terminology, etc.), and these data should be included in reports—preferably as an appendix unless especially important to the report's findings; 3) any specialized studies should be conducted by trained professionals in the necessary field (i.e., landscape evolution should be defined by a geologist/geomorphologist); 4) all pre-field, field and lab methods should be described in a report; 5) all maps in a report should include a scale and north arrow; and 6) the weather conditions, particularly if they impacted the quality of the fieldwork, should be noted. WSDOT's current consultant report requirements are listed in WSDOT's Environmental Procedures Manual M31-11 (2004: 456-9).

3.4.4 WSDOT's Consultation with SHPO and FHWA

3.4.4.1 Criteria

Consultation means “the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process” (36 CFR 800.16). Consultation is an important form of communication within environmental streamlining, which emphasizes the need for interagency cooperation through relationship building and good communication. The balance between preservation issues and project delivery needs through consultation is an important part of the Section 106 process. The best practices by which good communication is maintained among the consulting parties includes meetings to discuss current and future projects, participation in joint training, development of common objectives and processes, and upper management “directives to improve and maintain good relations” (NCHRP Synthesis 347, 2005: 12). One way for agencies

(e.g., DOT, FHWA), the SHPO/THPO, and ACHP to streamline the Section 106 process is to establish a custom-designed compliance process through a programmatic agreement (36 CFR 800.14). A programmatic agreement can accommodate agency needs with the compliance process, allow time and money to be focused on actions that have preservation benefits and can help streamline preservation compliance with other agency activities. Programmatic agreements assist in establishing the procedures and/or protocols for the treatment and management of historic resources and clearly identify who is responsible for each task outlined in the agreement.

This section reviews the ways by which WSDOT consulted with SHPO and FHWA during all phases of the archaeological investigation of the Port Angeles graving dock project. Subsection 3.4.5 addresses government-to-government consultation between WSDOT and the LEKT.

3.4.4.2 Condition—Consultation between WSDOT and SHPO

Before addressing consultation, it is important to define the role of a State Historic Preservation Officer (SHPO) and how these duties relate to the Section 106 process. The “SHPO advises and assists federal agencies in carrying out their Section 106 responsibilities and cooperates with such agencies, local governments and organizations and individuals to ensure that historic properties are taken into consideration at all levels of planning and development” (36 CFR 800.2 (1) (i)). Further, the SHPO “reflects the interests of the State and its citizens in the preservation of their cultural heritage” (36 CFR 800.2 (1) (i)). By definition, Section 106 is an integral part of the environmental review process on transportation projects. Section 106 is the mandate which seeks to balance preservation issues with transportation project delivery needs. In Washington, streamlining in transportation projects was implemented with the passage of the Environmental Permit Streamlining Act (EPSA; Chapter 47.60 RCW) and the creation of TPEAC. Soon after the creation of TPEAC the SHPO requested to be part of the process, but was told by the committee that cultural resources did not impede the streamlining process. Rather natural resources, particularly salmon, slowed the process down considerably. Marginalization of the SHPO in the streamlining process placed historic preservation issues in the background of transportation project development and in transportation decision-making. When the Port Angeles project locale was under consideration for use as the graving dock beginning in June 2002, the SHPO was not consulted by WSDOT. In fact, the SHPO learned of the Port Angeles graving dock project upon review of the assessment report prepared by WSHS. On January 14, 2003, the SHPO concurred with WSDOT’s consultant’s conclusions regarding historic property and recommendations for monitoring at the Port Angeles graving dock. After the discovery of Tse-whit-zen village in August 2003, WSDOT consulted with the SHPO on a regular basis until the work at Tse-whit-zen village stopped in December 2004. At the point of permanent work stoppage, all decisions about pursuing the Port Angeles property for the construction of the graving dock were made by a congressional delegation, Secretary MacDonald, and the Governor (DAHP interview, August 18, 2005) with input from federal and tribal officials. Subsequent archaeological investigations of Tse-whit-zen had been elevated to the political arena as a result of public opinion.

3.4.4.3 Findings— Consultation between WSDOT and SHPO

Consultation between WSDOT and SHPO was extensive throughout most of the HCB project, with the exceptions of 1) during the early graving dock project planning stages and 2) after permanent graving dock work stoppage when consultation was either absent or limited. WSDOT did not consult with the SHPO early in the Port Angeles graving dock project. However after the inadvertent discovery of the Tse-whit-zen village, consultation between the two agencies was frequent as a matter of necessity. Consultation with the SHPO was conducted through in-person meetings, correspondence, and telephone calls. In addition to the advisory role, the SHPO has concurred in the determination of eligibility for Tse-whit-zen and was a signatory to the MOA developed for the Port Angeles project.

3.4.4.4 Recommendations—Consultation between WSDOT and SHPO

Recommendation No. 20: WSDOT should initiate Section 106 consultation early because consultation lies at the core of the Section 106 process. Detailed project information and project changes, such as changes to the APE, need to be submitted to the SHPO as well as tribes, and other federal agencies and stakeholders to maintain an informative dialogue. Meeting minutes should be taken and distributed to the consultants and other stakeholders for eliciting further comments, making corrections, and for future reference should disputes or other needs arise. Communication between public and tribal agencies must occur on a regular basis, project information and concerns need to flow freely between consulting parties, and each tribal and agency representative must work to develop a mutual understanding of the missions, goals, constraints (personnel and financial), and responsibilities of the FHWA, WSDOT, Tribes, SHPO, and other stakeholders as they relate to transportation projects.

3.4.4.5 Condition—Consultation between WSDOT and FHWA

The Washington State division of the FHWA is divided into geographic regions, and each region is responsible for coordination with WSDOT on highway programs. The FHWA's primary duties include contact within each region for project coordination as well as oversight of the environmental process. In June 2000, FHWA signed a Programmatic Agreement with WSDOT, SHPO, and the Advisory Council on Historic Preservation (ACHP) outlining the process by which WSDOT would assist FHWA in meeting its responsibilities for undertakings pursuant to Sections 106 and 110 of the NHPA. FHWA's responsibilities included the initiation of tribal consultation for all projects awarded to WSDOT under the Federal Aid Highway Program; whereas WSDOT's responsibilities included having their consultants and/or cultural resources staff meet the qualifications provided by the Secretary of Interior's Professional Qualifications and Standards for work conducted pursuant to Section 106 of the NHPA. In May 2001, FHWA and WSDOT signed a Stewardship Agreement under the guidance of the procedures set forth in the Transportation Equity Act for the 21st Century (TEA-21). The purpose of the agreement was to revise the "process of program and project oversight and accountability in order to streamline the program delivery process." The responsibilities of both agencies for providing stewardship of the Federal Aid Highway Program were established in this document. Also in May 2001, FHWA delegated the initiation of tribal consultation to WSDOT while maintaining the overall responsibility for government-to-government consultation. At the start of the Port Angeles

project, FHWA and WSDOT had defined roles for consultation responsibilities related to the environmental process, including work conducted pursuant to Section 106 and 110 of the NHPA.

3.4.4.6 Findings— Consultation between WSDOT and FHWA

We found that WSDOT and FHWA developed a cooperative process for streamlining and stewardship of the natural and cultural environments in 2000. This process was outlined in a Programmatic Agreement (PA), which was in place at the time of the November 2002 archaeological assessment. Through our interview process, we learned that the Programmatic Agreement was never reviewed per the agreement stipulations. The agreement states, “All parties to this agreement agree to conduct a review of its effectiveness no earlier than 6 months and no later than 15 months after its initiation. A review may result in mutually agreed upon modifications to the stipulations listed above.” However, the current FHWA-WSDOT Programmatic Agreement (summer/fall 2005) is under review and revision. One of FHWA’s goals for revising the Programmatic Agreement is to address how to deal with previously disturbed sites.

3.4.4.7 Recommendations—Consultation between WSDOT and FHWA

Recommendation No. 21: WSDOT should consider coordinating with the FHWA to revise WSDOT’s Programmatic Agreement to help ensure that FHWA meets its responsibilities for undertakings pursuant to Sections 106 and 110 of the National Historic Preservation Act; and that these changes should include several key stipulations that are based on current best practices promoted by other state DOTs and FHWA divisions. These key stipulations that follow below should not be interpreted to represent the only ones that need to be included in the revised Programmatic Agreement. The main stipulations identified herein include:

- ◆ WSDOT will continue to employ professionally qualified personnel that meet the requirements of 36 CFR 61. These personnel should include at least an archaeologist and a historian, but could also include a geomorphologist, ethnographer, and standing structure specialist.
- ◆ FHWA will coordinate and consult with WSDOT and with SHPO on unique or complex issues related to evaluations, assessment of effect, and data recovery/mitigation very early in the project planning process.
- ◆ All signatories will meet within a specified time (i.e., three, six, twelve months) after the agreement is initially implemented to evaluate its provisions and define ways to improve any unsatisfactory processes. These improvements should be re-evaluated within a specified time from their implementation. Then annual review of the agreement should take place as long as the Programmatic Agreement is in effect.
- ◆ FHWA and WSDOT duties should be explicitly stated for major efforts in the Section 106 process.

- ◆ FHWA and WSDOT should commit to funding innovative programs to facilitate preservation planning. The types of programs that could be included are thematic surveys, deep-site testing protocols, testing at apparently disturbed locations, development of historic contexts, statewide or regional predictive models, or innovative public education programs.
- ◆ Define procedures and those responsible for carrying them out if previously unidentified archaeological or historic/architectural properties are identified during construction on any FHWA-funded projects.
- ◆ Define the procedures if previously unidentified human remains are discovered during archaeological fieldwork or during construction on any FHWA-funded projects.
- ◆ Define roles and responsibilities for tribal consultation.

A limited number of state DOTs are developing extensive Programmatic Agreements with the FHWA, SHPOs and the ACHP in an effort to further streamline the project delivery time. Delaware, Georgia, Wyoming and New Jersey have implemented “minor projects” Programmatic Agreements. These Programmatic Agreements provide a list of DOT activities that have no effect on historic properties. The type of procedural Programmatic Agreements reduces the SHPO workload for the Section 106 review of individual projects. The Pennsylvania DOT has a minor projects Programmatic Agreement, but additionally the Programmatic Agreement allows the DOT’s “qualified professionals” to review certain categories of projects without SHPO or ACHP review. The California DOT’s (Caltrans) Programmatic Agreement delegates review authority to the DOT including the authority to make certain findings such as “no historic properties affected.” The documentation of these findings are made available to all consulting parties including the SHPO. The most extensive Programmatic Agreement, which includes stipulations for project review, making formal findings, and implementing mitigation measures to resolve adverse effects to historic properties, was implemented by the Vermont Transportation Agency (NCHRP 2005:23).

Professional Suggestion J: WSDOT’s long-term goal could be to work collaboratively with FHWA and SHPO toward developing a Programmatic Agreement with similar review authority and perhaps allowing WSDOT’s in-house experts to manage much of the Section 106 process. The previous Programmatic Agreement between WSDOT, FHWA and SHPO defined minor projects that were exempt from Section 106 review including certain types of previously disturbed locales (http://www.wsdot.wa.gov/environment/compliance/docs/MOA_ProgrammaticSection106.pdf). In order for WSDOT’s in-house experts to manage the Section 106 process, personnel with expertise in several disciplines would be necessary to create a team with greater cumulative expertise than either the SHPO or other consulting agencies or parties. The necessary expertise must include prehistoric and historic archaeology, history, and standing structures; and should include archaeological geology and ethnography. The latter two disciplines could be outsourced to consultants on an as needed basis. The programmatic agreement should explicitly state that the FHWA, to the extent possible under the federal law, has delegated its responsibilities for compliance with Section 106 to the professionally qualified

staff of the Cultural Resources Program at WSDOT. Further, the programmatic agreement should indicate that the FHWA remains legally responsible for all findings and determinations mandated in 36CFR800 to the agency official.

Collaborative “brainstorming” sessions between the WSDOT, FHWA and SHPO could provide the agencies the opportunity to develop and implement a Programmatic Agreement that addresses the State’s transportation streamlining goals. In lieu of such collaborative meetings we suggest that WSDOT’s in-house experts could participate in a “trial period” with the SHPO (and possibly a THPO), which allows the SHPO to provide input to the WSDOT expert(s) on their Section 106 duties. Tribal and local governments’ comments should be sought for instituting this type of Programmatic Agreement because of the challenges that have arisen as a result of the Port Angeles project. After this trial time period, the SHPO could agree to give up formal project-by-project consultation in exchange for an annual or biannual report that lists the year’s projects and their findings of effect. One of the stipulations of the Programmatic Agreement should be to allow the SHPO to reclaim project-by-project Section 106 review if in their opinion the WSDOT Cultural Resources Program has lowered their standards, failed to implement the stipulations of the Programmatic Agreement, or has failed in some way to meet the spirit of the Section 106 review process. The key to the effectiveness of the Section 106 streamlining process requires that the WSDOT Cultural Resources Program team promote and retain highly professional ethics and expertise, and that these experts have a clear understanding that their Section 106 duties are for the FHWA (lead federal agency) and not for WSDOT (despite their salaries possibly coming via WSDOT). The reference above to a “long-term streamlining goal” is because of our perceived need for a “cultural change” within WSDOT’s upper and middle management to include Section 106 as an important and ethical process of WSDOT’s construction business. Foth & Van Dyke’s own experience with our cultural changes indicate that considerable time is needed to effect such a change. It is necessary for WSDOT to develop/maintain a trust relationship with tribes and local governments. Perhaps trust would be further fostered if the WSDOT Cultural Resources Program staff is housed at the DAHP where WSDOT’s influence and potential pressure from design and construction staff would be tempered. Ideally smaller projects would fall under WSDOT’s list of Section 106 review authority. WSDOT’s Cultural Resources Program would require regular review (2 to 3 month review intervals is a current practice for other state DOT’s). If these reviews are favorable and trust between the SHPO and WSDOT Cultural Resources Program staff develops, large projects could be included under WSDOT’s Section 106 review authority.

If this plan is paired with a proactive consultative approach with tribes (see Subsections 3.4.5.1-3.4.5.4 below) and other potential Section 106 stakeholders, then a sense of professional trust could grow and the cumulative Section 106 project time lines may be reduced considerably. The SHPO’s annual workload would also see a substantial reduction. Foth & Van Dyke’s current project review did not evaluate in detail the current team of WSDOT’s CRP specialists, and we would recommend that this task be completed prior to amending the Programmatic Agreement to allow for expanded review authority.

A more “short-term” form of streamlining could follow the Idaho DOT’s lead. The Idaho DOT has funded one staff position at their SHPO to focus on and expedite the transportation project

reviews. Other DOT's such as Caltrans have allowed their employees to work at the SHPO office for the purpose of reviewing other agencies' projects or for Caltrans projects that are located outside of the reviewer's transportation district (NCHRP 2005: 18-19). In Arkansas, a Memorandum of Agreement between the DOT, FHWA and SHPO established a SHPO review position, which is not responsible for reviewing DOT projects. The types of review positions exemplified by Idaho, California and Arkansas were created to minimize conflicts of interest between the transportation agencies and SHPO and have effectively allowed inter-agency relationships to develop.

3.4.5 WSDOT's Consultation with the Lower Elwha Klallam Tribe

3.4.5.1 Criteria

The following section briefly details the legal mandates for consultation relevant to the Port Angeles Graving Dock project.

Native American tribes are sovereign nations recognized by the federal government. Within the historic preservation process, tribes have a special relationship with the federal government and its agencies due to their constitutional and legal recognition as domestic, dependent nations. As such, federal agencies have a legal obligation to consult with Native American tribes under several Federal mandates including Section 101 and Section 110 of the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), EO 12785 Tribal Governance (1993), EO 12898 Environmental Justice (1994), EO 13007 Sacred Sites (1996), EO 13084 Consultation and Coordination with Indian Tribal Governments (1998), EO 13175 Consultation with Indian Tribal Governments, and an Executive Memorandum Government-to-Government Relationship with Tribal Governments (1994).

In light of several Executive Orders and Memoranda and Statutes, some of which are mentioned above, the U.S. Department of Transportation enacted Order 5301.1 on November 16, 1999, with the purpose of ensuring that "programs, policies and procedures administered by the Department of Transportation are responsive to the needs and concerns of American Indians, Alaskan Natives, and tribes." Order 5301.1 emphasized the ONE DOT management strategy "that builds on the strength of mutual collaboration between various agencies and functional 'communities of interest' when those cross-cutting efforts reduce duplication and save resources" (<http://www.tfhr.gov/pubrds/janfeb99/onedot.htm>). The ONE DOT management strategy is envisioned to facilitate communication allowing DOT to speak with one voice regarding Native American transportation concerns. One DOT office was designated to facilitate effective implementation of the requirements of this Order. The goals of this designated office were to improve communication between the tribes and DOT and to educate DOT employees about the American Indian and Alaskan Native tribal laws, cultures and traditions; to seek tribal involvement in transportation decision-making; and to foster partnerships among the tribes, states and local governments.

Unlike the federal government, states generally lack jurisdiction over tribes on reservations and tribal lands. However, as interaction between tribes and states increases many state governments

have implemented policies for tribal consultation. In 1989, ten years before DOT Order 5301.1 was enacted, the state of Washington executed the *Centennial Accord between Federally Recognized Indian Tribes in Washington State and the state of Washington*. The Governor and 28 federally recognized tribes signed the accord. The goal of the Accord was to improve the relationship between the state and its sovereign nations in order to achieve mutual goals by providing the framework and an outline of procedures to achieve these goals. The Accord required that the director of each state agency develop a procedure within her/his agency to implement the government-to-government policy. Clear, direct communication between the governments was necessary in order to address mutual concerns. In order to achieve clear communication, the Centennial Accord stipulated that each state agency was to respect the government-to-government relationship and to “establish a documented plan of accountability.” In return the tribes were expected to “ensure that its current tribal organization, decision-making process and relevant tribal personnel is known to each state agency with which the tribe is addressing an issue of mutual concern.”

In 1999, the same year that DOT Order 5301.1 was enacted, several signatories of the Centennial Accord held a summit to discuss ways to strengthen State/Tribal government-to-government relationships. The summit was coordinated through the Governor’s Office of Indian Affairs, and the outcome of this summit was the signing of the *New Millennium Agreement* in 1999. The *New Millennium Agreement* attempts to build on the policies set forth in the *Centennial Accord* by providing “implementation guidelines” for state agencies and tribes to follow (<http://www.goia.wa.gov/Government-to-Government/Data/guidelines.htm>). The New Millennium Agreement set forth principles for successful state/tribal consultation and dispute resolution as well as directing each state agency to implement its own Centennial Accord Plan.

In February 2003, EO E1025.00 was promulgated by the WSDOT in order to “create durable intergovernmental relationships that promote coordinated transportation partnerships in service to all of our citizens.” Executive Order E1025.00 directs all WSDOT employees to enter tribal consultation with tribes who have ancestral homelands within the state of Washington, which includes some tribes with reservations outside of the State. Consultation is “hoped to go beyond issue-specific consultation.”

Finally, Governor Christine Gregoire proclaimed on April 28, 2005, that the state of Washington “... *Recommits to the principles and resolutions of the New Millennium Agreement, and Resolves to move forward with the federally recognized Tribes in a positive and constructive relationship that will help us fairly and effectively resolve any differences to achieve our mutual goals.*”

Tribal consultation plays a crucial role in the Section 106 process as mandated by the NHPA. As amended in 1992, the NHPA made government-to-government consultation a *process* that involves tribes as *partners*. The NHPA also mandates that federal agency officials are ultimately responsible for ensuring proper consultation with tribes. Because consultation is central to this process, we will present three definitions most pertinent to the archaeological investigations at the Port Angeles graving dock. The first is used in the Section 106 process (36 CFR 800.15). The second was defined by the WSDOT in EO 1025.00 for the purpose of consultation between WSDOT and tribes with homelands in the State. The third was defined by the U.S. Department

of Transportation in Order 5301.1 to ensure that the transportation needs and concerns of American Indians, Alaska Natives, and tribes are met.

- ◆ *Consultation means the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process (36 CFR 800.15).*
- ◆ *Consultation means respectful, effective communication in a cooperative process that works toward a consensus, before a decision is made or an action is taken. (EO E1025.00).*
- ◆ *Consultation refers to meaningful and timely discussion in an understandable language with tribal governments during the development of regulations, policies, programs, plans, or matters that significantly or uniquely affect federally recognized American Indian and Alaska Native tribes and their governments.*

Consultation with tribes is required to address preservation issues on historic properties of religious and/or cultural significance located on or off tribal lands. Within the Section 106 process, consultation “should commence early in the planning process [before the project begins], in order to identify and discuss relevant preservation issues and resolve concerns about the confidentiality of information on historic properties” (36 CFR 800.2). These definitions and practices highlight a number of important aspects of consultation under Section 106, including 1) consultation is a process, not a one-time event, and should begin early in the project planning stages and continue throughout the project; 2) consultation involves both obtaining and providing information; and 3) tribes need to be involved in the decision-making process.

The obvious reason for which federal agencies consult with tribes in the Section 106 process is to comply with federal laws, but it is often described as “the right thing to do” (NATHPO 2005:11). Consultation allows a federal agency to acquire information not held by the agency, collect sufficient information to make an informed decision concerning the impact of their actions on the cultural environment, to facilitate an open and collaborative process and to develop relationships based on trust. These relationships can then facilitate future projects. If the consultation process is followed in the true spirit of collaboration with the understanding that it is more than just a requirement, then efforts can be made to institutionalize the process and replicate it over time (NATHPO 2005: 2). One way to institutionalize the process is through the development of a Programmatic Agreement.

In 2002, when the Port Angeles property became a potential locale for the construction of the graving dock, the current best practices for consultation could be found in many publications written by archaeologists with federal, state, academic and private consulting backgrounds as well as Native American authors who worked in tribal preservation departments (Swidler 2000; Spivey 2000; McManamon 1997; Ruppert 1997; McKeown 1997a and 1997b). A comprehensive set of consultation guidelines was produced by the National Environmental Justice Advisory Council (NEJAC) in 2000. These guidelines are entitled, *Guide on Consultation and Collaboration with Indian Tribal Governments and the Public Participation of*

Indigenous Groups and Tribal Members in Environmental Decision-making. The NEJAC Guide highlights the need for effective consultation between federal agencies and American Indian and Native Alaska Tribal governments. The Guide was intended to be “used as a general resource for all people and government agencies – whether federal, tribal, state or local” (NEJAC 2000:3). Some of the primary principles for effective consultation, derived from the NEJAC Guide and other cultural resource publications, include:

- ◆ *Contact tribes early; don’t assume that no response means that a tribe has no interest in the matter.*
- ◆ *Before consultation begins, know the tribes within an agency’s jurisdiction who claim historical, cultural or religious relationships within the agency’s jurisdiction.*
- ◆ *Consultation is more constructive if it is conducted within the framework of ongoing relationships.*
- ◆ *Consultation should be a two-way-dialogue that provides meaningful involvement in decision-making; the dialogue should be open and honest and should provide all information necessary for the tribes to make informed decisions.*
- ◆ *Agencies should work with tribes to develop formal consultation policies; institutionalize consultation policies.*
- ◆ *Establish training programs on consultation with tribes; agency staff should be clear on the agency’s policies and procedures.*
- ◆ *Tribal concerns should be acknowledged and recorded.*
- ◆ *Be aware that tribes are culturally and administratively different from each other.*
- ◆ *Understand that some information provided by tribes during consultation is sensitive and may require the agency to maintain confidentiality.*
- ◆ *Agency individuals should be of comparable stature to tribal leaders during consultation.*
- ◆ *Provide funding for tribal participation.*

The NEJAC Guide as well as other publications offered the following cautionary items:

- ◆ *The agency should not rely on reservation boundary maps and census records to identify tribes with the jurisdiction area as these may not accurately reflect all of the tribes with an interest in the area.*
- ◆ *Consultation can be contrasted with notification. Notification focuses on providing information for the purpose of a response to a proposed action. Notification often*

happens after basic decisions have been made. Notification does not satisfy the letter or spirit of the laws that mandate consultation.

- ◆ *Given the history of interactions between federal and tribal governments, agencies “should be cognizant that some tribal governments may well enter consultations questioning whether their participation will be meaningful” (NEJAC 2000).*
- ◆ *Information meetings for tribal audiences may piggy-back meetings for larger audiences, however this “should not be used to replace separate agency meetings with tribal leadership, which is an essential element of consultation” (NEJAC 2000).*

Based on the legal definitions of consultation and the best practices identified above, successful consultation may be described as knowledgeable persons, aware of the legal requirements and cultural diversity, respectfully working together toward mutual goals based on shared data that allow informed consensus to be reached.

King (1998:114) illustrates different aspects of consultation under Section 106 of the NHPA. The first aspect of consultation is discussed above and includes early initiation of consultation, including relationship building prior to an undertaking, and informed dialogue throughout the Section 106 process (36 CFR 800.3). The second aspect of consultation ensues after it has been determined that an undertaking will have an adverse effect on a National Register eligible property (36 CFR 800.5). In this instance, Section 106 specifies stakeholders that must be consulted in the effort to resolve adverse effects. The federal agency must consult with the SHPO/THPO as well as notify the ACHP. Additionally the agency may consult with Native American tribes and Native Hawaiian organizations, local governments, and members of the public. Consultation for the resolution of adverse effects often results in drafting a Memorandum of Agreement (MOA). The MOA is a document intended to specifically state the strategies that the stakeholders have agreed upon and that the agency will implement to avoid, minimize or mitigate adverse effects. If this consultation is unsuccessful, the agency, SHPO, THPO, or the ACHP can terminate consultation. In principle, all aspects of consultation are the same regardless of whether consultation occurs during the early stages of project planning or after an MOA has been signed and mitigation is underway.

A recent survey on the best practices in historic preservation conducted by the National Association of Tribal Historic Preservation Officers (NATHPO 2005) was published after permanent work stoppage at the Tse-whit-zen village site. Nevertheless, examples will be drawn from this publication to highlight practices WSDOT might consider for future government-to-government consultation. It should be noted that many of the best practices presented by NATHPO have considerable overlap with earlier publications referenced above.

The National Association of Tribal Historic Preservation Officers (NATHPO 2005) states that mutual respect, trust and understanding of each others priorities are basic building blocks of consultation. Current best practices also view consultation as more than an obligation, it is an *opportunity* which can “conserve time and financial resources and achieve mutual goals” (NATHPO 2005: 5). Consultation with tribes is required to address preservation issues on

historic properties of religious and/or cultural significance located on or off tribal lands. Because consultation is not a one-time event, it should continue through the project development phase and should occur before making major decisions.

The NATHPO survey (2005) identified the following practices to achieve successful consultation:

- ◆ Employment of a Tribal Liaison by the agency,
- ◆ Tribe maintains a THPO ,
- ◆ Training on cultural sensitivity and dispute resolution skills for tribal members and agency employees,
- ◆ Early consultation in the planning process,
- ◆ Consultation occurs at mutually convenient locations to show respect and consideration,
- ◆ Tribe is provided with project information before consultation meeting,
- ◆ Agency provides funding for tribal members to attend face-to-face meetings ,
- ◆ Establishing a positive relationship and open communication between the Agency and the tribe, and
- ◆ Consensus in the decision-making process.

One item that could be added to this list is the maintenance of ongoing non-project related communication between the tribe and the agency. Non-project related communication can result in long-term benefits (NCHRP 2005: 16). Many state DOTs organize tribal summits and conferences as strategies to improve communication with tribes outside of specific projects. Other state DOTs support technical training programs and workshops for tribes as well as the public.

Finally, the National Association of Tribal Historic Preservation Officers survey (2005) identified the following cautionary items:

- ◆ Agency letters may not be seen by a tribe as consultation,
- ◆ Agencies should not assume that no tribal response to a letter is acquiescence, and
- ◆ Tribal agreement may not be a sign of successful consultation if the tribe believed they had no other options.

3.4.5.2 Condition

The conditions discussed in this section focus on consultation with the Lower Elwha Klallam Tribe under the mandates of Section 106 only for the Port Angeles Graving Dock project. It is recognized that WSDOT initiated Section 106 consultation with the Skokomish, Suquamish, and the Port Gamble S'Klallam tribes in July 2000 for the west half retrofit and the east half replacement of the Hood Canal Bridge. The consultation process for the Hood Canal Bridge replacement addressed traditional cultural properties (TCPs) in the passing lanes and near the ferry services (October 2001) as well as impacts to the Port Gamble National Historic Landmark (February 2002). Further, it is recognized that invitations to participate on the Hood Canal Bridge Interdisciplinary Team (HCB IDT) were extended by the Team to the Skokomish, Jamestown S'Klallam, Port Gamble S'Klallam, and the Lower Elwha Klallam tribes. However, tribal participation in the HCB IDT could not have replaced consultation achieved through separate meetings between the agency (or its representatives) and tribal leadership to discuss the proposed Port Angeles undertaking under the mandates of the National Historic Preservation Act and its implementing regulations. The HCB IDT was established for the purpose of "Achiev[ing] all project permits by November 2002 using the flexibilities and innovations envisioned within ESB 6188 and the 7-Step Pilot Permitting Process Developed by the One-Stop Permitting Subcommittee" (Team Charter for the Hood Canal bridge Interdisciplinary Team April 25, 2002, FVD1559). In an e-mail dated December 12, 2002, from LaTrisha Suggs of the LEKT to Randy Neff of WSDOT (FVD2203), Ms. Suggs declines an invitation to participate in the HCB IDT because "the Tribe is concerned about Cultural resources that may be found and how will it be mitigated, and of course the environmental impacts." Ms. Suggs does not indicate a tribal interest in the permitting process, which was the focus of the IDT. Based on the description of the interdisciplinary team, it seems unlikely that the permitting process, while important to the success of the bridge replacement, represents all or even most *matters arising in the Section 106 process* (36 CFR 800.15) regarding the effects of undertakings on historic properties.

The Port Angeles property was brought to WSDOT's attention by a Port Angeles City Council member as a potential location for construction of the graving dock in June 2002. On October 21, 2002, WSDOT's Environmental Services Office (ESO) requested a scope of work from an on-call consultant to perform an archaeological survey on the property. On that same day, a Section 106 tribal consultation form letter was sent to the chairperson of the Lower Elwha Klallam Tribe to initiate consultation. This letter described a transportation need in Clallam County to replace the east half of the Hood Canal Bridge beginning in spring 2003 and ending in 2007. The Port Angeles property would be used for "the construction of a manufacturing facility (graving dock) for the pontoons and anchors for the bridge replacement project. This facility would need to be constructed immediately." WSDOT indicated that FHWA delegated the initiation of tribal consultation in the Section 106 process to them and attached a one-page document describing the "Purpose and Scope of Consultation." WSDOT closed the letter with a request for response by November 23, 2002, to discuss the undertaking and the area of potential effect. The names, telephone numbers and e-mail address of both the project manager and cultural resources manager were provided. Enclosed were two maps, including a general vicinity map and a map with the proposed staging area for the bridge pontoons highlighted. By the end of October 2002, WSDOT sent Section 106 consultation form letters for the Port Angeles graving dock facility to the Makah, Suquamish, Skokomish, Port Gamble S'Klallam, and the

Jamestown S'Klallam tribes. The LEKT did not respond to the Section 106 consultation letter. The next communication from WSDOT to the LEKT, dealing specifically with the Section 106 process at the Port Angeles locale, occurred in January 2003. WSDOT personnel telephoned the LEKT to determine who was supposed to receive the archaeological report describing the results of the initial assessment conducted in November 2002. On January 13, 2003, a letter regarding Section 106 consultation for the Port Angeles graving dock facility was sent to the LEKT. This letter announced that the on-call archaeological consultant had completed the survey of the property and had prepared a report, which was enclosed with the letter. The project area was described briefly as:

“...21.67 acres. Within this area the footprint of the graving yard facility is approximately 9.55 acres. The remainder of the site will be used for stormwater treatment, staging areas, parking and access roads. The Area of Potential Effect (APE) has been determined to be the 905 foot by 460 foot graving dock area (9.55 acres) which will be excavated during construction.”

WSDOT reported that no historic or archaeological resources had been discovered and that no National Register eligible properties would be affected. WSDOT would prepare a monitoring plan to ensure that cultural materials not identified during the initial investigation would be recorded if found during construction. Comments were welcomed. The LEKT responded with a letter on February 5, 2003, agreeing with the findings and recommended that the project proceed with caution because of the historically known Klallam village, Tse-whit-zen, near the project area.

In April 2003, WSHS developed a monitoring plan which stipulated that the staging, parking, access roads and stormwater treatment plans would not require monitoring. Monitoring by a federally qualified archaeologist was recommended only during the construction of the graving dock “in those areas where excavations will exceed 4 feet in depth.” During the removal of overburden by the construction contractors in August 2003, a concrete footing was encountered that extended deeper than 4 feet. When the footing was removed, a WSDOT employee noticed the presence of shell and contacted WSHS. After the shell was identified as a cultural deposit, the LEKT, SHPO, FHWA, and USACE were notified. At this point, communication with the LEKT began in earnest. The nature of this communication as viewed by various stakeholders in this project was expressed in introductory meetings with personnel from Foth & Van Dyke, individual interviews, published statements, video recordings, and written correspondence.

3.4.5.3 Findings

When the Port Angeles Graving Dock location was brought to the attention of WSDOT, the federal and state positions on tribal consultation as discussed in Subsection 3.4.5.1 were largely in place prior to when the Port Angeles graving dock project began. Only Executive Order E1025.00, which was effective February 2003, approximately six months before Tse-whit-zen was identified, and Governor Gregoire’s statement on April 28, 2005, had not been enacted. In this section we address the extent to which WSDOT’s execution of the Port Angeles Graving Dock project was consistent with the state and federal positions on tribal consultation. This discussion focuses on the following four aspects of successful consultation. These are: 1) early

consultation, 2) providing project information, 3) holding consultation meetings at appropriate meeting locations and providing travel funding, and 4) establishing positive relationships and developing consensus.

Early Consultation. WSDOT recognized the need for the early initiation of consultation, and at our performance audit meeting held at WSDOT's office located in Olympia on June 21, 2005, WSDOT personnel indicated that the Section 106 process began late in the HCB graving dock project (Meeting Minutes). WSDOT did not translate federal mandates, particularly those found in Sections 101 and 110 of the National Historic Preservation Act, into action effectively during the *early* planning stages of June 2002 when the Port Angeles property was suggested as a possible graving dock location to the HCB IDT. Consultation at this time was also hampered by poor information about tribal groups with interest in the project area. When WSDOT's manager for the Port Angeles Graving Dock archaeology was asked how he had identified the tribes with whom WSDOT would consult for Section 106 purposes on that project, he explicitly stated that the starting point was a review of the "usual and accustomed areas" (U&A) maps housed at the Governor's Office of Indian Affairs. However, we found that WSDOT's cartographers had developed those maps, which included treaty boundaries and current reservation boundaries. These maps are available on WSDOT ftp webpage (<FTP://FTP.wsdot.wa.gov/public/cartography/Indian>). We further discovered that WSDOT's current *Environmental Procedures Manual M 31-11* (2005: 530-2) refers WSDOT employees to the Environmental Services Office Tribal Liaison for the location of "Usual and Accustomed" areas and "Areas of Cultural Interest" maps. The use of such maps as a primary source for identifying tribes within an agency's jurisdiction is not recommended by the NEJAC Guide "since these may not accurately reflect all tribes that have interests in a particular area" (NEJAC 2000: 16).

Furthermore, at an introductory meeting with Foth & Van Dyke on June 21, 2005, in WSDOT's Olympia office, WSDOT representatives indicated that the government-to-government (WSDOT to LEKT) consultation was problematic from the outset because WSDOT did not fully understand how community input/feedback affected decisions put forth by the business committee of the LEKT (Foth & Van Dyke meeting minutes, June 21, 2005). To facilitate future government-to-government consultation, WSDOT may wish to request copies of the tribal constitutions, either from the U.S. Department of Interior Bureau of Indian Affairs (BIA), or directly from the tribes who have an interest in Washington.

Foth & Van Dyke requested a copy of the *Constitution and Bylaws of the Lower Elwha Tribal Community of the Lower Elwha Reservation, Washington* from the Department of the Interior's Bureau of Indian Affairs Northwest Regional Office. Our review of the Lower Elwha Tribal Constitution, adopted in 1968, describes the governing body of the Lower Elwha Tribal Community as the "Lower Elwha Tribal Community Council, which is composed of all qualified voters of the community" (Article III, Section 1).

The community council elects the chairman, vice chairman and the secretary-treasurer, who are known as the business committee (Article III, Section 2). The business committee is "given authority to appoint committees which may be deemed necessary and shall perform such other duties as may be authorized by the council" (Article III, Section 3).

Under Article IV, Section 1(a), the Lower Elwha Tribal Community Council, not the business committee, holds the power to “consult, negotiate, contract, or conclude agreements with federal, state, and local governments, and others on behalf of the community and to advise and consult with their representatives.

The business committee would not be empowered to make decisions about the Port Angeles Graving Dock project unless the authority had been specifically delegated by the Community Council. Because we do not have access to LEKT records, we cannot conclude that this delegation ever took place.

WSDOT’s commitment to the use of Port Angeles for the construction of a graving dock was solidified over the course of almost five months, from its introduction to the HCB IDT on June 20, 2002 to the completion of the Archaeological Assessment fieldwork on November 15, 2002 (Burns and Rooke 2003). Although LEKT members may have read about the graving dock project in public announcements published in local newspapers, minimal direct contact occurred between WSDOT and LEKT during that time period. According to the NEJAC Guide (2000) of best practices this type of written public announcement is not considered to be consultation under Section 106, but rather notification. On October 21, 2002 WSDOT sent a letter to the Tribe with the intent of initiating consultation and introducing the Port Angeles project. This letter introducing the project was sent to the tribal chair the very same day the request for a scope of work was sent to the on-call archaeological consultant. This type of “consultation” appears to be notification of proposed actions after basic decisions have been made rather than *the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement [consensus] with them regarding matters arising in the Section 106 process* (36 CFR 800.15).

Provide Project Information. WSDOT did not provide the LEKT with an adequate description of the project APE in the letter written to initiate formal Section 106 consultation dated October 21, 2002. The vertical and horizontal dimensions of the graving dock, the depth of installation for the sheet piling, the location of the on-site stormwater ponds, and a description of access roads and staging areas were not defined in the October 21, 2002, or in the January 13, 2003, letters from WSDOT to the LEKT. After the completion of the first archaeological assessment in November 2002, two major changes were made to the APE, including a 5-10 degree counterclockwise rotation of the graving dock alignment and the need for the construction of bioswales and a drainage system. We found no documentation to verify how the LEKT was notified of the changes to the graving dock alignment. A letter dated November 6, 2003, from FHWA to the LEKT addressed changes that were made to the monitoring plan for the bioswales and drainage system. These changes were the result of a consultative meeting that occurred on November 5, 2003, at the LEKT Tribal Center.

After Tse-whit-zen was identified in August 2003, our interviews suggest that tribal involvement in the project became more frequent. Nevertheless, a constant flow of information between WSDOT and the LEKT was not always achieved to the tribe’s satisfaction. A letter written by the Advisory Council on Historic Preservation, dated December 14, 2004, also commented on a lack of project documentation available for the consulting parties. Without this information,

informed decisions could not be made by the LEKT. Formal written requests were made by the tribe for data on WSHS's monitoring activities including field forms, profiles, sediment descriptions and the geoarchaeological (3-D) model. These data provide a picture of the 3-D relationship among the cultural and environmental features at the site. Without this information an accurate interpretation of the site and how it was investigated are difficult to obtain. We are unsure whether the tribe received all of the data requested. Additionally, interviews and written correspondence have shown that LAAS and SHPO also made similar requests at different times during the archaeological investigations with limited success. Foth & Van Dyke requested a two-dimensional paper plot depicting the vertical and horizontal distribution of trenches, cores, excavation units, archaeological features and artifacts. Unfortunately, Foth & Van Dyke was informed by WSDOT that the software used to develop this three-dimensional map of the archaeological site is very expensive and the output does not easily transfer to a two-dimensional paper plot. Foth & Van Dyke never received this map.

Consultation Meetings, Meeting Locations, and Funding. Many formal and informal consultation meetings were held after Tse-whit-zen was identified in August 2003 as mentioned in Subsection 3.4.1.3.2. Informal meetings often occurred at the village site at the end of a work day and funding for attendance was not necessary. The formal meetings on the other hand were held in LEKT tribal buildings or agencies' (e.g., WSDOT) offices in Olympia. The locations were not necessarily a midway point for travelers, but they did accommodate at least a portion of the attendees. The frequency of meetings held in Port Angeles and in Olympia is unknown, but all parties appeared to show a willingness to travel. Funding was available for these meetings after a Declaration of Emergency was signed by the WSDOT Olympic Region on August 29, 2003 (FVD0040). WSDOT provided "interim funding in the amount of \$30,000 to reimburse the Elwha Klallam Tribe for expenses incurred in providing emergency response to archaeological discoveries during excavation at the graving dock site until a formal participating agreement is negotiated and executed" (FVD0040).

Our interviews suggest that face-to-face formal meetings occurred very frequently, but detailed notes were rarely taken. These meetings were supposed to set the stage for the exchange of important project information and they had the potential to be extremely useful, but due to the complicated and technical nature of the subject matter, all sides appear to have interpreted the topics and nature of discussion very differently. Without a record of what took place at meetings, it would have been difficult for the consulting parties to return to what was said about specific topics and pursue further consultation to resolve problems. Because meeting minutes are virtually nonexistent, Foth & Van Dyke reviewed written correspondence between the consulting parties that made reference to prior meetings as well as action items. Foth & Van Dyke also relied on our oral interviews to understand the nature of government-to-government communication. We found that WSDOT and the LEKT had divergent opinions about the nature of consultation throughout the graving dock project.

WSDOT staff indicated that, in retrospect, there could not have been better consultation with the tribe after the site was identified in August 2003. Apparently, weekly meetings of long duration were held with the LEKT on how to proceed at Tse-whit-zen. At Foth & Van Dyke's performance audit meeting at WSDOT's Olympia office on June 21, 2005, WSDOT personnel

stated that they formed friendships with many tribal members because they met so often to discuss the graving dock project. In later interviews conducted by Foth & Van Dyke with FHWA's Environmental Program Manager, this manager stated that all parties were working through the project in good faith to resolve issues and to do the right thing. The owner of LAAS indicated that she was not invited to most meetings that occurred outside of the field after April 2004.

Foth & Van Dyke's only meeting with the LEKT resulted in a very different picture of how the government-to-government consultation meetings proceeded. The tribal view presented is based upon this single interview with the tribe as well as the review of source documents provided by WSDOT and the DAHP. Foth & Van Dyke was unable to have the tribe review this report to verify the following interpretation due to the lawsuit filed by the LEKT in August 2005.

During our performance audit interview on June 23, 2005, members of the LEKT business committee, including a councilman, vice chairman, and secretary/treasurer, stated that the consultation process was problematic from the outset and that WSDOT made several mistakes throughout the project. Initiation of the consultation process through a letter is not viewed by the tribe as an ideal form of communication. The tribal members we spoke to believed that the consultation process should have been initiated with face-to-face contact. Additionally, the tribe believes that the Makah and Port Gamble Klallam were contacted about the graving dock before the Lower Elwha received the letter from WSDOT in October 2002. Foth & Van Dyke found that two different form letters were sent to several tribes on two dates in October. On October 21, 2002, WSDOT sent the same letter to the LEKT and the Makah tribe; this letter was described in Subsection 3.4.5.2 and will not be repeated here. The second, less descriptive consultation letter was sent to the Port Gamble S'Klallam, Skokomish, Suquamish, Jamestown S'Kallum [as spelled on letter] tribes by WSDOT on October 30, 2002. The letter dated October 30, 2002, notifies the tribes that WSDOT is conducting a cultural resource study. The letter also states that "The exact location [of the graving dock] has not been determined, but the parcel of land that could accommodate this facility is ... described ... as: the area bordering Port Angeles Harbor north of Marine Drive between Hill St. and the Daishowa America mill." A map was attached to the letter and information regarding traditional cultural areas was requested. Tribal input was described as "vital for FHWA & WSDOT to conduct meaningful consultation with the Tribe." Unlike the letters dated October 21, 2002, the letters dated October 30, 2002, were not introduced as the initiation of formal consultation pursuant to 36 CFR 800.2(c)(4) nor was a date indicated by which WSDOT expected a response. We further found information in the HCB Project Delivery Team meeting notes dated April 15, 2002, that suggest that the Makah Tribe was aware of the need to find a construction site for the graving dock. These notes state that "Patrick and John will be traveling to Neah Bay to give a presentation to the new tribal council. The Makah tribe is still very interested in building a graving dock" (FVD1420). It is unclear how the Makah learned of the necessity to construct a graving dock. We are also unaware of verbal contact that may have occurred prior to the letters sent in October with these tribes. When face-to-face meetings occurred (after August 25, 2003) the LEKT perception was that WSDOT was unorganized (perhaps because the tribe frequently did not receive an agenda or information in advance) and had no clear protocol for consultation. Data requests were made by the tribe, including a request for GIS layers of archaeological deposits and burials, the

geoarchaeological interpretation of the site (3-D geomorphic model), and ethnographic data for the Port Angeles locale. The tribe stated that WSDOT did not provide these data and as late as August 2004, the tribe continued to send letters to WSDOT to request this same information. Finally, the tribe believed there was posturing throughout many of the meetings and that WSDOT made “well-padded” threats throughout the consultation process including:

- ◆ WSDOT didn’t have to employ tribal members,
- ◆ Congressional delegation could let the project go through for the benefit of the greater community, and
- ◆ Project could go on even if the MOA was not signed.

Positive Relationship and Consensus. Open communication is one of the best practices offered by NEJAC (2000) to achieve successful consultation. However, it is cautioned for future government-to-government consultation that reaching consensus through open communication does not necessarily indicate successful consultation if tribal agreement resulted from a perception that they had “no other option” (NATHPO 2005: 34). We will provide statements found in letters that attempt to illustrate the nature of the communication from the tribal perspective.

After the second site assessment by WSHS in September-October 2003, as the MOA was being developed, the LEKT wrote to the FHWA requesting more effective communication with the agency. The tribe asked the FHWA to request numerous items from WSDOT on the tribe’s behalf (archaeological maps and notes, resumes of all personnel working on project, elevations of archaeological deposits, stratigraphic profile drawings, and core and trench locations). In this letter the LEKT states that the option to avoid or minimize adverse effects to the village site had long passed. Mitigation in the rest of the APE was seen by the tribe as appropriate and one of the only remaining options.

The MOA was signed in March 2004, and it stipulated that an amendment could be made if a signatory believed change was necessary. An amendment would be executed in the same manner as the original MOA. Further, the MOA stipulations allowed any of the agreement signatories to invoke a dispute resolution in writing. It was not until December 10, 2004, that the tribe formally requested in writing that all work at Tse-whit-zen cease permanently. Before the December 10 letter, the LEKT had requested temporary work stoppages. In order to comply with the stipulations of the MOA, the FHWA was required to consult with the tribe to resolve any objections. If the objections could not be resolved, then FHWA would be obligated to request a comment from the Advisory Council on Historic Preservation (ACHP).

On August 24, 2004—almost one year after site discovery—the LEKT wrote to the FHWA and WSDOT urging that the “material circumstances” had changed since the MOA was signed (FVD1226). In particular, the tribe pointed out that the number of burials was greater than anyone had originally anticipated. The LEKT asked “How do we find and remove all of our ancestors’ remains from the village site while still struggling to meet a bridge-upgrade schedule

imposed by the transportation agencies?” The LEKT stated that consultation would not be effective unless the tribe made its position very clear. Their position outlined several requests including: a formal request for work stoppage until all burials were removed regardless of how the APE had been defined, all data concerning the impacts of dewatering, vibration and compaction that could effect the burials, a complete construction schedule, geologic data, all site maps and profile cross-sections, aerial photographs, artifact data, GPS coordinates for all human remains, and site dates. The FHWA responded on August 30 disagreeing that work stoppage was required or in the public interest (FVD1260). The FHWA agreed to explore for burials below the APE (construction limits) in the northwest corner of the project area, which was warranted as a reasonable and good faith effort that went beyond state and federal requirements. The FHWA stated that they could not provide a guarantee to locate all burials, particularly those not disturbed by the project or outside of the APE. The FHWA also stated that the Site Treatment Plan anticipated the inadvertent discovery of burials and all burials had been removed to that point following the protocols outlined in the Site Treatment Plan and would continue to be removed according to the same protocol. The FHWA stated that the LEKT had received all of the site maps and other data requested in the letter of August 24.

A third-party perspective is provided by a comment letter from the ACHP to FHWA (FVD0396), dated December 14, 2004. In this letter the ACHP stated that “it is unlikely that FHWA and WSDOT can ensure that all human remains are recovered before the project proceeds. However, more can be done to demonstrate a good faith attempt.” Further, the ACHP stated that the extent of the APE as defined at the outset of the Port Angeles project “is a moot point.” The FHWA’s stance that they hold no responsibility for impacts to the area outside of the construction footprint fails to consider “that the construction of the Graving Dock will have a decided effect on the relationship of these remains to other burials in the cemetery and will affect the cultural and religious values that the LEKT associate with the remains of their ancestors.” The ACHP stated that the impacts to the LEKT’s traditional and cultural values must be considered by the lead federal agency, regardless of the lack of physical impacts to the human remains located outside of the construction footprint.

A final example will be provided to illustrate what the communication process evolved into during the course of the project from the tribal perspective. A letter dated September 28, 2004, from the LEKT to FHWA and WSDOT states that the tribe prefers “active consultation to the arms-length negotiations that have gone on since May.” Further, the tribe contended that when they requested consultation, “the FHWA, WSDOT, USACE and OAHF meet *without* the Tribe” to draft a response. This was perceived by the tribe as forcing them to respond to a “position statement” developed by the agencies.

By comparing what actually happened during the consultation process for the Port Angeles graving dock project and the best practices suggested by the NEJAC Guide (2000), we found that consultation did not begin early in the graving dock planning process and adequate project information was not provided by WSDOT to the LEKT. Meetings were held frequently, but their effectiveness is unclear without detailed notes, particularly for the formal meetings.

Given such divergent perceptions of the consultation process by the FHWA, WSDOT and the LEKT, it is difficult to say with certainty whether a truly positive relationship and open communication was established. The consultation participants all appeared to acknowledge that consultation was the right thing to do, and that they each made good faith attempts at communication throughout the project. Nevertheless some of the communication may have been misunderstood and/or misinterpreted at times. It is Foth & Van Dyke's professional opinion that given the nature of the legally defined relationship between the U.S. government and tribal governments, state and federal government employees should understand that when dealing with tribal governments (as well as the general public), that they *may* be viewed with suspicion and further, that a tribe or the public *may* feel powerless in the face of a large government entity. This opinion is based on multiple cultural resource publications including the NEJAC guide, as well as Foth and Van Dyke's experience assisting our clients with the perspective that they should establish when approaching consultation. Non-tribal government agencies should attempt to dispel any potential preconceived notion that the tribal governments have of them. This notion can be minimized by communicating openly and attempting to build trust throughout the consultation process.

There is no "textbook" solution that we can provide to resolve communication problems in the future given the diversity of the projects that necessitate government-to-government consultation as well as the cultural diversity represented amongst the consulting parties.

By understanding the agency's and the tribe's needs and roles, preconceived notions about the other group could be dispelled. If necessary, a neutral, outside facilitator could be used to help formalize a collaborative approach for a particular transportation project or a particular type of transportation project. A facilitator could help the participants through the problem solving process, could keep discussions focused on pertinent topics, and could take notes.

During the course of the Port Angeles graving dock project, WSDOT actively implemented new programs to improve tribal consultation and should be commended. Many of WSDOT's current practices are also recommended by NEJAC (2000) and NATHPO (2005). In September 2001, a Tribal Liaison Office was created to implement the guidelines of the Centennial Accord Plan. Within approximately one year, this office was promoted to an executive level to ensure its visibility to WSDOT departments statewide and to the tribes in Washington and surrounding states that have ancestral homelands in Washington. The role of the Tribal Liaison Office Director is to develop protocols for government-to-government consultation, to provide education programs for tribes and WSDOT personnel, to organize annual Tribal Conferences and to communicate with tribal coordinators in regional offices. The director of the Tribal Liaison Office indicated that the training implemented in 2001 for WSDOT staff and the Governor's Office of Indian Affairs (GOIA) staff has been a success. Typically, enrollment in this class averages 200 individuals and approximately 600 state employees have participated in the training since its inception. The Tribal Liaison Office has provided funding for tribal travel and attendance at the annual tribal conference. Further WSDOT has hosted tribal summits to address tribal transportation needs. We recommend that these practices continue.

3.4.5.4 Recommendations and Suggestions

Professional Suggestion K: To facilitate future government-to-government consultation, WSDOT may wish to request copies of constitutions from tribes who have an interest in Washington. The request for these tribal constitutions may go directly to the tribes or to the Bureau of Indian Affairs.

Recommendation No. 20 mentioned above in Subsection 3.4.4.4. should help improve the situation if WSDOT/FHWA initiated Section 106 consultation early, and provided detailed project information and project changes to the tribes to keep a dialogue going. Meeting minutes should be taken and distributed to the consultants and other stakeholders for eliciting further comments, making corrections, and for future reference should disputes or other needs arise. Communication between public and tribal agencies needs to occur on a regular basis, and project information and concerns need to flow freely between consulting parties. Further, each tribal and public agency representative needs to work toward developing a mutual understanding of the missions, goals, constraints (personnel and financial), and responsibilities of the FHWA, the DOT, Tribe and SHPO as they relate to transportation projects.

Recommendation No. 22: WSDOT should continue to pursue the implementation of a formal plan as required by the Millennium and Centennial Accords signed by both the state of Washington and the state of Washington's federally recognized tribes. WSDOT has already developed a formal plan as outlined in Executive Order 1025.00 and we recommend that they continue to build on this plan as they continue to implement procedural Programmatic Agreements with tribes living in or having ancestral homelands in Washington. WSDOT should consider coordinating with the FHWA when and where possible with continuing to develop procedural Programmatic Agreements with tribes who have ancestral homelands in Washington and live in or outside of the state. Procedural Programmatic Agreements define the process that an agency will follow to comply with Section 106 responsibilities for a particular "type of project" or a particular "type of resource." The types of Programmatic Agreements can reinforce the formal policies, as outlined in the State Accords and Executive Orders, which the federal agencies, state agencies, and tribes have agreed upon to initiate and maintain effective communication through government-to-government consultation. Procedural Programmatic Agreements often include state DOTs as parties to the agreements. The implementation of a procedural Programmatic Agreement can help streamline transportation projects and offer more certainty in the outcomes of project development. In Washington, the FHWA, with assistance from WSDOT, is currently working on Programmatic Agreements with several tribes, focusing on the tribes with Tribal Historic Preservation Officers. One Programmatic Agreement has been signed and three are in draft form (as of the summer/fall 2005). We recommend that some basic information be identified by WSDOT to be included in the FHWA's procedural Programmatic Agreements, including:

- ◆ The geographic areas for which a tribe wishes to be consulted for Section 106,
- ◆ Designate a person at FHWA or WSDOT as a point of contact for cultural resources,
- ◆ Request that the tribe designate a person as a point of contact for cultural resources,

- ◆ Request how the tribe would prefer to be contacted about a project (letter, telephone call, meeting) and the type of project information (maps, photos, known archaeological sites, etc.) they would prefer to receive, and
- ◆ Request that the tribe specify which agency (FHWA or WSDOT) they prefer to initiate the consultation.

3.4.6 Archaeological Geology, Geomorphology and Geoarchaeology

Geomorphology is the study of the evolution of the earth's landforms. Geoarchaeology and archaeological geology are synonymous and represent the geological aspects of an archaeology site or materials. The difference between archaeological geology and geoarchaeology has to do with the primary training of the person performing the work; so a geologist working on the stratigraphy, soils, or mineral makeup of an artifact, for example, is the former; whereas an archaeologist with training and experience in some aspects of geology is the latter.

3.4.6.1 Criteria

Geoarchaeology or archaeological geology has been utilized in Europe and the United States since the 1970s. One of the first volumes on geoarchaeology was a result of an early 1970s symposium entitled "Sediments in Archaeology." The volume was organized into themes such as biological sediments, sedimentary sediments, and techniques (*Geoarchaeology* by D.A. Davidson and M.L. Shackley 1976). G. Rapp Jr. and J. Gifford (1985) edited the book *Archaeological Geology*, a multiauthored methodological book that included discussions on the use of geomorphology, sedimentology, stratigraphy, geophysical surveying, isotopic dating, and other practices towards the solving of archaeological problems. Geoarchaeology text books started to appear in the 1990s, e.g., *Principles of Geoarchaeology* by M. Waters (1992), and *Geoarchaeology* by G. Rapp Jr. and C. Hill (1998). One text book, *Geological Methods for Archaeology* by N. Herz and E. Garrison (1998), presented geological applications of geomorphology, sediments, soils, dating techniques, and site exploration among other techniques for use in the field of archaeology. More recently, P. Goldberg, V.T. Holliday, and C.R. Ferring (2001) edited a multiauthored volume entitled *Earth Sciences and Archaeology* which provides examples of archaeological challenges or problems that earth science techniques can help to solve.

The largest archaeology and geology professional organizations in the United States both recognize geoarchaeology and archaeological geology, respectively, as a subdiscipline by having special interest groups or divisions within their organization. The Society for American Archaeology's (SAA) Geoarchaeology Interest Group was started in 1997, and was the second of seven such interest groups to be developed within the SAA. The Archaeological Geology Division of the Geological Society of America (GSA) was first established in May 1977, and has also published information on universities with programs in geoarchaeology (*Guide to Geoarchaeological Programs and Departments*). Twenty-three (23) such programs or departments are found in this 2005 published account for the United States and North America (<http://rock.geosociety.org/arch/>). The University of Washington (fifteen affiliated faculty), Washington State University (five affiliated faculty), and Boise State (five affiliated faculty) all

have geoarchaeology programs. This subdiscipline is established in Washington as well as the remainder of the United States and North America, and has been for decades.

No set standards exist in the state of Washington for the testing or investigation of potentially deeply-buried (>1.0 meters) archaeology sites. Therefore, the standards applied in this subsection come from best practices identified in the publications listed above, and from best practices developed and adopted by the Foth & Van Dyke author. If consulted in advance, then presumably the SHPO or State Archaeologist at the DAHP would likely offer their opinions on whether to test for deeply-buried sites or not.

Other state SHPOs across the nation provide suggested criteria for when to use deep-site testing (e.g., Minnesota, Wisconsin, Illinois); or the Iowa SHPO backed by a professional society's guidelines (i.e., Association of Iowa Archaeologists [AIA]) strongly suggests utilizing an earth scientist (e.g., geologist, geomorphologist) for almost every Phase I Archaeological Investigation (also called Identification in the Secretary of Interior's Standards and Guidelines). The latter case in Iowa has yielded multiple deeply-buried sites over the past two decades that most likely would have gone undiscovered by using traditional Phase I archaeological methods without the assistance of a trained earth scientist; and conversely has eliminated large tracts of land from requiring surveys because the strata were either too old, too young, or were too disturbed or eroded to contain intact archaeological materials. The Phase I archaeology reports are required by the Iowa SHPO and the AIA Guidelines to present the geologic data in an appendix (e.g., trench profiles, geologic logs, geologic cross-sections, etc.) so that, according to good scientific practice, others (e.g., the SHPO or their geologic advisor and other readers) may independently review the data and in theory confirm or reinterpret the original author's conclusions.

Coastal states such as Florida have multiple "wetsites" that may be deeply-buried and are further complicated by high or perched water tables, but they consider these some of their best archaeological and paleontological site potentials in the state. Some state and federal agencies also have geologic/landform models, which in part offer potentials for locating deeply-buried sites (e.g., Minnesota, Kansas, USACE along the Mississippi River Valley). Preliminary results indicate that these models work well, although it is difficult to quantify because the sites are usually avoided (personal communication, Mn/DOT). When the agency (developer) decides to proceed through a high potential area, that agency (developer) can plan for both a more costly Phase I investigation and also create an emergency fund should a site be discovered and a further evaluation or mitigation be required.

Many state SHPOs and State Archaeologists would freely offer their opinions on where sites may be found at depth, provided that they are consulted in advance of the project. Some SHPOs, such as in Iowa, for example, require the Phase I archaeologists to consult with a geologist at the Phase I level. The Iowa SHPO archaeologists are currently adept at recognizing high potential areas in Iowa. They have developed their experience over the past two or more decades by repetitively identifying potential and confirmed sites that are often suggested possible by geologists. Despite this experience, the Iowa SHPO archaeologists still consult with "geologic advisors" that do not have a vested interest in the project at hand to justify their Section 106 decisions.

Geoarchaeologists and archaeological geologists, as a current best practice across the nation, request geotechnical information (i.e., drilling logs) on the project site from the state or local government DOTs. This information is typically available from state and local government development agencies because these agencies require this information early in the process for their design work and construction cost estimating. Occasionally, if questions arise on these geotechnical logs, the geoarchaeologists/geologists will contact the DOT and/or geotechnical experts to confirm their findings and interpretations. Our experience has always been that the other geotechnical geologists/engineers are willing to communicate and share their findings because our work can help to confirm their own. When feasible, the geotechnical work can sometimes be combined with deep-site or other specialized archaeological investigations as a time and cost-savings measure.

3.4.6.2 Findings

3.4.6.2.1 *Initial Archaeological Assessment and Site Geology*

The cultural resources specialist at WSDOT required that their consultant performing the initial assessment at the Port Angeles graving dock use a backhoe and geologic cores to evaluate for the potential of deeply-buried sites. Although this specialist is not necessarily federally qualified to be a Principal Investigator in archaeology, he apparently had enough consulting experience in prehistoric and historic archaeology to recognize the high potential for a deeply-buried site along the shoreline and under the apparent historic-aged fill. This individual should be commended.

The consulting archaeology firm performing the initial Port Angeles graving dock archaeological assessment had a staff member identified as an archaeologist with a “geomorphology expertise” in their proposal to WSDOT for the “On-call Cultural Resource Program” contract, under which the Port Angeles graving dock project was eventually awarded to this same consultant. This same staff member with geomorphology expertise was the field investigator for the initial Phase I archaeological assessment at the Port Angeles graving dock. We did not communicate directly with this individual, but relied on her initial Phase I archaeology report, available field notes, and a set of debriefing notes transcribed by the SHPO in an interview with this field staff member shortly after the unexpected discovery of the Tse-whit-zen archaeology site. The report, available non-standardized field notes, and specifically the lack of detailed standardized core logs and test trench profiles, makes the independent review of the initial field work difficult (i.e., a poor scientific practice). The project area geology was supposed to be part of the WSDOT consultant’s scope of work. Geologic data was insufficient to support any and all conclusions written in the report.

The WSDOT consultant’s archaeological assessment indicated that the historic-aged fill at the Graving Dock site was at least 4 to more than 6 feet deep across the project area (based on select comments and the recommendation to monitor construction below 4-ft. depths). In general, the consultant characterized the first 20-foot depths of the project area as being a combination of dredged sediments and historic-era debris (Burns and Rooke 2003: 5). The Hart Crowser geotechnical logs from 1988, which were available to the archaeology consultant at the time of their November 12-15, 2002, field assessment, and certainly for their December 10, 2002, draft report, indicated that Boring B-5-88 in Quadrant 22 contains fill to depths less than 2.5 feet, and

that Boring B-6-88 approximately 80 feet north of Quadrant 7 had fill to depths between 14 and 17.5 feet. Therefore, a review of existing data would have shown a greater variation in fill depths than what was reported in the consultant's assessment report, and if known, may have changed the 4-foot depth requirement for archaeological construction monitoring. The consultant did report that the fill had great variation, but just not to the greater range and complexity as recognized by the Hart Crowser draft report dated November 18, 2002. Borings collected after the initial assessment also confirm a greater variation in depth of historic fill.

The consultant's report and available field notes of the initial fieldwork suggest a greater emphasis was placed on looking at/for the Historic fill, rather than what the primary goal of a Phase I geoarchaeological investigation at Port Angeles should have been, and that is looking for and profiling the uppermost surface of the last natural soil/stratum. After this last natural surface is identified in each boring or trench, then the search for intact archaeology begins in earnest. We received no data to indicate that the geotechnical data were ever used by the archaeological consultant. Furthermore, WSDOT had an opportunity to combine the geotechnical work (i.e., deep drilling) with the archaeological work since it too was mostly deep-site testing. The differences in drill-rig set-up would have been minimal, although more split-spoon samples than what was collected for the geotechnical investigation would have been recommended. (Note: Hart Crowser, the geotechnical firm, was also a WSDOT on-call archaeological consultant that was not selected for this Port Angeles archaeological work because WSDOT believed that its consultant of choice was less costly for this geographic location.)

The fill was never really treated as an important cultural stratum, albeit "man-made." The Historic fill did have foundations and slabs and other assorted and apparently intact Historic era features/artifacts. Fill can act as a protective layer, shielding the underlying native soil/strata from future destruction. Some states have used fill to protect archaeological sites from future destruction, others claim that the fill can cause unnecessary settling and compaction within the site.

WSDOT, SHPO, and the State Archaeologist all relied upon this archaeological assessment report to represent facts and to be of adequate quality. WSDOT did not officially have any federally qualified staff member to review this work at that time, and the SHPO and State Archaeologist have far too many statewide project reviews (5,862 archaeology sites in 2004, personal communication, DAHP) under their current budget to perform random and otherwise more costly field performance reviews.

The initial archaeological assessment report indicated that the consultant's trench/core sampling pattern had to be adjusted to avoid the many concrete slabs/foundations etc. at the land surface. The trench locations and especially their intervals shown in the report (their Figure 2), do not closely correlate with subsequent mapping of these same trenches produced by WSDOT. Subsequent and prior maps of trench and environmental/geotechnical core locations indicate that a more systematic sampling pattern was indeed possible and is contrary to the initial assessment report. This is an important issue because a more systematic sampling pattern (i.e., more evenly spaced across the entire project area) stood a better chance of discovering the buried soils and perhaps even the archaeology site itself. Unfortunately, the areas that the consultant did not

sample (except for one trench) were the areas that later were identified as having intact archaeology. The trenches shown in the assessment report map were, however, grossly disproportionate to the scale of the map, and according to interviews, were only located with one GPS reading (therefore the orientations of the trenches' long axes might also be in error).

Some or all of this field work was conducted in the rain (Port Angeles weather records). Trench profiles are difficult to see with just the smearing of the walls from the backhoe shovel. Rain would worsen visibility unless slumping occurred to expose a fresh face. The consultant could not have entered the excavated trenches back in 2002 safely and legally (according to OSHA without some protective measures) to have described these deep trenches. Trenches could have been described by asking the backhoe operator to collect samples with his backhoe bucket from selected horizons and bring them to the land surface. No mention of this was noted in the report, field notes, or the interview notes.

The entire Phase I archaeological assessment was in essence deep-site testing with a backhoe and cores, and from the available evidence, no field staff member was truly qualified to assess the stratigraphy for deep-site potentials. The inability to recognize archaeological materials is surprising in hindsight given the richness of the site and the high potential of the area to contain an indigenous settlement.

3.4.6.2.2 *Other Regionally Known and Unknown Deeply-buried Sites*

Interviews with the SHPO indicated that the entire coastline of Washington is probably an archaeological "site." One example of another deeply (>1.0 meters) buried site is the Ozette site along the Pacific coast of the Olympic Peninsula (SHPO site records).

Interviews with a nationally known ge archaeologist living and working in Washington indicated that deeply-buried sites were known to exist beneath the city of Seattle when construction of a tunnel began. The site location is under historic-aged fill, the location of the site was predicted, and when construction began they indeed did discover the site just as predicted.

This same ge archaeologist indicated that much of the state of Washington has yet to be evaluated for, and is probably "ripe" with, deeply-buried sites. Examples given include landform-sediment assemblages (i.e., a landform or set of similar landforms that are genetically-linked with the same or similar underlying stratigraphic units) caused by earthquakes, tsunamis, and lahars. Some of these landform-sediment assemblages may cover entire valleys such as the lahar that buried the Skagit Valley. Said differently, Washington has great potential (better than most states) for the preservation of multiple large and significant archaeology sites like Tse-whit-zen. Sites certainly occur in similar Washington coastline settings as the aforementioned site, but there are also great opportunities on the interior of the state in valleys and beneath wind-blown deposits on the uplands, and adjacent to volcanoes.

3.4.6.2.3 *Local Archaeological Geologists and Geoarchaeologists*

This same geoarchaeologist was never consulted on this project by any agency, consultant, or regulatory staff. This geoarchaeologist indicated that she only knew of one true “geoarchaeologist or geologist” working as an archaeological consultant in Washington, although admittedly she did not know all the firms and their personnel working in Washington. Foth & Van Dyke did not perform a survey of “geoarchaeologists” working in Washington to verify the numbers, although geomorphologists do exist in the state University system

No qualified geoarchaeologists, archaeological geologists, or geomorphologists are currently (summer/fall 2005) working at WSDOT, DAHP, or for a THPO in Washington.

The SHPO and LEKT did not consult with an archaeological geologist or geoarchaeologist on the archaeological consultant’s assessment scope of work before the fieldwork began because neither group was effectively consulted by WSDOT until after the report was delivered to the SHPO and tribe for comment. The SHPO and tribe did not consult with a geoarchaeologist or geologist while reviewing the assessment report.

3.4.6.2.4 *Geological, Archaeological, and Predictive Models*

We understand that an archaeological predictive pilot model was developed by DAHP for parts of the Yakima Valley with funding from the Washington State Public Works Board. Currently, DAHP is preparing an archaeological predictive model for the Hood Canal Region that is also funded by the Washington State Public Works Board. No other known models currently exist (i.e., built especially for archaeological investigations) to assist the DAHP, WSDOT, and other state, federal, and local agencies with an evaluation for deeply-buried sites. These same agencies would have to depend upon an expert’s intuitive model or past experience to decide where to test for deeply-buried archaeological sites.

Apparently, a three-dimensional model of the Port Angeles graving dock site exists at Hart Crowser or one of their subconsultants, but according to the WSDOT Regional Environmental and Hydraulic Manager, this model was developed using an expensive software platform made for the mining industry, and is not easily transferred on a two-dimensional paper plot. Interviews with the DAHP indicated that the model apparently shows where all the testing locations were for cores, trenches, excavation units, etc. relative to where the artifacts were eventually located. This model could be very useful in helping to determine if some of the initial archaeological assessment testing was within the known site. The intended use of this model by WSDOT remains unclear.

3.4.6.2.5 *Area of Potential Effect: Settlement, Compaction, Dewatering and Liquefaction*

A Hart Crowser (2003) study indicated that settlement was going to occur under the graving dock concrete slabs, and that it would not be uniform across the area. The Deep Channel Slab might settle 1 to 4 inches, whereas the Upper Slab might settle 2 to 10 inches. The sheet piles were also expected to move. Sheet pilings were predicted to move after installation, and that Unit 2 near Borings H-5-02 and H-5-06 could liquefy widely. Dewatering wells as deep as 60 feet below the land surface might be necessary to help avoid heaving of the graving dock slabs

and pilings, but this dewatering could cause settlement of its own within the strata. Pile driving may have caused liquefaction of some stratigraphic units, which in turn could cause the overlying strata to settle. Brett Lenz (undated geoarchaeology report; FVD1924) further warned of potential sediment liquefaction at the site.

The Hart Crowser November 13, 2002, draft memo report mentioned the planned need to dewater to 30-foot depths below the current land surface to facilitate the construction of the graving dock floor. Furthermore, they mentioned that dewatering may be required both inside and outside of the sheet pilings proposed for the Graving Dock construction. Dewatering would likely cause oxidation of the subaerially exposed soils/strata, and the organic and metallic cultural artifacts and human and faunal/floral remains that are encased by these strata. Oxidation is particularly destructive to organic matter. Because Foth & Van Dyke never received extremely detailed maps showing locations and depths of cultural artifacts, features and human remains relative to the pilings, slabs, potential liquefaction units and possible dewatering wells; we were unable to confirm what the depths of potential effects would have been relative to the archaeology. The original Area of Potential Effect (APE) provided by WSDOT to their archaeological consultant was the physical limit of Graving Dock excavation. Given the dewatering plans in place on November 13, 2002, the APE was in all likelihood, underestimated in size; and the indirect effects of the proposed construction on any potential archaeological deposits were apparently never considered.

Liquefaction occurs when saturated sands or silty sands are subjected to cyclic loading. Cyclic loading increases the water pressure in these types of sediments causing them to behave as a liquid (Hart Crowser 2003: 16). Liquefaction apparently occurred as a result of pile driving vibrations in one or more geologic units. Foth & Van Dyke did not request nor did we see the three-dimensional groundwater models for the projected dewatering wells and the contours of their cones of depression or drawdown expectations because it was a moot point without any accurate three-dimensional location data on the archaeology and their encompassing strata.

There is a growing body of data discussing the effects of: 1) dewatering on archaeological sites in England and Denmark (French 2003), 2) liquefaction on sites located in the New Madrid seismic zone in the U.S. Midwest and along the U.S. Pacific Coast (Wolf 2004, Moss and Erlandson 1998), and 3) capping sites with concrete (French 2003). In our opinion, the cursory studies conducted by WSDOT on dewatering, liquefaction, and compaction did not adequately address the degree and delineation of potential effects of the processes on the archaeological deposits at Tse-whit-zen village after its discovery (nor did they adequately consider potential cultural resources that might be impacted at the start of the project).

3.4.6.3 Recommendations

3.4.6.3.1 November 2002 Archaeological Assessments and the Practical Use of Geology

Geology and geologists need to be an important part of the state of Washington's archaeological assessments (investigations), and should be brought in at the earliest stages of an archaeology project. The state of Washington is tectonically active. The current geology of the Olympic Peninsula is the result of geological activity, which occurred over millions of years including

lahars, earthquakes, tsunamis, and rising and falling sea levels. Geology does not supersede the importance of archaeology; rather geology should be viewed as a tool to assist the archaeologists in finding the sites, and not just deeply-buried sites. Geology is the framework upon which all the other natural and archaeological resources are positioned. Understanding this geologic framework is vital to the long-term time and cost effectiveness of any cultural resource management program.

Recommendation No. 23: The DAHP and possible interested stakeholders such as WSDOT should adopt or amend a set of guidelines for the application of geology in all archaeological investigations and evaluations. Trained earth scientists should be required or highly recommended in all phases of archaeological investigations. The DAHP, should revise the archaeological guidelines and standards on how to perform fieldwork, laboratory work, and report writing. Geologic field work and documentation both need to be standardized between projects that are presented to the DAHP. Standards need to be developed and implemented for deep-site testing and the types of qualifications necessary to do this type of work. For example, a geomorphologist, geoarchaeologist, or archaeological geologist with parallel qualifications as those required for archaeologists by the U.S. Department of Interior should be required on most projects within the state of Washington. The Association of Iowa Archaeologist’s (1993) “Guidelines for Archaeological Investigations in Iowa” contains a well-thought out approach to using geology; but it still takes a diligent regulator to enforce this application. Too many non-geologists with incomplete training and limited experience believe that they have sufficient knowledge to fill that role; but our experience indicates that almost every project yields something different and not readily apparent to a less experienced observer in the science. As stated elsewhere in this report, “proper tool for the proper job.” As a procedural example, an experienced geologist would request geotechnical information on a transportation project, and might suggest, if feasible, to coordinate with the geotechnical investigation to further save time and expense.

Recommendation No. 24: WSDOT, FHWA, and DAHP should work together to secure resources (funding and labor) to help produce some standardized geologic mapping/modeling across areas that are expected to have a large developmental need for archaeological surveys in the next five to ten years (see also Subsection 3.4.6.3.2. for resource suggestions). Mapping at the appropriate scale and detail may already be completed (preferably at 1:24,000 or larger scale) in some areas, and would need to be adjusted for archaeological potentials. Further guidance could be secured from multiple geologists or earth scientists that have completed such surveys around the country (e.g., Art Bettis, Iowa; Ed Hajic, Illinois and Minnesota; Curt Hudak, Minnesota and Iowa; Rolfe Mandel, Kansas), or from their clients (e.g., USACE, Rock Island District; Mn/DOT; and KDOT).

Many sites have been missed across the United States before the Tse-whit-zen site was missed during the initial archaeological assessment; and sites will be missed again in the future. Still, most sites that have been missed, and those sites that will be missed have one or some combination of the following reasons as the cause:

- ◆ Geographically small and located between the systematic sampling points,

- ◆ Low density of artifacts and mostly located between the systematic sampling points,
- ◆ Deeply-buried and out of sight and neglected,
- ◆ Out of range with standard testing methods and has never been tested or sampled, and
- ◆ Excluded from investigation's sampling protocol—are assumed to be disturbed.

Tse-whit-zen, a large and culturally rich Klallam village site, was not recognized although testing had occurred within the horizontal and vertical limits of the site. This testing was erratic and consisted of widely spaced trenches and cores. A number of circumstances reduced the effectiveness of this testing program. WSDOT required the work to be carried out in an abbreviated time frame, the work was made more difficult by rainfall, WSDOT's backhoe equipment malfunctioned causing delays and a method change, and the consultant was apparently unprepared to do deep-site testing and certainly did not adequately document the deep-site testing fieldwork in a standardized manner. On the other hand, WSDOT, SHPO, and the LEKT all accepted the consultant's initial work and report with caveats (i.e., monitoring construction). WSDOT may deserve recovery from their consultant (if not already done so) because of the apparent absence of the Principal Investigator on the site (personal communication, WSDOT), and also for assigning a field monitor apparently insufficiently trained in geoarchaeology despite having been declared as having a "geomorphology expertise" in the consultant's 2001 On-Call Cultural Resource Proposal. The "insufficiently trained" statement is based on the lack of standardized geological field and report documentation.

An experienced geologist/geoarchaeologist would have classified the Port Angeles shoreline environment as a very high potential area for deeply-buried archaeology sites especially after given prior knowledge of the variable range of "protective man-made fill." A project like this could have been approached by collecting multiple sediment samples at or near the uppermost natural land surface and at any obvious buried soil or ancient land surface to analyze for microartifacts and to identify the depth of buried soils (other methods could also have worked). Monitoring should have occurred after cores were documented as void of microartifacts by using an established modification of a Fladmark (1982) microartifact collection technique. Microartifacts are microscopic-sized remnants of cultural artifacts (e.g., microflakes left over from lithic tool production or sharpening, charcoal, burned bone or shell fragments, etc.). This method is a relatively quick and yet systematic technique for recognizing deeply-buried sites from selected core samples within a network of closely spaced cores. If microartifacts are recovered, then a deep-site evaluation plan would be required to further substantiate the density and disposition of artifacts, and the investigation team would attempt to target areas for a more intense recovery and evaluation of the site, if deemed of value to the greater project by the client. There are many variables that need to be addressed and are too numerous to discuss herein; but many scenarios are possible after the initial discovery of microartifacts, including the determination that the microartifacts are out of context and a subsequent recommendation to proceed with construction. As mentioned above, other deep-site or limited sample testing methods (besides backhoe testing) are possible within a broader Cultural Resource program, for example, geophysical means have helped to find sites especially in undisturbed or pristine

environmental settings. See K. Kvamme's *Current Practices in Archaeogeophysics – Magnetism, Resistivity, Conductivity, and Ground-Penetrating Radar* in the Goldberg, Holliday, and Ferring (2001) book mentioned above in Subsection 3.4.6.1. Another case study of finding sites with deep-site testing is McFaul et al.'s (1994) coring and targeted backhoe investigation found in a publication titled "Geoarchaeologic Analysis of South Platte River Terraces: Kersey, Colorado" in the journal *Geoarchaeology: An International Journal* 9(5):345-374. C.R. Stafford (1995) in an article titled "Geoarchaeological Perspectives on Paleolandscapes and Regional Subsurface Archaeology" in *Journal of Archaeological Method and Theory* 2(1):69-104 used a combination of coring and excavation units to identify buried sites along the Ohio River Floodplain. In the Port Angeles case, the combined coring and microartifact sampling would likely have been the best option for cost-effective site discovery given the potential for an extensive sheet midden in this environmental setting, the difficulty of testing through historic fill and features, and the relatively lower costs compared to other methods.

3.4.6.3.2 Geologists, Known Sites, and Predictive Models

Recommendation No. 25: DAHP and consulting archaeologists should begin a dialog with geologists knowledgeable of Washington to discuss interpreted areas of high potential for deeply-buried sites. Quaternary geologists already have developed informal models of landscape evolution for different parts of Washington that may benefit the archaeological community. WSDOT and DAHP should both develop camaraderie with these geologists for consultative purposes. Perhaps the geologists are paid consultants, or perhaps for a small question, the work is gratis. Most geologists across the country working in Cultural Resource Management (CRM) are typically willing to offer their opinions on the chances of an archaeological site being in a particular location.

The DAHP and WSDOT might determine that they have a great need for CRM services coming up in a particular region or area of Washington during the next several years. Building a model of the area that assesses the potentials for finding intact archaeological sites provides a long-term time and cost savings to the greater CRM program of that particular region. The FHWA has sponsored such models in the past for other states through the Intermodal Surface Transportation Efficiency Act of 1991, PL 102-240 (ISTEA) and Transportation Equity Act for the 21st Century's (TEA-21) funding programs.

An excellent source of funding is possible through Transportation Enhancement (TE) activities that are eligible under the Surface Transportation Program (<http://www.fhwa.dot.gov/environment/te/guidance.htm#eligible>). TE activities "benefit the traveling public and help communities to increase transportation choices and access, enhance the built and natural environment, and provide a sense of place." TE projects must fit into one of twelve eligible categories and relate to surface transportation. Archaeological Planning and Research is a TE category. The eligibility principle for this category:

"must focus on physical evidence of historic or prehistoric human life or activity relating to surface transportation, or relating to artifacts recovered from locations within or along surface transportation corridors. The project must be consistent with the Secretary of Interior's Standards for Preservation Projects."

Any of the WSDOT regions could apply for this funding to develop regional models, but it might be cost-effective to invest monies early in the process for a statewide model.

Archaeological models can be developed on a project-by-project basis, or can be developed for a larger region (e.g., valley, state, etc.). A model for a specific transportation project should be developed prior to an archaeological investigation. Models typically indicate that certain locales have a greater chance than others to contain archaeological sites. The model may determine that some areas do not even require an archaeological assessment because the strata are too young, too disturbed, or too high of an energy environment (depositional environment) to preserve an archaeological site. Environmental data, such as the geologic conditions of an area, can be used in combination with known archaeological site locations to predict which landforms are likely to contain intact archaeological sites below the land surface. Models have been documented to be useful for transportation planning. Construction plans can be altered to miss areas predicted to have a high potential for containing archaeological sites. This approach may ultimately be a cost-effective planning tool.

3.4.6.3.3 Area of Potential Effect and Geology

Recommendation No. 26: WSDOT, when defining the Area of Potential Effect (APE) on behalf of the lead federal agency, needs to consider what the impacts are to an archaeology site if subjected to vibration, settling/compaction, liquefaction, stress-strain, shearing, dewatering, flooding, oxidation, etc. caused by the undertaking. An archaeologist, other pertinent technical experts, and the SHPO and THPO need to be consulted on the possible effects that might take place at and to the “site” given a set of circumstances predicted by the designers. If the construction methods or conditions change during the course of the project, then the APE should be re-evaluated. The safest means for avoiding this scenario of having to investigate a new APE during mid-construction is to assume at the beginning of the project before sites are found that the APE continues downward to a safe depth (i.e., archaeologically sterile unit or in a geologic environment with no chance for more archaeology to exist within or beneath this unit). State DOTs in Minnesota and Iowa, for example, rely upon the geomorphology or landform to help decide the depths of their APE's (pers. communication, 2005, Mn/DOT archaeologist; Iowa SHPO archaeologist).

3.4.7 SHPO Oversight of the Archaeological Investigations at Tse-whit-zen (45CA523)

3.4.7.1 Criteria

The role of the SHPO has been described in Subsection 3.4.4 above, and includes such duties as assisting federal agencies in carrying out their Section 106 responsibilities, representing the cultural preservation issues of the state and its citizens, issuing permits for excavation (evaluation and mitigation) of archaeological sites and of human remains (Chapters 27.44 and 27.53 RCW), signing agreements (MOA, Programmatic Agreement), concurring with Determinations of Eligibility, reviewing cultural resource reports conducted under National and State legislation (Section 106, NEPA, and SEPA), and maintaining a database of site records in Washington. The primary role of the SHPO in the Section 106 process is an advisory role. The

federal agency has the final authority in making all Section 106 decisions except those concerning the eligibility of properties to the National Register of Historic Places. In its advisory role, the SHPO can issue state guidelines as part of advice and assistance promulgated under the authority of the National Historic Preservation Act Section 101.b(3)(I). The purpose of state guidelines is to provide guidance for conducting archaeological investigations in Washington and to ensure that archaeological work conducted in the state is of consistently good quality and that there is consistency in the review of projects requiring compliance with preservation legislation. These guidelines are essential given the large number of projects undertaken in most states. For example, in Washington the DAHP reviews more than 5,000 federal, state, and local government projects annually that have the potential to impact cultural resources.

3.4.7.2 Conditions

The SHPO had an important role on the Port Angeles graving dock project, which included review of the November 2002 archaeological assessment, review of the Determination of Eligibility of Tse-whit-zen (45CA523), signatory on the MOA, issuer of permits for the excavation of human remains in the bioswale area, and participant in numerous consultation meetings. A brief timeline of SHPO participation in major project milestones follows:

January 14, 2003	Concurred with WSHS initial findings and recommendations for the November 2002 archaeological assessment.
September 8, 2003	Provided comments on WSHS Site Assessment Plan for the Tse-whit-zen village (45CA523); Assessment plan finalized September 18, 2003.
October 2003 – March 2004	As a signatory, provided comments on the MOA and the Site Treatment Plan.
October 10, 2003	Concurred with Determination of Eligibility of Tse-whit-zen village; Areas A, B, C and D were eligible.
October 27, 2003	Correspondence recognizing that APE has changed to include bioswales and drainage system; SHPO recommended that a new monitoring plan, separate from the MOA, be developed for the bioswales and drainage system for the sake of efficiency; requested site data from the second archaeological assessment (September – October 2003) conducted by WSHS, including trench profiles, geomorphology data, and a 3-D geomorphological model.
March 16, 2004	Signed MOA.
November 18, 2004	Confirmed that the DAHP defined the APE as the project’s construction limits, agreed with WSDOT’s compaction study in that the graving dock’s concrete slab would entomb the burials and provide protection.

3.4.7.3 Findings

Upon a review of SHPO correspondence, interview notes, the MOA, and Site Treatment Plan, we found that the Washington SHPO participated at an appropriate level given its advisory role and participated within the legal requirements of Section 106.

When the Port Angeles project locale was under consideration for use as the graving dock, the SHPO was not consulted. In fact, the SHPO learned of the Port Angeles graving dock project upon review of the assessment report prepared by WSHS. On January 14, 2003, the SHPO concurred with WSDOT's consultant's conclusions regarding historic properties and their recommendations for monitoring at the Port Angeles graving dock. SHPO's concurrence was based on the following survey results:

- ◆ The project area had been described by a professional archaeologist to be extensively disturbed to depths ranging between 5 and 20 feet, and
- ◆ The majority of the proposed ground disturbance would occur within the disturbed sediments.

Monitoring in those areas excavated deeper than 4 feet would afford an archaeologist the opportunity to identify cultural resources potentially associated with the historically documented Tse-whit-zen village. This report did not include trench or core descriptions even though they were the methods used to investigate the graving dock and the basis for the recommendations.

Two issues that we defined as problematic during the early stages of the graving dock project include:

- ◆ The lack of consultation between WSDOT and the SHPO during project planning, and
- ◆ A lack of support data in the initial archaeological investigation upon which to assess the recommendations.

Our recommendations attempt to address these problems and, if implemented, should help reduce the likelihood of similar situations occurring in the future.

During the graving dock project, the DAHP had no civil penalty authority over archaeological investigation. Currently, the DAHP has legal authority to impose a penalty up to \$5,000 for not fulfilling permit obligations as well as the right to refuse to issue a new permit if a previous permit is in default. Permits are required to excavate archaeological materials during site evaluation and mitigation and/or human remains. We suggest that the DAHP seek legislative authority that allows the DAHP to issue licenses for "Identification" surveys on all federally and state funded projects regardless of land ownership. This will be one way to keep apprised of survey locations and purpose in the event that lead agencies do not consult with the SHPO early in the project planning process. This may require additional staff and funding source to assist in processing the paperwork. A license fee could offset the required funding.

According to the National Historic Preservation Act, the federal agency has the final authority in making all Section 106 decisions except those concerning the eligibility of properties to the NRHP, but the SHPO can make recommendations on methods used. These recommendations can be presented as guidelines for conducting archaeology within the state as a tool to assist agencies and consultants.

3.4.7.4 Recommendations and Suggestions

As mentioned in Recommendation No. 23 above, the SHPO should update the current state guidelines to include a list of professional qualifications expected of a geoarchaeologist, archaeological geologist, or geomorphologist. To be comparable with the Secretary of the Interior's Professional Qualifications, we recommend that the individual possess a graduate degree in geology, Quaternary studies, or similar discipline. The guidelines for geoarchaeological and geomorphological investigations discuss topics such as:

- ◆ Pre-field preparation – literature search to determine a general land use history.
- ◆ Field Investigation – identify areas with the potential to contain intact cultural material, including the types of areas that have the potential for deeply-buried archaeological sites.
- ◆ Methods typically used in field investigations – bucket auger, core, backhoe trenches, hand excavated units, outcrop cleaning, etc.
- ◆ Report preparation – Major report sections (introduction, literature search, methods, landform interpretation with reference to archaeological deposits, conclusions and recommendations).
- ◆ Report Appendices – Raw data from which the report interpretations were made, and any absolute dates (e.g., radiocarbon, thermoluminescence, etc.) should be provided.

The guidelines should address different expectations for geoarchaeological and geomorphological investigations during all phases of archaeological investigation, including Identification, Excavation, and Mitigation /Data Recovery.

Professional Suggestion L: The DAHP should seek legislative authority to allow the DAHP to issue licenses for "Identification" surveys on all federally and state funded projects regardless of land ownership. This is one method for the DAHP to keep apprised of survey locations and purpose if the lead agency does not consult with the SHPO early in the planning process.

3.4.8 Archaeological Monitoring (August 19 – September 17) and Second Archaeological Assessment (September 18-October 3, 2003)

3.4.8.1 Criteria

If construction has started on an undertaking that has been approved by the lead agency and an archaeological discovery is made, the agency official is obligated to take action to resolve

adverse effects and to “notify the SHPO/THPO, any Indian tribe or Native Hawaiian organization that might attach religious and cultural significance to the affected property, and the Council within 48 hours of the discovery” (36 CFR 800.13 (b) (3)). The lead agency is expected to carry out appropriate actions after taking into account the National Register eligibility of the discovery.

3.4.8.2 Conditions

The monitoring plan that was developed by WSHS after the initial site assessment was completed, stipulated that the staging, parking, access roads, and stormwater treatment plants would not require monitoring. Monitoring by a federally qualified archaeologist was recommended during the construction of the graving dock “in those areas where excavations will exceed 4 feet in depth.” No archaeologist was at the graving dock when Tse-whit-zen was discovered on August 16, 2003. The discovery was made during the removal of a concrete footing that extended below 4 foot depths. After the discovery of Tse-whit-zen was made by a WSDOT employee, WSDOT contacted the LEKT, SHPO, FHWA, and the USACE within the 48-hour window required by Section 106.

A federally qualified archaeologist, employed by WSHS, monitored the removal of overburden by a backhoe with a toothed bucket. The goal of the monitoring was to identify the limits of the archaeological deposits and assess the site integrity. This supervisor and other federally qualified supervisors were on site approximately one month from August 19 to September 17, 2003. Approximately 18 trenches were excavated and areas that were later known as A, B, and C were identified as containing archaeological deposits. During that month, the LEKT hired a consultant, LAAS. A federally qualified archaeologist employed by LAAS visited the site on August 22, 2003. The president of LAAS visited the site on August 25, 2003. There were differences of opinion regarding the location of intact archaeological deposits. WSHS personnel claimed that only Areas A and C were intact. LAAS personnel concluded that intact midden deposits also occurred in Area B, but most of these deposits had been removed by the heavy equipment. Ultimately, the SHPO concurred (October 10, 2003) with the Determination of Eligibility that stated Areas A, B, C, and D were eligible for listing in the NRHP under Criterion D of Section 106 of the National Historic Preservation Act.

WSHS was asked by WSDOT to prepare an archaeological assessment plan because the site could not be avoided. The plan was finalized on September 18, 2003, and was prepared by WSDOT and the LEKT. The purpose of this assessment plan was to address methods for recovering information on the vertical and horizontal boundaries, integrity, and site content to assist in determining the eligibility of the site for listing in the NRHP (WSDOT and LEKT 2003: 1). This assessment became known as the second site assessment and occurred between September 18 and October 3, 2003.

It was determined that a WSHS archaeologist be the lead archaeologist for the project. The assessment plan was a phased approach to identify intact archaeological deposits. Each phase of “archival and field investigations” was to be employed to make informed decisions regarding the “locations and kinds of samples” that would be obtained in the next phase of the assessment (WSDOT and LEKT 2003: 3). Phase 1 was to document stratigraphy and historic period ground

disturbance and Phase 2 was to remove overburden from archaeological deposits that were identified in historically documented utility trenches and foundation excavations. Phase 3 would sample exposures of archaeological deposits to obtain organic material for radiocarbon assays and to collect shell midden matrices to quantify its constituents. Phase 4 fieldwork would be undertaken only if sufficient stratigraphic exposures were unavailable to characterize the extent of the deposits. Phase 4 was to include the excavation of backhoe trenches in areas where adequate samples were not available in a utility line or foundation excavation exposures. Screening methods were described as water screening for cultural deposits and dry screening for sterile deposits. All trenches and features were to be photographed and mapped. Protocols were also provided for the recovery and documentation of human remains. No recommendation was made for a geoarchaeologist or geomorphologist to characterize the landform or describe trench profiles.

3.4.8.3 Findings

We found that the level of documentation of trenches monitored between August 19 and September 17, 2003, was inadequate. Photographs were taken of trench profiles, daily notes were maintained, a bag log of artifacts was maintained, and human remain discoveries were recorded. However we found no evidence that the trench profiles had been drawn and described in detail by a professional geoarchaeologist or geomorphologist. The goal of the monitoring was to characterize the site limits and integrity; but without these data, decision-making by the lead agency and future archaeologists working at the site is greatly hindered. Further, it is understandable that the removal of large concrete footings and other large historic era features would be more easily removed with a toothed bucket mounted on a backhoe; but because an archaeological site was being monitored, the toothed bucket should have been utilized with great caution. A backhoe with a straight edge blade should have been available for use in those areas free of large historic features.

The results of the second graving dock assessment were presented in a one-page memo by WSHS to WSDOT on October 7, 2003. The memo stated that over 80 trenches were excavated and monitored. The distribution of archaeological deposits in Areas A and C were described as “essentially unchanged” and a new area with intact deposits, Area D, was identified. The only description provided of the methods used is “Field methods were consistent with those presented in the WSDOT/LEKT Site Assessment Plan.” Foth & Van Dyke was provided with trench profiles drawn during the second site assessment. From the tabs under which these profile drawings and descriptions are organized, we assume that some of the methods discussed in the assessment plan had been followed. For instance, there are tabs labeled as boundary trench, pipeline, and sewer trench. These labels suggest that historically disturbed trenches were located and tested to potentially expose intact profiles along the trench boundaries. However, we were not provided with a map showing historic disturbances in relation to these trenches. The profile descriptions lack standardized terminology and do not represent the profiles of the entire trench length. Apparently only segments of the trench profiles were drawn. We did not learn how many archaeological features were identified, about the depth to native soil across the project area, or whether organic material was collected for obtaining radiocarbon dates. We received a draft report dated October 7, 2005, which we expected to include the results of all work WSHS had completed at the site after the initial November 2002 assessment. This draft report is still a

work in progress at the time of this writing (fall 2005) and did not address WSHS' monitoring activities or the second site assessment.

3.4.8.4 Recommendations

Recommendation No. 27: WSDOT should require well-documented and standardized field notes, maps, figures, progress reports, final reports, etc. of their archaeological consultants.

Progress reports should also have been required on a regular basis and especially at key events in the project timeline (see also Recommendation No. 15 above regarding WSDOT's responsibility for monitoring a consultant's progress). These notes and reports could have been used to help in the Section 106 consultation with the SHPO and tribe as well as for other agencies and intradepartmental briefings.

3.4.9 Data Recovery (April 2004 – December 2004)

3.4.9.1 Criteria

Data recovery is undertaken as a form of mitigation on an archaeological site determined to be eligible for listing in the NRHP and that will be impacted by a federal undertaking. Data recovery is conducted when the project redesign or protection in place are not feasible. A data recovery plan should be developed that provides details on research questions, excavation strategies, laboratory analyses, project schedule and budget. The data recovery plan should be flexible enough to allow for modification in the event of unanticipated opportunities for research. In some cases an MOA is executed by a representative of the federal agency, the SHPO, the ACHP, and sometimes Native American tribes. The essential element of a data recovery plan is the research design. A research design includes:

- ◆ Project background, recommendations, and agencies involved.
- ◆ Reasons for carrying out the data recovery, including why the site is important to provide information and why the site does not warrant an alternative treatment.
- ◆ Description of the site, the environmental setting, results of previous research, site chronology and site type.
- ◆ Defining of specific research questions, building on the results of previous investigations and how the site fits into regional cultural overviews or thematic contexts.
- ◆ If possible, defining research priorities (more attention to what is not well known, less attention to what is well known).
- ◆ Field and laboratory methods that will allow the recovery of data that related to the research questions.
- ◆ Identifying supervisory personnel and their qualifications.

- ◆ Other pertinent information (employment of tribal staff, creation of interpretive tours, publications for general public, etc.).
- ◆ Defining how the results will be presented.

3.4.9.2 Conditions

The MOA was signed on March 16, 2004, and stipulated that the Site Treatment Plan (same as data recovery plan) would be followed. The Site Treatment Plan will not be discussed in detail here. However, it should be pointed out that the key elements of a standard data recovery plan were generally followed during the fieldwork. On April 19, 2004, LAAS began working at Tse-whit-zen, under contract with WSDOT rather than the LEKT, simultaneously conducting data recovery by the excavation of 1 m by 1 m units and construction monitoring. Both non-tribal and tribal members were employed by LAAS. LAAS conducted hand excavation of 1 m by 1 m units in known archaeological site deposits and monitored construction activities in the remainder of the APE due to the high potential for encountering human remains and archaeological deposits. The grid established for the environmental testing was adopted by the archaeologists to test areas and clear them so that construction activities could proceed. Clearance was accomplished by monitoring trenches. An archaeologist and tribal member would monitor trenching as specified in the Site Treatment Plan.

If human remains were found, then construction would cease and a 50-foot buffer was marked with paint or fencing. A recovery team excavated the burials recording minimal data as defined in the Site Treatment Plan and then a tribal ceremony would be conducted by the tribal spiritual advisor. If archaeological material was encountered, excavation would proceed in lifts at depths specified in the Site Treatment Plan until sterile soil was reached. In these instances, the artifact locations were recorded and the artifacts were collected. When all archaeological material and human remains were removed from a trench that extended across the length of the grid, the area was declared clear. In September 2004, the LEKT had requested that all of the human burials be excavated by WSHS, not just those in the bioswale area. The tribe believed that WSHS supported their spiritual needs more than LAAS. Several burials were discovered by LAAS along the A sheet pile line. This area became known as Area E and LAAS requested that WSHS excavate them.

Work proceeded slowly with evermore archaeological material found daily. Frustration increased as the construction crew expected to meet the 2006 HCB “float-in” date. Several suggestions were made by WSDOT to speed up the fieldwork including the use of a mechanical screen and an emphasis on recovering unique rather than redundant features. Finding a supplier of a mechanical screen took several weeks and when this equipment was finally operational, it did not increase the amount of sediment that could be screened in a day. LAAS reported to having identified more than 1,400 features, but approximately half of them were only mapped and photographed rather than collected for analysis. Sampling strategies need to remain flexible in the event of finding new and important data, but the question must be asked whether changes to the sampling strategy are consistent with the goals of the research design.

The interviews we conducted with WSDOT and their archaeological consultants indicated that maintaining professionalism was not an easy task. An invisible line had developed between the two archaeological firms so that when an employee of one firm crossed into the other firm's "territory" the on-site coordinator had to step in. He described his role at times similar to a monitor at a children's playground. Tribal members and WSDOT personnel were the only individuals who apparently could move freely between the consultants.

The owner of LAAS and principal investigator at the Tse-Whit-Zen village site indicated that she lacked clear direction during fieldwork. No one was given ultimate responsibility to oversee the field archaeology to ensure that the Site Treatment Plan was being followed and for overall quality control. The principal investigator further indicated that various WSDOT staff provided conflicting information to her. One example she provided concerns the legal and professional obligation she had to maintain a certain level of documentation for human burials. According to the MOA, the guidelines set forth in the Site Treatment Plan were supposed to be adhered to during data recovery, yet the tribal liaison told her that she should let tribal members excavate human remains without archaeological supervision (i.e., without recordation).

A general comment by all interviewees was that the archaeological investigation produced a wide range of emotions from all participants including archaeologists. Although some of the tribal members felt a renewed sense of interest in their cultural history, they still felt immense heartache as a result of excavating human remains. The tribe in particular had strong spiritual concerns about disturbing and excavating their ancestors. A spiritual advisor was brought to the site to aid tribal members with their emotional needs. Ceremonies were performed when human remains were identified. For spiritual and cultural reasons, the tribe had requested (May 21, 2004) that all human remains be removed from the project area regardless of whether these remains were within the APE, which had been defined as the project's construction limits. The cultural and spiritual importance of the site was frequently perceived to be at odds with the bridge replacement "float-in" date.

3.4.9.3 Findings

During our interviews, we found two recurring themes that appeared to impact the data recovery effort. The first theme is a lack of clear direction and expectations. Neither LAAS nor WSHS was assigned as the lead archaeological consultant to oversee the fieldwork and try to build a working relationship based on good communication. Instead both firms appeared to stay on their company's side of an "invisible line." Internally, WSDOT staff did not have a standardized approach to field processes.

The second theme that recurred in many interviews was the overall "project schedule." The target "float-in" date dictated many actions in the field, such as changes in archaeological methodology (e.g., mechanical screening and fewer feature data recoveries). The loss of archaeological feature data cannot be justified for a site of such cultural richness and archaeological significance that is itself unique or special to the region. Defining "redundancy" of archaeological features at a site that is unique is problematic. Changes to a research design should be carefully considered before they are implemented. The Site Treatment Plan was

stipulated in the MOA as the document that would guide the fieldwork. Before methodological changes were made, the signatories to the agreement should have been consulted.

Tribal spiritual and cultural concerns and the schedule for completion of the project were perceived by many interviewees as competing priorities. The tribe wanted all of their ancestors excavated in a respectful manner regardless of the time required to accomplish that task. WSDOT wanted the HCB project delivered to meet the target “float-in” date. Resolution of these concerns is part of effective tribal consultation which was previously addressed in Subsection 3.4.5. The perceived differences in priorities, in approaches to consultation, and in the stark contrast between archaeological goals and spiritual needs all appeared to have contributed to the LEKT’s request to stop work at Tse-whit-zen.

3.4.9.4 Recommendations

Recommendation No. 28: Future WSDOT projects should identify a lead Principal Investigator (e.g., federally qualified archaeologist) and define his/her role in detail. Having one consulting firm act as a subconsultant to the other consulting firm would have alleviated many behavioral issues between companies.

Recommendation No. 29: WSDOT should make certain that signatories to an archaeological Memorandum of Agreement are consulted, and agree to any archaeological method changes in writing. The Site Treatment Plan was stipulated in the Memorandum of Agreement as the document that would guide the archaeological fieldwork. Changes to a research design should be carefully considered before they are implemented, and all MOA signatories should sign off on these changes.

4 Summary of Recommendations and Suggestions

JLARC charged Foth & Van Dyke with five of six study objectives outlined in the “Proposed Scope and Objectives” dated March 31, 2005, and which was entitled the “Review of Port Angeles Graving Dock Project.” The five objectives charged to Foth & Van Dyke include:

- ◆ Site Selection – Review WSDOT decisions to build a graving dock compared to use of a privately owned or privately developed site, and to choose the Port Angeles site relative to other locations. This review will include an evaluation of risk assessments applied to these decisions, including the type and quality of information available for each potential site.
- ◆ Environmental Permitting – Examine the role of the permitting process in site strategy and selection, including timing and interaction of environmental and archaeological assessments and the impact, if any, of permit streamlining activities.
- ◆ Archaeological Assessment – Evaluate the process used to conclude the Port Angeles site was unlikely to contain historic or archaeological resources, including an examination of the archaeology consultant’s work and oversight of that work by WSDOT and the Office of Archaeology and Historic Preservation.
- ◆ Interactions of Interested Parties – Review the agreements and consultations between WSDOT and local, state, and federal agencies and tribal representatives concerning the Port Angeles site, including the decision to permanently halt use of the site as a graving dock.
- ◆ Recommendations – Based on the information obtained from the review, identify lessons learned that can be incorporated into project procedures to minimize risks for future WSDOT projects.

The following is a stand alone list of summarized recommendations and professional suggestions from the more detailed and separate portions of Section 3 in this report. These recommendations and professional suggestions are presented in the order that they are first mentioned in Section 3.

Recommendation No. 1: Every new WSDOT process or improvement to an existing process should be accompanied by a mandatory implementation plan and followed by an evaluation plan. WSDOT Regions practice a high level of autonomy in their current organizational structure. Some regions may be slow to implement new processes and embrace new technology, thus depriving their staff and their projects of the best available resources. Process changes are not meaningful if they are not implemented and subsequently evaluated to determine if they accomplished the improvements intended. Though WSDOT’s Central Design Office had initiated several changes in project development processes and project reporting, several Region personnel, including the Hood Canal Bridge project manager, stated that they were not aware of the changes.

Recommendation No. 2: WSDOT should require the use of critical path scheduling of the project development processes used on complex projects. Project managers can be successful project leaders if they are able to foresee problems that inevitably occur on their projects and how these problems affect the schedule. With adequate lead time, hasty decisions can be avoided and well thought through decisions can be made with full understanding of the consequences and of possible new risks to the project.

Recommendation No. 3: WSDOT should require all project managers to have project leadership, management and responsibility training. The person in charge of a project needs more than management skills. He/she also needs leadership skills and needs to take responsibility. All too often, project managers spend too much time being information managers, dutifully filing reports on what has happened, and too little time being project leaders, determining what will happen. If a project is completed over budget, late, and with “surprises,” chances are that the project lacked a leader.

Recommendation No. 4: WSDOT should utilize “strategic partnering” to improve both intra- and inter-agency relationships. “Project partnering,” a technique for improving working relationships among participants in a construction project, has been used on a great number of WSDOT construction projects. The same technique can prove to be very effective in improving working relationships among the members of different agencies as well as members of different offices within one agency. This is “strategic partnering.” Unlike the “committee” approach to team building, which gathers *representatives* of the various work groups, “strategic partnering” calls for *all* members who interact together to participate in the partnering effort.

Recommendation No. 5: WSDOT should continue to expand the utilization of consulting firms for both project and program management. Our understanding from our interviews with WSDOT, like many state departments of transportation, is that WSDOT is witnessing a shortage of experienced project development engineers due to budget constraints and the retirement of engineers hired during the interstate highway construction era. This gap can be filled by utilizing consultants with the experience and expertise to provide assistance in not only managing projects, but also programs. In Wisconsin for example, WisDOT has contracted with engineering consulting firms for the management of the State Local Highway Improvement Programs and, most recently, for the management of the \$800 million Marquette Interchange Construction Program.

Recommendation No. 6: WSDOT should encourage and support the development of internal subject matter experts. A designer can save time and avoid some problems if he/she is able to consult a seasoned expert who has worked on similar projects. Across the country, our experience indicates that fewer state DOT in-house experts exist because of the ongoing retirement of engineers that entered the profession during the interstate highway construction era. Interviews with staff indicate that the remaining WSDOT experts may not be known to everyone in project development at WSDOT, possibly because of this retirement phase in engineering. Interviews indicate that in the past, each region had a cadre of experts. Everyone knew who they were and that they were readily available. Identifying the available WSDOT experts, publicizing their whereabouts, and encouraging designers to contact them can provide designers with

valuable resources. Freeing these experts from less value-added tasks and projects may be required.

Recommendation No. 7: WSDOT should develop greater project oversight by its headquarters' design, project management, and construction services. Provided with defined roles, responsibilities, and authorities, the personnel at headquarters can lend their experience and expertise to improve the project development process used on individual projects. Scheduling experts can see that projects, especially unique and complex projects such as floating bridges, need detailed and comprehensive schedules created and maintained for the duration of the projects. Construction experts can provide constructability and bidability reviews at critical stages of project development to assure the functionality of the plans and specifications. Project management experts can assure that the regions and project managers are fully utilizing the resources and procedures that will most benefit their projects.

Professional Suggestion A: WSDOT and other state agencies should conduct early planning and siting of coastal infrastructure projects. The State should continue, as they tried to do with the CTC site, to plan for future identified coastal industrial infrastructure requirements (e.g., a graving dock); however the State should act years in advance of actual need and recognize that each site will have a unique set of environmental factors, and probably permitting time frames. Determining the presence and extent of endangered species and marine habitat and thus ease of permitting at a location along the coast is critical for the construction of coastal infrastructure. The search for a viable coastline location is apparently a project in itself, and should be treated as such within WSDOT. Said differently, create a project team for the siting and planning of significant coastline infrastructure projects. Identify these potential sites well in advance of perceived needs, and perhaps purchase or lease the property, or obtain easements to “lock” them up for future needs. Perform a thorough due diligence on these sites before they are purchased, leased, or locked into an easement. These properties could be maintained as State property or eventually sold to a private party for future development, whichever is most beneficial to the State.

Professional Suggestion B: WSDOT should keep local officials in the project communications throughout the siting, permitting, and construction process. This can be done by having regularly scheduled meetings with local officials to provide them with first-hand updates on project progress and by inviting them to site visits. Local permitting agencies should be involved at the beginning of the permitting process and on a regular basis throughout the process.

Recommendation No. 8: WSDOT should incorporate ESA and fisheries considerations at the earliest possible opportunity for any transportation project with the potential for impact. Since regulatory considerations may dictate design (and cost) considerations, it makes sense to conduct a fatal flaw analysis regarding such concerns as early as possible. The entire coast is subject to these concerns.

Professional Suggestion C: WSDOT should explore the potential to establish a procedure for requesting a waiver or modification of environmental windows on a per-project, and justifiable basis. An example of such a procedure was developed by the Corps of Engineers, Philadelphia District, and the state of Delaware, for the Main Channel Deepening Project in Delaware Bay.

Professional Suggestion D: WSDOT and the resource agencies could address future inevitable fisheries and coastal habitat impacts from planned transportation projects by considering the potential for up-front compensatory mitigation applicable in a programmatic context. This would allow WSDOT to budget and plan more effectively, and take advantage of “moments of opportunity” in construction and maintenance activities where cost-effective improvements could be accomplished that exceed any reasonable assessment of impact. There are certainly some fisheries needs which would benefit the resource state wide. The applicability and extent such “credits” may be used for a given future project will be the contentious issue. Based upon our professional experience in other states, the regulatory community will likely resist this approach and the development agencies will want to apply the concept excessively, but there is a middle ground that is both beneficial to the resources and cost-effective in planning, permitting, and constructing projects. Tribal fisheries and fishing rights must be taken into consideration in any programmatic agreement, and tribal involvement in the process may be beneficial in restoration and stewardship of resources and habitats on a project basis.

Professional Suggestion E: Future WSDOT and other state agencies’ permit streamlining projects should initiate the inter-agency permitting team process as soon as the development project commences. The process should be included in the development project’s timeline. The inter-agency permitting team process should include a focus on communication between members. Resource agencies will have more input at the start of the process. Upfront agency involvement will aid in reducing the time involved with permitting. The team should formalize a collaborative approach to the project permitting. Identify at the start of the project which permit applications, public review periods, and public meetings can be combined, if possible, to reduce duplication of effort.

Professional Suggestion F: A third-party facilitator should be used to keep the inter-disciplinary permit streamlining team on track, address areas of concern, and help to improve communication especially regarding permitting processes and agency needs. With a better understanding of each other’s needs and requirements, the time involved in permitting can be reduced by decreasing the number of revisions/addenda required to get a permit issued. This would also allow the team members to focus their time on other pertinent issues.

Recommendation No. 9: WSDOT should promote stronger inter-agency permitting team leadership by finding someone who can not only provide a balance between the developer and regulator, but a focus for the overall team. This individual, to be effective, may need to be outside (or external to) the agencies represented, yet have some authority and a general working knowledge of the agencies. This accomplishment is easier said than done, because from our professional experience elsewhere in the United States, agencies typically are not receptive to external authority. Ideally, this individual would have working experience from both sides of the

developer-regulator agency line. Another suggestion may be a governor- or legislative-appointed individual who has the approval or respect of the different agencies; or, the IDT agencies vote for nominated leaders, with the developing agency or agencies having an equal number of votes as the regulatory/resource agencies. Leadership needs to address the handling of disputes more rapidly by creating side or “off-line” meetings to address individual issues and take advantage of established procedures (as originally proposed by the IDT charter). Finding a fair accord between the development and resource agencies is necessary. This leader must understand the need for development as part of economic growth; and also the need for the conservation practices required for, and economic uses of, natural resources. Characteristics of a good facilitator include being organized, focused, results-oriented, and working toward group goals, by effectively handling conflict and respecting all team members.

Recommendation No. 10: WSDOT and other state agencies should scope early in the inter-agency permitting team set-up process for the expertise needed and secure these team members for the inter-agency permitting team via an active, ongoing and collaborative form of communication. With the prevalence of cultural and archaeological resources, the relatively high numbers of federally recognized tribes, and the high potential for deeply-buried and well preserved archaeology sites in Washington, WSDOT should scope early in the planning process the potential need for having an archaeologist (and possibly geomorphologist/ Quaternary geologist) on any project where an IDT is assembled. The SHPO or its designee should be on the team. Socio-economic expertise should also be considered for the team in those areas that may have impacts to the economy and human behaviors; and would better represent the requirements found in NEPA and SEPA. WSDOT should allow for field reviews/site visits by the team members or potential team members early in the process, which may help individual team members (and their other agency technical experts) identify issues early on in the process.

Professional Suggestion G: “Proper Tool for the Proper Job.” Develop a culture inside of WSDOT that recognizes that tasks like the identification and conservation of, for example, fisheries, wetlands, shorelines, historic buildings, and archaeology sites are steps in the planning, design, and construction process. Engineers wish to work on engineering projects, which is all the more reason to have these experts working in their own field of expertise. Some DOTs across this country have developed such an understanding and have assigned their own experts (or hired outside impartial consultants) in areas such as archaeology, fisheries, wetlands, etc., to manage that part of their construction program (e.g., Vermont Transportation Authority). The end result is that these DOTs experience trust by the regulatory agencies. WSDOT needs to adopt the “right tool for the right job” approach to developing project teams, and they appear to have started heading in this direction. Many other DOTs also have difficulties adopting this suggestion. Common sense tells us that the public is not best served by having an archaeologist design a bridge anymore than a civil engineer deciding where and how to test for archaeology and how much that effort should take in time and expense. Likewise, the public is not served well by having a wetland biologist plan a highway corridor anymore than a highway planner writing a contractual scope of work for hydric soil delineations. Each profession has important elements of their job that are best recognized, interpreted, and implemented by those that are actually trained in that area, and that have a vested interest in updating their own professional (i.e., state-of-the-art) expertise.

Professional Suggestion H: WSDOT and other state agencies should start the inter-agency permitting effort as early as possible in a project timeline, and focus on communication among members (see Subsection 3.3.1.4) to help address many of the findings identified above.

In addition we suggest that the future inter-agency permitting teams “brainstorm” self-improvements for a more time- and cost-effective team and project management. Time and expenses, for example, may be reduced by:

- ◆ Using videoconferencing and moving meeting locations around.
- ◆ Following their own guidance document and use “off-line” meetings when topics do not involve the entire IDT.
- ◆ Using website technology such as a Sharepoint© website to keep IDT members up to date on permit application documents and to share resource information in a timely manner. This would eliminate the need to wait for information until the IDT meeting.

Create a database to track permitting timeframes and keep it on the Sharepoint© website.

Recommendation No. 11: WSDOT needs to ensure that objectivity and fairness are maintained and that knowledgeable reviewers assess the On-Call Contract proposals. WSDOT should record the full names and positions of every evaluator. More importantly, documentation of the consultant selection process, including the consultant submittals and evaluator score sheets, must be retained in accordance with the State’s retention schedules.

We further recommend that the members of the evaluation team sign a Conflict of Interest form, a practice common among many other state DOTs. Evaluators should not have a financial interest in the selection results.

Recommendation No. 12: WSDOT should add a geoarchaeology/geomorphology specialty, including deep-site testing, to the list of services in the Cultural Resource On-Call Contract scope of work for two reasons: 1) to enhance the multi-disciplined approach to archaeology and 2) to reduce the chances of identifying significant resources late in the project, particularly during the construction phase, which could impact both the project budget and schedule. The professional qualifications required of the person(s) conducting geoarchaeological or geomorphological investigations should be clearly defined by WSDOT. At a minimum the person(s) should include a postgraduate degree in geology, soil science or Quaternary studies and have field experience in the Pacific Northwest, or similar geologic settings. Make the qualifications worthy of, or parallel to, those required for the federally (U.S. Department of Interior) qualified archaeologist.

Recommendation No. 13: WSDOT should require continuing education and training for all WSDOT cultural resources specialists to ensure continuation of the Department’s core competency. This training should be taken through the Advisory Council on Historic Preservation (ACHP), the National Highway Institute (NHI), or other qualified institution (e.g., university). Members of WSDOT’s Cultural Resources Program typically attend cultural

resources classes sometimes in addition to outside courses offered by the ACHP and the NHI. WSDOT's cultural resources staff is their in-house team of experts who can assist project managers in fulfilling WSDOT's obligations under Section 106 of the NHPA. Train all of the many levels of WSDOT management to the cultural sensitivity required on some projects and in some localities. Managers also need to better understand what Section 106 consultation means and when it needs to be applied.

Recommendation No. 14: WSDOT should require their project managers to contact their Cultural Resources Program for all of their Section 106 compliance issues. Have a WSDOT cultural resources expert review the project, scope of work, and Area of Potential Effect (APE) before the project is completely designed, and consult early with stakeholders. WSDOT should use their in-house experts and outside sources for unusual projects to help them save time and expense. In addition, the final construction plans should also be reviewed by the Cultural Resources Program to document and minimize the changes to the APE. One potential savings would come from the possibility of avoiding high potential areas for archaeology sites.

Recommendation No. 15: WSDOT should implement methods to monitor a consultant's progress between major project milestones. Methods might include, for example, monthly or weekly consultant's project progress reports, meeting minutes, etc.

Professional Suggestion I: To enhance the learning process for managing project delivery, we suggest that WSDOT provide in-house mentoring programs to inform participants of the best practices in contract oversight. Mentoring would be voluntary, but could supplement what is learned in the mandatory class by providing "real world" examples as a learning tool for project managers.

Recommendation No. 16: WSDOT should divide management tasks between a project manager and technical expert on large and complex projects. The technical expert could be employed by WSDOT or could be an outside impartial consultant with archaeological expertise. A consultant may be compensated or provide the services voluntarily. An example of using outside specialists can be found on WSDOT's Website of Ethnobotany and Cultural Resources in Washington, which directs questions regarding ethnobotany to an employee of the Bureau of Land Management.

Recommendation No. 17: WSDOT should have a standard protocol for project documentation that includes writing monthly summaries and recording meeting minutes. Monthly summaries and meeting minutes are intended to provide useful information throughout the project. During our interviews, several stakeholders (consulting parties, agency officials, and consultants) commented that they were often times uninformed about project progress because they could not attend some meetings to which they were invited, and they were not invited to many of the informal meetings. The information gleaned from monthly summaries and meeting minutes could be used to compile monthly or bi-monthly newsletters or memoranda on project progress, which could be distributed to all of the stakeholders and, if appropriate, the public. This approach would be very useful on large projects such as the Port Angeles graving dock.

Recommendation No. 18: WSDOT should provide a detailed written description of the Area of Potential Effect (APE) to the consultant, and require that a detailed scope of work be submitted from the consultant as part of their proposal back to WSDOT. Any subsequent changes to the APE should be formally documented and discussed with regulatory agencies, Section 106 consulting parties, WSDOT's in-house experts, and WSDOT's archaeological consultant(s) performing the work. The type and extent of impact defined in the Request for Proposal will help the consultant determine appropriate testing techniques. One of the goals of the archaeological investigation should have been to address the depth of the fill, whether intact soils were buried below the fill and, if present, whether cultural material occurred in the buried soils and underlying strata. Appropriate methods should have been developed by the consultant in order to meet these objectives. Neither WSDOT nor their consultants should assume that there are no significant Pre-contact and/or historic archaeological sites in disturbed areas. A consultant should carefully consider environmental and historic features that were present before modern land-altering activities, and then apply the appropriate field testing program as defined in a detailed scope of work. Appropriate laboratory methods must be included in the scope of work as well as the identification of an artifact repository. Because the Principal Investigator is responsible for the quality of a project from the research design to the final report, the archaeological guidelines of many SHPOs and state agencies specify a percentage of time the principal investigator should spend on a field project. Provide a detailed written APE to WSDOT's consulting archaeologists inside their contract to protect both parties from misunderstandings. According to 36 CFR Part 800.16 the APE includes the geographic area in which direct and indirect impacts will occur within the project area. Both the direct and indirect effects of earth moving, vibration, noise, dewatering, settlement, oxidation, site truncation, liquefaction, etc. within the APE must be considered by the agency responsible for the undertaking.

Recommendation No. 19: WSDOT should continue to develop deep-site testing protocols to lessen the chances of missing a buried site in the future (See Subsection 3.4.6). This effort is in its infancy at WSDOT and was started after the identification of Tse-whit-zen. We further recommend that 1) a scope of work be carefully developed to complement a project's goals; 2) any techniques and descriptions for trenching or coring, if required for the project, should be described/represented in some standardized way within and between WSDOT projects (e.g., trench profiles and core logs should be drawn in a similar manner, written logs should have standardized terminology, etc.), and these data should be included in reports—preferably, as an appendix unless especially important to the report's findings; 3) any specialized studies should be conducted by trained professionals in the necessary field (i.e., landscape evolution should be defined by a geologist/geomorphologist); 4) all pre-field, field and lab methods should be described in a report; 5) all maps in a report should include a scale and north arrow; and 6) the weather conditions, particularly if they impacted the quality of the fieldwork, should be noted. WSDOT's current consultant report requirements are listed in WSDOT's Environmental Procedures Manual M31-11 (2004: 456-9).

Recommendation No. 20: WSDOT should initiate Section 106 consultation early because consultation lies at the core of the Section 106 process. Detailed project information and project changes, such as changes to the APE, need to be submitted to the SHPO as well as

tribes, and other federal agencies and stakeholders to maintain an informative dialogue. Meeting minutes should be taken and distributed to the consultants and other stakeholders for eliciting further comments, making corrections, and for future reference should disputes or other needs arise. Communication between public and tribal agencies must occur on a regular basis, project information and concerns need to flow freely between consulting parties, and each tribal and agency representative must work to develop a mutual understanding of the missions, goals, constraints (personnel and financial), and responsibilities of the FHWA, WSDOT, Tribes, SHPO, and other stakeholders as they relate to transportation projects.

Recommendation No. 21: WSDOT should consider coordinating with the FHWA to revise WSDOT's Programmatic Agreement to help ensure that FHWA meets its responsibilities for undertakings pursuant to Sections 106 and 110 of the National Historic Preservation Act; and that these changes should include several key stipulations that are based on current best practices promoted by other state DOTs and FHWA divisions. These key stipulations that follow below should not be interpreted to represent the only ones that need to be included in the revised Programmatic Agreement. The main stipulations identified herein include:

- ◆ WSDOT will continue to employ professionally qualified personnel that meet the requirements of 36 CFR 61. These personnel should include at least an archaeologist and a historian, but could also include a geomorphologist, ethnographer, and standing structure specialist.
- ◆ FHWA will coordinate and consult with WSDOT and with SHPO on unique or complex issues related to evaluations, assessment of effect, and data recovery/mitigation very early in the project planning process.
- ◆ All signatories will meet within a specified time (i.e., three, six, twelve months) after the agreement is initially implemented to evaluate its provisions and define ways to improve any unsatisfactory processes. These improvements should be re-evaluated within a specified time from their implementation. Then annual review of the agreement should take place as long as the PA is in effect.
- ◆ FHWA and WSDOT duties should be explicitly stated for major efforts in the Section 106 process.
- ◆ FHWA and WSDOT should commit to funding innovative programs to facilitate preservation planning. The types of programs that could be included are thematic surveys, deep-site testing protocols, testing at apparently disturbed locations, development of historic contexts, statewide or regional predictive models, or innovative public education programs.
- ◆ Define procedures and those responsible for carrying them out if previously unidentified archaeological or historic/architectural properties are identified during construction on any FHWA-funded projects.

- ◆ Define the procedures if previously unidentified human remains are discovered during archaeological fieldwork or during construction on any FHWA-funded projects.
- ◆ Define roles and responsibilities for tribal consultation.

A limited number of state DOTs are developing extensive Programmatic Agreements with the FHWA, SHPOs and the ACHP in an effort to further streamline the project delivery time. Delaware, Georgia, Wyoming, and New Jersey have implemented “minor projects” Programmatic Agreements. These Programmatic Agreements provide a list of DOT activities that have no effect on historic properties. The type of procedural Programmatic Agreements reduces the SHPO workload for the Section 106 review of individual projects. The Pennsylvania DOT has a minor projects Programmatic Agreement, but additionally the Programmatic Agreement allows the DOT’s “qualified professionals” to review certain categories of projects without SHPO or ACHP review. The California DOT’s (Caltrans) Programmatic Agreement delegates review authority to the DOT including the authority to make certain findings such as “no historic properties affected.” The documentation of these findings are made available to all consulting parties including the SHPO. The most extensive Programmatic Agreement, which includes stipulations for project review, making formal findings, and implementing mitigation measures to resolve adverse effects to historic properties, was implemented by the Vermont Transportation Agency (NCHRP 2005:23).

Professional Suggestion J: WSDOT’s long-term goal could be to work collaboratively with FHWA and SHPO toward developing a Programmatic Agreement with similar review authority and perhaps allowing WSDOT’s in-house experts to manage much of the Section 106 process. The previous Programmatic Agreement between WSDOT, FHWA and SHPO defined minor projects that were exempt from Section 106 review including certain types of previously disturbed locales (http://www.wsdot.wa.gov/environment/compliance/docs/MOA_ProgrammaticSection106.pdf). In order for WSDOT’s in-house experts to manage the Section 106 process, personnel with expertise in several disciplines would be necessary to create a team with greater cumulative expertise than either the SHPO or other consulting agencies or parties. The necessary expertise must include prehistoric and historic archaeology, history, and standing structures; and should include archaeological geology and ethnography. The latter two disciplines could be outsourced to consultants on an as needed basis. The programmatic agreement should explicitly state that the FHWA, to the extent possible under the federal law, has delegated its responsibilities for compliance with Section 106 to the professionally qualified staff of the Cultural Resources Program at WSDOT. Further, the programmatic agreement should indicate that the FHWA remains legally responsible for all findings and determinations mandated in 36CFR800 to the agency official.

Professional Suggestion K: To facilitate future government-to-government consultation, WSDOT may wish to request copies of constitutions from tribes who have an interest in Washington. The request for these tribal constitutions may go directly to the tribes or to the Bureau of Indian Affairs.

Recommendation No. 22: *WSDOT should continue to pursue the implementation of a formal plan as required by the Millennium and Centennial Accords signed by both the state of Washington and the state of Washington’s federally recognized tribes. WSDOT has already developed a formal plan as outlined in Executive Order 1025.00 and we recommend that they continue to build on this plan as they continue to implement procedural Programmatic Agreements with tribes living in or having ancestral homelands in Washington. WSDOT should consider coordinating with the FHWA when and where possible with continuing to develop procedural Programmatic Agreements with tribes who have ancestral homelands in Washington and live in or outside of the state.* Procedural Programmatic Agreements define the process that an agency will follow to comply with Section 106 responsibilities for a particular “type of project” or a particular “type of resource.” The types of Programmatic Agreements can reinforce the formal policies, as outlined in the State Accords and Executive Orders, which the federal agencies, state agencies, and tribes have agreed upon to initiate and maintain effective communication through government-to-government consultation. Procedural Programmatic Agreements often include state DOTs as parties to the agreements. The implementation of a procedural Programmatic Agreement can help streamline transportation projects and offer more certainty in the outcomes of project development. In Washington, the FHWA, with assistance from WSDOT, is currently working on Programmatic Agreements with several tribes, focusing on the tribes with Tribal Historic Preservation Officers. One Programmatic Agreement has been signed and three are in draft form (as of the summer/fall 2005). We recommend that some basic information be identified by WSDOT to be included in the FHWA’s procedural Programmatic Agreements, including:

- ◆ The geographic areas for which a tribe wishes to be consulted for Section 106,
- ◆ Designate a person at FHWA or WSDOT as a point of contact for cultural resources,
- ◆ Request that the tribe designate a person as a point of contact for cultural resources,
- ◆ Request how the tribe would prefer to be contacted about a project (letter, telephone call, meeting) and the type of project information (maps, photos, known archaeological sites, etc.) they would prefer to receive, and
- ◆ Request that the tribe specify which agency (FHWA or WSDOT) they prefer to initiate the consultation.

Recommendation No. 23: *The DAHP and possible interested stakeholders such as WSDOT should adopt or amend a set of guidelines for the application of geology in all archaeological investigations and evaluations. Trained earth scientists should be required or highly recommended in all phases of archaeological investigations. The DAHP, should revise the archaeological guidelines and standards on how to perform fieldwork, laboratory work, and report writing. Geologic field work and documentation both need to be standardized between projects that are presented to the DAHP.* Standards need to be developed and implemented for deep-site testing and the types of qualifications necessary to do this type of work. For example, a geomorphologist, geoarchaeologist, or archaeological geologist with parallel qualifications as

those required for archaeologists by the U.S. Department of Interior should be required on most projects within the state of Washington. The Association of Iowa Archaeologist's (1993) "Guidelines for Archaeological Investigations in Iowa" contains a well-thought out approach to using geology; but it still takes a diligent regulator to enforce this application. Too many non-geologists with incomplete training and limited experience believe that they have sufficient knowledge to fill that role; but our experience indicates that almost every project yields something different and not readily apparent to a less experienced observer in the science. As stated elsewhere in this report, "proper tool for the proper job." As a procedural example, an experienced geologist would request geotechnical information on a transportation project, and might suggest, if feasible, to coordinate with the geotechnical investigation to further save time and expense.

Recommendation No. 24: WSDOT, FHWA, and DAHP should work together to secure resources (funding and labor) to help produce some standardized geologic mapping/modeling across areas that are expected to have a large developmental need for archaeological surveys in the next five to ten years (see also Subsection 3.4.6.3.2. for resource suggestions). Mapping at the appropriate scale and detail may already be completed (preferably at 1:24,000 or larger scale) in some areas, and would need to be adjusted for archaeological potentials. Further guidance could be secured from multiple geologists or earth scientists that have completed such surveys around the country (e.g., Art Bettis, Iowa; Ed Hajic, Illinois and Minnesota; Curt Hudak, Minnesota and Iowa; Rolfe Mandel, Kansas), or from their clients (e.g., USACE, Rock Island District; Mn/DOT; and KDOT).

Recommendation No. 25: DAHP and consulting archaeologists should begin a dialog with geologists knowledgeable of Washington to discuss interpreted areas of high potential for deeply-buried sites. Quaternary geologists already have developed informal models of landscape evolution for different parts of Washington that may benefit the archaeological community. WSDOT and DAHP should both develop camaraderie with these geologists for consultative purposes. Perhaps the geologists are paid consultants, or perhaps for a small question, the work is gratis. Most geologists across the country working in Cultural Resource Management (CRM) are typically willing to offer their opinions on the chances of an archaeological site being in a particular location.

The DAHP and WSDOT might determine that they have a great need for CRM services coming up in a particular region or area of Washington during the next several years. Building a model of the area that assesses the potentials for finding intact archaeological sites provides a long-term time and cost savings to the greater CRM program of that particular region. The FHWA has sponsored such models in the past for other states through the Intermodal Surface Transportation Efficiency Act of 1991, PL 102-240 (ISTEA) and Transportation Equity Act for the 21st Century's (TEA-21) funding programs.

Recommendation No. 26: WSDOT, when defining the Area of Potential Effect (APE) on behalf of the lead federal agency, needs to consider what the impacts are to an archaeology site if subjected to vibration, settling/compaction, liquefaction, stress-strain, shearing, dewatering, flooding, oxidation, etc. caused by the undertaking. An archaeologist, other

pertinent technical experts, and the SHPO and THPO need to be consulted on the possible effects that might take place at and to the “site” given a set of circumstances predicted by the designers. If the construction methods or conditions change during the course of the project, then the APE should be re-evaluated. The safest means for avoiding this scenario of having to investigate a new APE during mid-construction is to assume at the beginning of the project before sites are found that the APE continues downward to a safe depth (i.e., archaeologically sterile unit or in a geologic environment with no chance for more archaeology to exist within or beneath this unit). State DOTs in Minnesota and Iowa, for example, rely upon the geomorphology or landform to help decide the depths of their APE’s (pers. communication, 2005, Mn/DOT archaeologist; Iowa SHPO archaeologist).

Professional Suggestion L: The DAHP should seek legislative authority to allow the DAHP to issue licenses for “Identification” surveys on all federally and state funded projects regardless of land ownership. This is one method for the DAHP to keep apprised of survey locations and purpose if lead agency does not consult with the SHPO early in the planning process.

Recommendation No. 27: WSDOT should require well-documented and standardized field notes, maps, figures, progress reports, final reports, etc. of their archaeological consultants. Progress reports should also have been required on a regular basis and especially at key events in the project timeline (see also Recommendation No. 15 above regarding WSDOT’s responsibility for monitoring a consultant’s progress). These notes and reports could have been used to help in the Section 106 consultation with the SHPO and tribe as well as for other agencies and intradepartmental briefings.

Recommendation No. 28: Future WSDOT projects should identify a lead Principal Investigator (e.g., federally qualified archaeologist) and define his/her role in detail. Having one consulting firm act as a subconsultant to the other consulting firm would have alleviated many behavioral issues between companies.

Recommendation No. 29: WSDOT should make certain that signatories to an archaeological Memorandum of Agreement are consulted and agree to any archaeological method changes in writing. The Site Treatment Plan was stipulated in the Memorandum of Agreement as the document that would guide the archaeological fieldwork. Changes to a research design should be carefully considered before they are implemented, and all MOA signatories should sign off on these changes.

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Appendix A

Timeline of Major Hood Canal Bridge and Graving Dock Project Events

Timeline of Major Hood Canal Bridge and Graving Dock Project Events

This timeline only includes events from documents that were made available to us, and from among those events that we believed were pertinent to the development of the project from October 1997 to December 2004, when the Port Angeles graving yard site project was halted. Sometimes key first examples of events were listed, but not all similar events were listed (e.g., discovery of human remains at the Port Angeles Tse-whit-zen site).

October 1997. WSDOT Bridge and Structures Office issued the report – “William A. Bugge Bridge Replacement Plan for the East-Half Floating Portion” (FVD0004). This report cited the deteriorated condition of the bridge, the limited and unreliable operation of the drawspan, and the risk of major storm damage as justification for replacing the bridge during the 2003-05 and 2005-07 biennia. A preliminary engineering schedule indicated that construction could begin as early as July 1, 2001.

November 1997. The Washington State Transportation Commission approved full funding for the preliminary engineering and design work for replacement of the east half of the HCB, originally constructed in 1961.

January 1998. Initial meetings of the project team included discussions of the use of plans on the shelf that would enable advertising for construction contracts as early as February 1999 if replacement of the bridge was required as soon as possible. Meeting minutes indicate that the primary impetus for replacement as soon as possible was the anticipated high maintenance costs of the existing structure. Considerable importance was placed on traffic mitigation plans for an expected six-week closure of the bridge in 2004. WSDOT’s expectation was that the pontoons and anchors would be fabricated at graving yards owned by Concrete Technologies Corp. (CTC) and Duwamish Ship Yards (DSY).

1999 Legislative Session. Funding for the preconstruction activities was shown in what was then called the "legislative book" of projects for the 1999-2001 budget.

April 1999. WSDOT personnel met with representatives of six construction firms to discuss scheduling, incentives/disincentives, public impact, constructability, and design. WSDOT indicated that it may reserve graving yards at CTC and DSY for contractor development. At this time, WSDOT was concerned that a single contractor could, by reserving the sites itself, discourage other contractors from submitting bids, and be apt to submit an inflated bid. (Due to a desire to get the project underway as soon as possible, WSDOT did not consider the possibility of rejecting such a bid and re-letting the contract.) At this time, the Department was considering only the CTC and DSY sites for the fabrication of pontoons and anchors. Records do not indicate that contractor development of a new graving yard site was considered at this time, nor was the possibility of fabrication of the pontoons at one site and the fabrication of the anchors at or near the bridge site considered.

May and June 1999. WSDOT personnel met with officials of CTC and DSY to discuss the suitability and availability of the combined sites for both pontoon and anchor fabrication.

July 1999. The task of assembling the plans for the bridge approach spans was assigned to the WSDOT Bridge Office.

December 1999. WSDOT Bridge Office and Olympic Region Office met to discuss plans for the bridge and approaches. The “plans on the shelf” needed to be revised to comply with current standards and mechanical and electrical plans needed to be developed for operation of the drawspan. No mention was made of permitting or graving yard issues.

2000 Legislative Session. Construction funding was included in plans submitted to the Legislature for work spread over the 2001-2003 and 2003-2005 biennia.

July 2000. WSDOT Bridge and Project Engineers Office met to discuss the use of contract incentives/disincentives to minimize traffic disruption during the closure of the bridge. A great deal of attention was being given to traffic mitigation and public outreach (\$10 million was budgeted).

July 26, 2000. WSDOT sent letters to the Skokomish, Suquamish, and Port Gamble Tribes initiating the Section 106 Process for the Hood Canal Bridge project.

September 2000. Annual meeting with WSDOT Olympic Region and the Office of Archeology and Historic Preservation to discuss cultural resource issues on upcoming projects, including the HCB, which focused on the historic portions of the bridge.

January 2001. The Project Delivery Team (PDT) discussed 1) moving the date of advertising the contract from December 2002 to April 2003 because of a funding issue; 2) using WSDOT to obtain the permits for the graving yard rather than leave it up to the contractor; and 3) using the Olympic Region office to explore advertising a Request for Proposals for other graving yard sites.

March 2001. The Project Delivery Team (PDT) discussed leasing the CTC site. The WSDOT Bridge Office reported that there had been a proposal from the Makah tribe to utilize a site at Neah Bay for the construction of pontoons and anchors.

May 29, 2001. WSDOT management team discussed advantages of acquiring lease of CTC graving dock to ensure availability. WSDOT staff also is in the process of consulting with Makah Tribe on the possibility of building a facility at Neah Bay.

May 29, 2001. The Permit and Efficiency and Accountability Chapter 47.06.C RCW legislation became effective (<http://apps.leg.wa.gov>)

October 2001. Work continued on a lease of the CTC site. WSDOT learns that the 5-acre layout site in lease is no longer available, and the lease needs modification. A Washington Department of Fish and Wildlife (WDFW) official recommended use of the old Rayonier paper mill site in Port Angeles for construction of the graving yard (not to be confused with the Port Angeles site that was eventually identified in June 2002 and later selected as the graving yard). The meeting minutes reported that the WSDOT Olympic Region Assistant Administrator stated that “. . . we

will not be using this site or cleaning it up as part of this project.” TPEAC Pilot Projects Subcommittee nominates three pilot projects for TPEAC approval. Hood Canal Bridge is one of the pilot projects selected. Concern was expressed that TPEAC’s possible selection of the Hood Canal Bridge (HCB) Project for a pilot project to streamline the permitting process could delay project development.

October 15, 2001. TPEAC Pilot Projects Subcommittee nominates three pilot projects for TPEAC approval: Hood Canal Bridge, SR 24 Bridge Replacement, and I-405/167 Interchange.

October 19 - 22, 2001. Communication with Skokomish, Suquamish and Port Gamble S’Klallam regarding TCPs in passing lanes near ferry service related to HCB bridge replacement.

November 2001. The project delivery team discussed traffic mitigation for an anticipated closure of the bridge in 2006. The environmental permitting process is cited as the driving force behind a delay from December 2002 to May 2003 for going to bid. Concern was voiced regarding the deteriorating condition of the existing anchor cables and the risk of losing the bridge in a storm if the project is delayed to 2007. At this time, WSDOT considered the Concrete Technology Corporation (CTC) graving yard site as “. . . the only commercial graving site.” WSDOT intended to work with CTC to address environmental mitigations required by resource agencies to be able to use this site.

November 19, 2001. TPEAC chair Senator Swecker and Secretary MacDonald sent a letter inviting tribal participation, including the LEKT, in TPEAC process. No tribal participation resulted from this invitation.

December 2001. The Project Delivery Team (PDT) was concerned that delays in the environmental permitting process could delay the “ad date” to April/May 2003 and that such a delay may result in increased cost risk. A WSDOT Headquarters Capital Program Management representative stated that funding would not be a reason for delaying the bridge. A suggestion was made by an unidentified member of the PDT to investigate a site at Port Gamble for potential construction of a graving yard, but was rejected by the Region Assistant Administrator. The Bridge Office representative expressed concern that if the permitting of a site is left up to the contractor, the project could be delayed.

December 2001. A WDFW official inspected the CTC site and subsequently wrote a letter to CTC listing measures necessary to avoid and/or mitigate environmental impacts from using the site for the fabrication of pontoons and anchors.

December 31, 2001. Initiation of Section 106 consultation with Jamestown S’Klallam Tribe for HCB bridge replacement.

January 2 - 3, 2002. Submittal of South Point Survey Report on the HCB to Skokomish, Suquamish, Jamestown S’Klallam and Port Gamble S’Klallam and requests information on traditional cultural areas.

January 10, 2002. Letter from WSDOT to SHPO concerning the Determination of Eligibility of Port Gamble and South Point sites and submittal of the cultural resources survey report covering the Hood Canal Bridge closure traffic mitigation sites (FVD0607 and FVD0608).

January 14, 2002. Minutes of the PDT state, in part, “Location for the graving dock has not been determined. Concrete Tech cannot deliver this project by itself – we need another location.” “At this time there are no known sites and we don’t expect to have the location of a graving site any time soon.” “Project Office will pursue an RFP for graving site to operate during specific time and for what.”

February 2002. The Project Delivery Team (PDT) was uncertain about the need to designate and permit a graving yard site but was fearful that if a site was not provided, the contractor may file a claim for additional compensation due to delays in obtaining permits. WSDOT realized that anchor fabrication could take place at a land site, not necessarily a graving yard. Publishing a Request for Proposals for a graving yard site is no longer considered due to the urgency to get the project underway in time to make the 2006 bridge closure date. Considerable discussion was devoted to the traffic mitigation plan. Direction was given to pursue sites for anchor fabrication.

March 2002. FHWA and WSDOT signed the Environmental Assessment (EA) of Hood Canal Bridge west-half retrofit and east half replacement on March 7, 2002. The EA was delivered to the agencies, local tribes, and public on March 18, 2002. No graving dock location was identified in this particular EA.

March 2002. The Interdisciplinary Team (IDT) was formed in response to the legislatively created Transportation Permit Efficiency and Accountability Committee (TPEAC). The IDT’s stated purpose was to “achieve all project permits by November, 2002.” The IDT included, among others, the Hood Canal Bridge Project Manager, the Olympic Region Assistant Administrator for Project Development, and, notably, the WDFW official who, in October 2001, had recommended siting the graving yard at an old paper mill site in Port Angeles. The Project Delivery Team (PDT) was uncertain about a plan for an anchor fabrication site.

April 2002. An announcement was made that an option for a lease has been obtained for use of the CTC site for pontoon fabrication through June, 2003 and renewable thereafter. The anchor fabrication site remained uncertain. The Makah Tribe was still interested in building a graving dock. The PDT determined that WSDOT should reserve a site for anchor construction.

April 15, 2002. An announcement was made that an option for a lease had been obtained for the use of the CTC site for pontoon fabrication through June 2003, and renewable thereafter.

April 25, 2002. Second IDT meeting. The team discussed initiation of tribal outreach. Suggestions were made to add the tribes with U&A at the bridge (Suquamish, Skokomish, Port Gamble S'Klallam, & Jamestown S'Klallam) to IDT due to fish and natural resource issues. Team assignments included meetings with Tribes to bring them up to speed and formal letter invitations to participate. (This communication does not represent consultation under Section 106.)

May 17, 2002. Cost Estimate Validation Process (CEVP) completed for Concrete Tech site. The process estimated less than 10 percent chance that the project would meet schedule expectations; likelihood of a more suitable site was thought to be between 60-70 percent; cost savings to WSDOT of the contractor moving the graving operation to another site could be between \$3-4 million.

May 21, 2002. The Biological Assessment (BA) for the Hood Canal Bridge was submitted to NOAA and USFW. The BA later required two addenda (see January 1, 2003, below). See February 18, 2003, and May 5, 2003, below for NOAA's/USFW's draft conditions and Biological Opinion, respectively.

June 2002. WSDOT was still looking for a site for anchor fabrication. A city of Port Angeles official requested on June 20, 2002, that consideration be given to siting a graving yard at another site in Port Angeles, owned by the Port of Port Angeles. Several Project Delivery Team (PDT) members visually inspected the site. Meanwhile, the IDT was discussing details about graving dock operations, pontoon moorage, etc. Resource agencies raised objections to near-shore anchor sites as well as concerns about possible juvenile salmon mortality and habitat impacts. WDFW and federal National Marine Fisheries Services (NMFS) indicated that the Biological Opinion (BO) would not be issued until the exact site specific ramifications of the graving dock fabrication could be assessed for endangered species.

June 6, 2002. A SEPA Determination of Non-Significance was issued for the Hood Canal Bridge replacement.

July 7, 2002. The Board of Clallam County Commissioners wrote to Governor Locke supporting the use of the Port Angeles locale for the graving dock (FVD0018).

July 9, 2002. WSDOT formally suggests the Port Angeles site as a graving yard location to the Interdisciplinary Team (IDT). WSDOT's commitment to the use of Port Angeles for the construction of a graving dock was solidified over the course of five months, from its introduction in June 2002 to the completion of the Archaeological Assessment in November 2002.

August, 2002. Minutes of the Interdisciplinary Team (IDT) meeting indicated IDT's support for the new Port Angeles site. WDFW insisted that a graving yard be designated and permitted before a contract was awarded for construction. Minutes of the project delivery team meeting indicated that no decision had been made for siting a graving yard. The Port of Port Angeles site was to be investigated for hazardous materials contamination.

September/October 2002. The Project Delivery Team was unsure about how to contract for the graving yard construction, but was pursuing a lease with the Port of Port Angeles. The IDT was extensively discussing construction details, possible future use of the site, etc.

October 21, 2002. The WSDOT Environmental Services Office requested a scope of work from an on-call consultant (WSHS) to perform an archaeological survey on the Port of Port Angeles property. On that same day, a Section 106 tribal consultation form letter was sent to the chairperson of the Lower Elwha Klallam Tribe (LEKT) to initiate consultation. This letter

described a transportation need in Clallam County to replace the east half of the Hood Canal Bridge beginning in spring 2003 and ending in 2007. WSDOT closed the letter with a request for response by November 23, 2002, to discuss the undertaking and the Area of Potential Effect.

October 28-31, 2002. Hart Crowser, Inc. logged eight geotechnical borings at the Port Angeles graving dock location for WSDOT. Within four of these borings, three observation wells and one test well were constructed. Other unlogged and temporary observation wells were constructed to assist with pump tests conducted on October 30-31, 2002.

October 30, 2002. WSDOT sends form letters that they describe as Section 106 tribal consultation letters to the Suquamish, Skokomish, Port Gamble S'Klallam, and Jamestown S'Klallam tribes to initiate consultation. This letter described a transportation need in Clallam County to replace the east half of the Hood Canal Bridge beginning in spring 2003 and ending in 2007.

November 12-15, 2002. WSHS performs first archaeological field assessment (investigation) at the Port Angeles graving dock site by using trenching and augering methods. Hart Crowser geotechnical logs from 1988, which were available to the archaeology consultant at the time of their November 2002 field assessment and before their December 23, 2002, archaeological draft report, indicated that fill depths ranged between approximately 2.5 and 14-17.5 feet. Fieldwork included 17 trenches to an average depth of 6-7 feet and nine (9) auger boreholes to 35-foot depths.

November 13, 2002. Hart Crowser, Inc. submits a draft memorandum to WSDOT on field pump testing and dewatering design for the Port Angeles graving dock location. This report mentions the planned need to dewater to 30-ft depths below the current land surface. Dewatering may be required both inside and outside of the sheet pilings proposed for the graving dock construction. This report included geotechnical logs previously described in 1988 and also recently described from fieldwork in October 2002.

November 18, 2002. Hart Crowser Inc.'s geotechnical and hydrogeological draft report on the Port Angeles site was submitted to WSDOT. This report included geotechnical logs previously described in 1988 and also recently described from fieldwork in October 2002.

November 19 - 20, 2002. WSDOT Regional Administrator announced WSDOT's decision to attempt to use Port Angeles as the graving dock site. WSDOT proceeds with permitting and lease arrangement with the Port of Port Angeles. WSDOT's Port Angeles Project Engineer's Office will develop the site plans for the graving yard. The graving dock footprint was rotated approximately 5-10 degree counterclockwise after the archaeological assessment was completed.

November 20, 2002. WSDOT news release quotes Governor Locke in stating that "The new graving site will result in 100 jobs for Port Angeles and provide a shot in the arm for the area economy." (FVD1651)

December 10, 2002. WSHS e-mailed a draft archaeological assessment report to WSDOT of their work at the Port Angeles graving dock site. The draft report did not include photographs or site maps to review. The final report was issued to WSDOT on January 6, 2003 (see below).

December 11, 2002. E-mail from LaTrisha Suggs, LEKT, to Randy Neff, WSDOT. Ms. Suggs states, “My opinion is that the Tribe is just concerned about Cultural resources that may be found and how will it be mitigated, and of course the environmental impacts.” (FVD2203)

December 23, 2002. WSDOT completed a SEPA Environmental Checklist for the Port Angeles graving dock site.

December 24, 2002 - March 4, 2003. The Shoreline Substantial Development Permit was submitted to the city of Port Angeles using JARPA. The City issued an exemption on January 23, 2003, and forwarded it to DOE for filing. DOE issued a filing letter on February 14, 2003, which began a 21-day appeal period. WSDOT appealed some of the locally-imposed conditions. The appeal was settled March 4, 2003.

January 1, 2003. The Biological Assessment was revised to add the Port Angeles graving dock site. This started the formal consultation with NOAA and USFW. Additional addenda were also issued for the graving dock.

January 6, 2003. WSHS issues a revised and final archaeological assessment report on the Port Angeles graving dock project locality (see Draft Report comment above dated December 10, 2002). No cultural resources were found, and monitoring is recommended below 4-foot depths during construction.

January 8, 2003. WSDOT submitted a Clean Water Act Section 404 Nationwide Permit 15 application to the USACE. Mitigation plans were then submitted on March 12, 2003. The USACE issued comments and WSDOT responded in April 2003. USACE requested an alternative analysis for graving dock location selection. The alternatives analysis was submitted May 9, 2003. Total time for permit issuance was over 4.5 months because the USACE wanted to review the Biological Opinion (BO) before issuing the permit.

January 8, 2003. The Clean Water Act Section 401 Water Quality Certification process was triggered by the USACE 404/10 permit application that was submitted on January 8, 2003. The 401 permit was issued May 29, 2003, and the 30-day appeal period began—which then ended June 29, 2003.

January 10, 2003. WSDOT applied to DOE for a Coastal Zone Management (CZM) permit. Concurrency was granted in concert with a conditional 401 Water Quality Certification on May 29, 2003. The 30-day appeal period ended June 29, 2003.

January 10 and January 13, 2003. WSDOT sent form letters along with WSHS’s report on two dates. On January 10, 2003, a letter was sent to the Skokomish, Suquamish, and S’Kallum (spelling in letter) (FVD0033, FVD0058, FVD0059). On January 13, 2003, a letter with the

same content was sent to the Port Gamble S'Klallam, Makah and LEKT (FVD0060, FVD0061, and FVD0062).

January 13, 2003. WSDOT sent letters regarding Section 106 consultation for the Port Angeles graving dock facility to the Lower Elwha Klallam Tribe (LEKT) and State Historic Preservation Office (SHPO). This letter announced that the on-call archaeological consultant had completed the survey of the property and had prepared a report, which was enclosed with each letter. WSDOT reported that no National Register eligible properties would be affected and no historic or archaeological resources had been discovered and a monitoring plan would be developed for inadvertent archaeological discoveries made during construction. Comments were welcomed from the SHPO and LEKT by WSDOT.

January 14, 2003. Letter from OAHF to WSDOT. The letter states that the OAHF “concur[s] with their [WSHS’s] recommendations and your [WSDOT’s] findings that no historic properties are in the area of potential effect. Thus, no historic properties are affected. We also concur with the proposed monitoring.”

January 14, 2003. Letter from LEKT to city of Port Angeles states “The Tribe is concerned with protection of water quality and marine habitat in the harbor as well as protection of cultural resources that might be unearthed as a result of this project.” The LEKT further state, “We have reviewed the application and wish to advance our comments for inclusion in review of the Shoreline Permit application for the proposed Graving Dock.” Eight points are listed regarding dredging, soil testing, air quality, sedimentation to Indian Creek, lack of stormwater references, listed fish, and the Klallam village site present throughout the harbor. (The City was not responsible for Section 106 on this federal undertaking and relied on the SEPA checklist prepared by WSDOT when the Substantial Shoreline Permit was approved.)

January 17, 2003 – March 17, 2003. WSDOT submitted the Hydraulic Permit Approval (HPA) application to the WDFW and later sent a revised application on January 29, 2003. WDFW issued the first draft permit January 30, 2003, with the final permit issued March 17, 2003. The issuance of the final permit then triggered a 30-day appeal process.

January 17, 2003 – April 8, 2003. WSDOT submitted the NPDES notice of intent (NOI) to the DOE, and the public notice was issued January 29, 2003. Comments were received February 14, 2003, and responses issued March 7, 2003. The NPDES permit was issued April 8, 2003. Overall it took about three months for the NPDES permit process.

January 22, 2003. city of Port Angeles approves Shoreline Substantial Development Permit.

January 22, 2003. The IDT meeting minutes indicate that the “Fisheries Biologist for the Lower Elwha Tribe, chose not [sic] IDT meetings. He is aware of the process underway to find a mitigation site for the graving yard and would like to be involved in this discussion.” (FVD2208) (The words “to attend” in reference to the IDT meetings are missing from the minutes.)

January 27, 2003. The state of Washington, the Grantee, received a Temporary Construction Easement from the Port of Port Angeles, the Grantor. (FVD1399)

January 28, 2003. The second Hart Crowser geotechnical and hydrogeologic report was issued on the Port Angeles graving dock. This report addresses settling and dewatering concerns at the site.

February 5, 2003. The LEKT responded to WSDOT with a letter agreeing with the findings. LEKT recommended that the project proceed with caution because of the historically known Klallam village, Tse-whit-zen, near the project area.

February 18, 2003. NOAA and USFW issued draft conditions on the Biological Opinion. The issuance of the draft conditions allowed the project to be bid. (See May 5, 2003, below for Biological Opinion.)

February 19, 2003. Washington's Executive Order EO10125.00 is enacted. This order states that WSDOT is to provide equitable and consistent standards for working with all tribes having ancestral homelands in the state of Washington.

March 7, 2003. WSDOT performs a NEPA reevaluation because of the addition of the Port Angeles site. No 4(f) lands were identified.

April 2003. WSDOT's consultant archaeology firm, WSHS, developed a monitoring plan which stipulated that the Port Angeles graving dock staging, parking, access roads and stormwater treatment planned areas would not require monitoring. Monitoring by a federally qualified archaeologist was recommended only during the construction of the graving dock "in those areas where excavations will exceed 4 feet in depth."

April 22, 2003. The monitoring plan was distributed to SHPO, Jamestown S'Klallam (FVD0069), Makah (FVD 1061), and LEKT, also copied to Turner and Secretary's office.

April 28, 2003. The Possession and Use Agreement was signed for the Port Angeles property (FVD1420).

May 5, 2003. NOAA and USFW issue a Biological Opinion on the Hood Canal Bridge and graving dock project.

May 9, 2003. WSDOT submits "Alternatives Analysis" to the USACE to help satisfy requirements of the Clean Water Act Section 404 Nationwide Permit.

May 29, 2003. The Clean Water Act Section 401 Permit is issued (see January 8, 2003, comments above).

June 16, 2003. LEKT issue an investigation on likely location of Tse-whit-zen village in the "Report on the Location of the Village of Tse-whit-zen Based on Analysis of the 1853 Map of False Dungeness Bay by the U.S. Coast Survey, June 16, 2003." (FVD0038)

August 16, 2003. During the removal of overburden by the construction contractors, a concrete footing was encountered that extended deeper than 4 feet. When the footing was removed, a

WSDOT employee noticed the presence of shell and contacted WSHS. After the shell was identified as a cultural deposit, the LEKT, SHPO, FHWA, and USACE were appropriately notified. At this point, communication with the LEKT began in earnest.

August 19, 2003. The WSHS archaeological monitor identifies first human remains at the Port Angeles site. Larson Anthropological Archaeological Services (LAAS) contacted by LEKT to become LEKT's consultant. LAAS archaeologist arrives at Port Angeles and reviews cultural material and general project area. Tribal chairman visits the site. USACE archaeologist visits site.

August 20, 2003. SHPO notified of site and discovery of human remains.

August 23, 2003. FHWA declares that archaeological data recovery is exempt from 4(f) rules.

August 25, 2003. Declaration of Emergency declared by WSDOT's Regional Administrator (FVD0040). Declaration of Emergency allowed for expenditures of up to \$80,000 for tribal expenses incurred from storing human remains at a funeral home.

August 26, 2003. Declaration of Emergency supposedly stopped construction work at Port Angeles at 10:45 a.m. The Shotwell Recycling soil stockpiles are examined by WSDOT, WSHS, and LEKT on August 26, 28, and 29, 2003. No human remains or artifacts were identified at Shotwell.

August 30, 2003. The LEKT held a ceremony for the spirits of those found at the graving dock. This ceremony was attended by WSDOT, WSHS, and Kiewit-General staff.

September 5, 2003. Archaeological Site Assessment Plan: 45CA523 Port Angeles, Prepared by Western Shore Heritage Services (FVD0521).

September 8, 2003. E-mail from SHPO to WSDOT indicating that she had given the Assessment Plan a "preliminary read" and that the OSA was currently reviewing the plan. SHPO provided initial comments on the Assessment Plan (FVD0328). Also on the same date, a letter from WSDOT to LEKT was sent requesting comments on the Site Assessment Plan (FVD0080). The Assessment plan was finalized on September 18, 2003.

September 11, 2003. Consultation meeting with LEKT and WSDOT. Also in attendance were SHPO, FHWA, Attorney General, USACE, WSDOT cultural resource specialist, LAAS, and WSHS.

September 15, 2003. Draft Archaeological Assessment Plan for 45CA523 and the Port Angeles Graving Dock Facility Area of Potential Effect (APE), Prepared by Lower Elwha Klallam Tribe and Larson Anthropological Archaeological Services Limited (LAAS).

September 18, 2003. Archaeological Assessment Plan for 45CA523 and the Port Angeles Graving Dock Facility Area of Potential Effect (APE), Prepared by The Washington State

Department of Transportation (WSDOT) and The Lower Elwha Klallam Tribe (LEKT), finalized. (FVD0091)

September 20, 2003. WSHS started fieldwork for the second archaeological site assessment on the Port Angeles graving dock locality after the site assessment plan was submitted to WSDOT on September 18, 2003. Fieldwork continued into October 2003.

September 22, 2003. WSHS discovered human remains and notified WSDOT. WSDOT notified other stakeholders.

October 2003 – March 2004. The SHPO, as a signatory, provided comments on the archaeological Memorandum of Agreement (MOA) and the Site Treatment Plan (STP).

October 7, 2003. WSHS's memo to WSDOT presenting a summary of their archaeological assessment completed on October 3, 2003. (FVD0092).

October 10, 2003. The SHPO concurred with the Section 106 Determination of Eligibility for the Tse-whit-zen village. Site areas A, B, C and D are eligible to the National Register of Historic Places under Criterion D. Larson Anthropological Archaeological Services Limited Port Angeles Graving Dock Facility Project Distribution of Archaeological Deposits at 45CA523 Identified During Archaeological Site Assessment, Prepared by Dennis E. Lewarch, Lynn L. Larson for Lower Elwha Klallam Tribe, October 10, 2003. The stated purpose of the report is: "This report documents LAAS' conclusions regarding site documentation of 45CA523 conducted between September 19, 2003 and October 3, 2003." (FVD0098)

October 23, 2003. LEKT sends letter to FHWA asking for direct communication with FHWA. Also requests to transfer remaining site area to LEKT, provide location for curation facility, and fund a curation facility and cemetery on the mitigation land. LEKT states that the option to minimize adverse impacts has long passed because of amount of land already under construction and destroyed.

October 27, 2003. Correspondence recognizing that the APE has changed to include bioswales and drainage system; SHPO recommended that a new monitoring plan, separate from the MOA, be developed for the bioswales and drainage system for the sake of efficiency. The SHPO requested site data from the second archaeological assessment (September – October 2003) conducted by WSHS, including trench profiles, geomorphology data, and a 3-D geomorphological model.

November 6, 2003. Letter from WSDOT to SHPO regarding WSDOT's submittal of the Port Angeles Graving Dock Facility Testing and Monitoring Plan for Drainage Facilities. The letter notes that the plan incorporates edits discussed in previous day's meeting with LEKT, WSDOT, FHWA and SHPO at the Lower Elwha Tribal Center (FVD0078).

November 10, 2003. WSHS owner has e-mail correspondence with WSDOT about the role of the geomorphologist at the Bioswale area. WSHS owner also indicates that there will be extensive historic fill and "...not much in the way of natural deposits..." at the Port Angeles site.

December 19, 2003. Letter from WSDOT describing WSDOT's commitment to the LEKT regarding several mitigation elements including: " the purchase of property, construction of a curatorial facility, supporting personnel and consultants costs associated with archaeological and legal activities, and the necessary work to conduct appropriate ceremonies, WSDOT can commit to a funding level in the total amount of \$3 million for the purpose of completing the mitigation program as described above either as a direct reimbursement to the Tribe or to other entities as appropriate." (FVD1152)

January 21, 2004. LEKT sends letter to Attorney General Office commenting on draft MOA. Letter states in a matter of words...because much of the site has been destroyed, the removal of remaining materials must be expedited because preservation in place is no longer an option if the graving dock is completed. The letter goes on to state that the WSDOT archaeological consultant threw away undisturbed shell midden and possible human remains.

January 25, 2004. The Attorney General's Office sends a letter to the LEKT indicating that WSDOT will hire LEKT's preferred consultant (LAAS) to develop the site treatment plan for the Tse-whit-zen site.

February 5, 2004. The LEKT returns a letter to the Attorney General's Office indicating that LAAS is loyal to the "resource", but that the tribe still wants to have real time access to information and would like to preserve the LEKT-LAAS relationship.

February 20, 2004. The FHWA goes on record to state that they can not provide funds for long term curation facilities. FHWA can, however, fund acquisition of sufficient land for reburial. Additional mitigation beyond Section 106 of the National Historic Preservation Act should not be included in the MOA.

March 2004. Quit Claim Deed signed March 23, 2004 (FVD1401); Real Property Voucher signed March 25, 2004 (FVD1470); Payment Voucher dated March 25, 2004 (FVD1471).

March 15, 2004. LAAS completes the WSDOT Port Angeles Graving Dock Facility Treatment and Monitoring Plans for the Tse-whit-zen Site (45CA523) and Shotwell Recycling Property Recovery, Port Angeles, Clallam County, Washington.

March 16, 2004. WSDOT, SHPO, LEKT, FHWA, and USACE-Seattle District executed the archaeological MOA. On the same day, a settlement agreement and release was executed between WSDOT and the LEKT for \$3,427,000.

April 1, 2004. LAAS is under contract with WSDOT to perform work at the Tse-whit-zen site.

April 4, 2004. WSHS completes Monitoring Plan for the Tse-whit-zen Area of Potential Effect.

April 19, 2004. LAAS and WSHS are both now working at the Port Angeles site.

May 21, 2004. Letter from LEKT to WSDOT and SHPO to request that WSDOT extend its excavation and re-interment of remains from the Stormwater Management/bio-swale area located in the upper graving dock area. (FVD0104 and FVD1222)

June 2, 2004. WSHS informs LEKT that there are burials on the A-Line where LAAS is working. LAAS objects to having WSHS screen LAAS' backdirt piles. LAAS needs WSHS notes, which were never provided although many requests were made.

July 13, 2004. WSDOT sends a letter to LEKT denying request to remove all burials at the greater Tse-whit-zen site. WSDOT will remove burials only within the Area of Potential Effect (i.e., construction area), with one exception; WSDOT will remove burials found immediately underlying the planned final deck floor of the graving dock facility.

August 6, 2004. LEKT sends letter to SHPO requesting work stoppage for sheet piling and graving dock floor because WSDOT is keeping burials in place on one side and not on the other. In-place burials will be subject to pile-driving vibrations, soil compaction, paving, and interment under an industrial site. WSDOT, USACE, FHWA, and Advisory Council on Historic Preservation (ACHP) were all copied on this letter.

August 10, 2004. Pile driving and paving was halted until consultation via conference call between LEKT, USACE, FHWA, WSDOT, and SHPO. WSDOT agreed to investigate burials in the northwest corner of the site and further pointed out that the LEKT could propose an amendment to the MOA, but WSDOT indicated that they had followed the original MOA to that point.

August 19, 2004. The ACHP responded to the above mentioned letter from the LEKT by indicating the MOA must be followed according to Section 106. That means that in this case the concerns raised by any MOA signatory (such as the LEKT) must first be brought to the attention of the FHWA (as the lead federal agency) and together they must consult to resolve the objection. If the LEKT remains in objection after consultation with the FHWA, then the ACHP encourages the LEKT to notify both the FHWA and ACHP. This notification is to inform the FHWA that they must seek further comments from the ACHP.

August 24, 2004. Almost one year after the Tse-whit-zen site discovery, the LEKT wrote to the FHWA and WSDOT urging that the "material circumstances" had changed since the MOA was signed (FVD1226). WSDOT had not yet provided all mapping and recovery data, project schedule, effects of construction and dewatering on burials, etc. LEKT urges that the material circumstances have changed. In particular, the tribe pointed out that the number of burials was greater than anyone had originally anticipated. The LEKT asked "How do we find and remove all of our ancestors' remains from the village site while still struggling to meet a bridge-upgrade schedule imposed by the transportation agencies?" WSDOT responded by proposing an archaeological investigation beyond the APE in one area.

August 30, 2004. The FHWA and WSDOT sent out a joint letter to the LEKT indicating that they disagree with the work stoppage. A good faith attempt will be made to investigate below

the project vertical APE to locate burials in the Northwest corner in order to avoid another year's delay to the project.

September 2, 2004. Action items from a meeting on this date include: LAAS to provide LEKT with coordinates of burials; WSDOT/LAAS to provide all raw data to LEKT; WSDOT to provide monthly summaries to MOA signatories; and LAAS/WSDOT to provide LEKT with new weekly burial maps. LEKT requested from the FHWA that WSHS remove all burials from this point forward.

September 8, 2004. LEKT sent a letter to FHWA and WSDOT seeking consultation on recovering burials from outside the FHWA-defined APE. LEKT believes that they are still in consultation. FHWA believes that they are in the MOA dispute resolution.

September 17, 2004. Letter from FHWA and WSDOT letter to LEKT addressing FHWA and WSDOT's plan to recover human remains. WSDOT believes that no "changes to the STP or MOA are required at this time." (FVD0109).

September 28, 2004. LEKT sent letter to FHWA and WSDOT indicating that sheet piles went deeper than vertical extent of APE as defined in MOA. The letter addresses 11 topics of concern to the tribe, including the tribe's preference to work with "WSDOT and WSHS staff on data and burial recovery" to the "maximum extent practicable, and consistent with contractual obligations." The LEKT states that they are "committed to working with the other consulting parties to get this solved, and we are encouraged by your proposal to establish a 'Joint Facilitation Team' for this purpose." (FVD0110)

October 14, 2004. The letter from LEKT to WSDOT/FHWA requests that dispute resolution be invoked. The tribe states that "we regard your September 17 letter as 'written notice' of an adverse decision regarding our reburial requests." Further the LEKT states that their letter of "September 28 constitutes timely notice of the Tribe's objection and its request that FHWA 'consult with the [Tribe] to resolve the objection,' as does this letter." (FVD0421).

October 26, 2004. WSDOT sent letter requesting FHWA's facilitation of dispute resolution per the MOA. LEKT requests dispute resolution as well, and requests an independent facilitation/mediation contractor. FHWA must determine if MOA was applied correctly.

November 1, 2004. LEKT sent letter to FHWA stating that all human remains need to be recovered from the archaeological deposits to be in compliance with Section 106 and Chapter 27.44 RCW. The LEKT does not agree that the MOA waives the DOT from compliance with state law. RCW Title 68 states that a cemetery can not be used for anything else until all graves are removed. LEKT further requests that the FHWA determine whether an EIS is required because WSDOT failed to assess the direct and indirect effects of the graving dock on the archaeology; that the MOA be revisited to ensure that the data recovery is commensurate with the site's value; and if the FHWA can not honor what the tribe understands, then the tribe requests that the project stop until an adequate MOA and Site Treatment Plan can be implemented.

November 18, 2004. SHPO letter to FHWA agreeing with WSDOT's study that compaction will not adversely impact the burials, but will entomb them; the vertical limits of construction represent the APE; the MOA stands in lieu of a permit to excavate Native American graves within the APE as defined in the original site treatment plan. (FVD1294)

November 19, 2004. LEKT sent letter to FHWA requesting formal consultation with the ACHP. The FHWA should not make a premature decision.

November 23, 2004. The FHWA determined that the terms of the MOA were still in effect and were correctly applied. FHWA determined that federal law does not require removal of burials and burial fragments under or adjacent to the APE. (FVD1349-FVD1352)

November 29, 2004. The USACE sent a letter to the FHWA offering an opinion that the compaction of archaeological materials will likely result in no adverse effect.

December 10, 2004. The LEKT requests permanent work stoppage at Tse-whit-zen village site.

December 14, 2004. The Advisory Council on Historic Preservation (ACHP) addresses six issues forwarded to them by the FHWA and LEKT under the dispute resolution clause of the MOA. The ACHP findings and opinions are as follows: 1) the MOA and Site Treatment Plan both remain valid; 2) the vertical and horizontal limits of the Area of Potential Effect (APE) are the construction limits, but may be greater than defined by the FHWA because of impacts to cultural and religious values that the LEKT associates with the remains of their ancestors, and that a "minimal effect" or a "finding of no adverse effect" is not the same as a "finding of no effect;" 3) the FHWA must provide whatever facilitation is needed so that all Section 106 consulting parties have the same information at the same time to help make informed decisions (the MOA states that monthly progress reports shall be submitted to all signatories, but it appears that such reports have not been submitted); 4) Section 106 of the NHPA and its implementing regulations require FHWA to make a reasonable and good faith effort to identify historic properties that may be affected, and the FHWA can do more work to demonstrate a "good faith effort" in this particular case; 5) the ACHP has no authority to comment on NEPA and the request for implementing an Environmental Impact Statement; and 6) despite the LEKT's legitimate concern that the FHWA and WSDOT make a better effort to find and recover burials under the project footprint, the ACHP does not recommend revising the existing MOA, but rather that the FHWA should write a new recovery plan for the remaining cultural resources. The ACHP also made several mentions of the lack of archaeological documentation such as progress reports and maps being a primary cause of problems in communication between the MOA signatories.

December 21, 2004. WSDOT publicly announced the termination of the Port Angeles graving dock project.

APPENDIX ONE – SCOPE AND OBJECTIVES

Review of Port Angeles Graving Dock Project

Conducted for the
Transportation
Performance Audit Board

Funded by the Legislative
Transportation Committee

SCOPE AND OBJECTIVES

MARCH 31, 2005



STATE OF WASHINGTON
JOINT LEGISLATIVE AUDIT AND
REVIEW COMMITTEE

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MANDATE

The Transportation Performance Audit Board (TPAB) and the Legislative Transportation Committee (LTC) have recently approved and funded a targeted set of performance measure reviews, performance audits, and studies to improve the efficiency and effectiveness of state transportation programs. The Joint Legislative Audit and Review Committee (JLARC) is to conduct several of these audits, including this review of the Port Angeles graving dock project.

BACKGROUND

As part of the Hood Canal Bridge east half replacement project, the Washington State Department of Transportation (WSDOT) required a site to build bridge pontoons. Known as a graving dock, this site was ultimately located at Port Angeles based on expected ability to meet pontoon construction needs and environmental permitting requirements.

Use of the Port Angeles graving dock site was subject to a number of local, state, and federal environmental and development permits, including compliance with the review process of the National Historic Preservation Act. A Cultural Resources Survey prepared for this review concluded that the graving dock site did not contain any historic properties and had a low probability of containing buried archaeological resources, but that a monitoring program should be in place. The State Office of Archaeology and Historic Preservation and the Lower Elwha Klallam Tribe agreed with these conclusions. After submission of relevant information and analyses, all required permits for the graving dock site were granted.

Soon after breaking ground on the site in August 2003, human bone fragments were discovered and construction work was halted. A Memorandum of Agreement to address future archaeological work, burial removals, and continued construction was entered into by the Federal Highway Administration and the Office of Archaeology and Historic Preservation and invited signatories WSDOT, the Lower Elwha Klallam Tribe, and the U.S. Army Corps of Engineers in March 2004. However, the discovery of a large number of human remains and substantial archaeological resources led to a December 2004 tribal request that WSDOT halt construction and abandon the site. Later that month, WSDOT announced a decision to stop work on the Port Angeles graving dock and pursue alternatives for constructing the Hood Canal Bridge pontoons.

STUDY SCOPE

This study will review the chain of events, starting with the initial Hood Canal Bridge replacement project, which led to the decision to construct a graving dock at the Port Angeles site and to the abandonment of that construction. The review will address legislative and TPAB member questions concerning the Hood Canal Bridge project and the graving dock. A timeline of events will be developed and an analysis of decision-making will be conducted regarding site selection, archaeological and environmental assessment, and interactions between WSDOT and tribal and governmental agencies. The study will also assess WSDOT procedures on unexpected situations and how they were applied in the decision to stop work at the graving dock site.

STUDY OBJECTIVES

1. **Site Selection:** review WSDOT decisions to build a graving dock compared to use of a privately owned or privately developed site and to choose the Port Angeles site relative to other locations. This review will include an evaluation of risk assessments applied to these decisions, including the type and quality of information available for each potential site.
2. **Environmental Permitting:** examine the role of the permitting process in site strategy and selection, including timing and interaction of environmental and archaeological assessments and the impact, if any, of permit streamlining activities.
3. **Archaeological Assessment:** evaluate the process used to conclude the Port Angeles site was unlikely to contain historic or archaeological resources, including an examination of the archaeology consultant's work and oversight of that work by WSDOT and the Office of Archaeology and Historical Preservation.
4. **Interactions of Interested Parties:** review the agreements and consultations between WSDOT and local, state, and federal agencies and tribal representatives concerning the Port Angeles site, including the decision to permanently halt use of the site as a graving dock.
5. **Fiscal Review:** provide a detailed analysis of expenditures on the Port Angeles site, including acquisition cost, compared to budgeted amounts. Assess the salvage value of WSDOT assets at the site.
6. **Recommendations:** based on the information obtained from the review, identify lessons learned that can be incorporated into project procedures to minimize risks for future WSDOT projects.

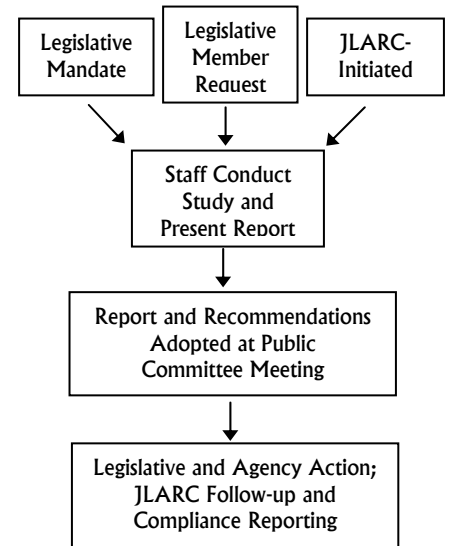
Timeframe for the Study

Preliminary report to be delivered to TPAB in December 2005, with a final report available in January 2006.

JLARC Staff Contact for the Study

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JLARC Study Process



Criteria for Establishing JLARC Work Program Priorities

- Is study consistent with JLARC mission? Is it mandated?
- Is this an area of significant fiscal or program impact, a major policy issue facing the state, or otherwise of compelling public interest?
- Will there likely be substantive findings and recommendations?
- Is this the best use of JLARC resources: For example:
 - Is the JLARC the most appropriate agency to perform the work?
 - Would the study be nonduplicating?
 - Would this study be cost-effective compared to other projects (e.g., larger, more substantive studies take longer and cost more, but might also yield more useful results)?
- Is funding available to carry out the project?

APPENDIX TWO – AGENCY RESPONSES

Agency responses will be included in the final report.

