

Susitna-Watana Hydroelectric Project Document

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1.1 Cultural Resources Study Plan

1.2 Requestor of Proposed Study

AEA anticipates resource agencies will request this study.

1.3 Responses to Study Request Criteria (18 CFR 5.9(B))

The Alaska Energy Authority (AEA) is preparing a License Application that will be submitted to the Federal Energy Regulatory Commission (FERC) for the Susitna-Watana Hydroelectric Project (Project). The application will use the Integrated Licensing Process (ILP); construction and operation of the Project as described in the Pre-application Document (PAD; AEA 2011). The results of this study and of other proposed studies will provide information needed to support FERC's National Environmental Policy Act (NEPA) analysis for the Project license.

Construction and operation of the Project as described in the Pre-application Document (PAD; AEA 2011) will impact cultural resources. The cultural resources study will enable the applicant and lead federal agency to meet the requirements of National Historic Preservation Act (NHPA) and its accompanying regulations (36 CFR 800), and other pertinent federal and State laws and regulations. It will also provide a basis for impact assessment; developing avoidance and protection (A/P) measures; developing protection, mitigation and enhancement (PME) measures; and developing resource management and monitoring plans.

1.3.1 Describe the goals and objectives of each study proposal and the information to be obtained.

The goal of the cultural resources study plan is to assess the effects of the proposed Project operations on cultural resources. Study issues identified in the Pre-Application Document (PAD; AEA 2011) and requests made by stakeholders are the basis for development of the proposed cultural resources study. The major objectives are as follows:

- Identify and define the Area of Potential Effect (APE);
- Identify consulting parties/Native Alaskan groups, and carry out consultation throughout the project;
- Identify and document cultural resources within the APE;
- Evaluate cultural resources within the APE to determine if they meet established criteria for inclusion on the National Register of Historic Places (NRHP);
- Identify and evaluate cultural resources within the APE for areas of indirect impacts;
- Determine the effects of the project on significant cultural resources;
- Develop information needed to prepare a Historic Properties Management Plan for the Project.
- _____
- _____
- ~~Prepare plans and procedures addressing unanticipated discoveries of cultural resources, human remains, and paleontological resources;~~
- ~~Prepare a Historic Properties Management Plan (FERC 2002); and.~~
- ~~Mitigation of affected Register-Eligible sites.~~

1.3.2 If applicable, explain the relevant resource management goals of the agencies and/or Alaska Native entities with jurisdiction over the resource to be studied. [Please include any regulatory citations and references that will assist in understanding the management goals.]

The term “cultural resources” is often used as a synonym for the legal term “historic properties” defined in the National Historic Preservation Act (NHPA) and its accompanying regulations (36 CFR 800). Historic properties include prehistoric or historic sites, buildings, structures, objects or districts eligible for listing on the National Register of Historic Places (NRHP) (36 CFR 800, 36 CFR 60). These may be resources such as archaeological sites (e.g., open-air campsites, stone chipping localities, game kill sites, and butchering sites), ~~cultural landscapes~~, traditional cultural properties (TCPs), sacred sites, and paleontological sites. In the study area, the vast majority of cultural resources are prehistoric archaeological sites. A number of laws and regulations apply to the treatment of historic properties in the vicinity of the Susitna-Watana Project.

Section 106 of the National Historic Preservation Act (16 USC § 470), as amended, requires that any federally funded, licensed, or permitted project consider the undertaking’s effects on cultural resources. The implementing regulations in 36 CFR 800 require that the lead federal agency consult with the State Historic Preservation Office (SHPO), Native American groups, local governments, and the public. The Section 106 process provides for identification and evaluation of historic properties, determination of effect, and a mechanism for resolution of any adverse effects (mitigation). In the case of prehistoric sites such as those found in the Project area, data recovery (excavation) and avoidance (if feasible) are the most likely approaches to mitigation.

The National Register of Historic Places is the nation’s inventory of historic properties that meet specific criteria of local, State, or national importance. In order for a property to be eligible for the National Register, it must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and significance under one or more criteria:

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

There are some exceptions to these four criteria such as properties achieving significance in the last 50 years, certain cemeteries or religious properties and other property types. Traditional Cultural Properties (TCPs) are places that are eligible for inclusion on the NHRP because of their association with the cultural practices and beliefs that are (1) rooted in the history of a community, and (2) are important for maintaining the continuity of that community’s traditional beliefs and practices (Parker and King 1990; Parker 1993).

Federal Legislation includes:

- Historic Sites Act of 1935 (16 U.S.C. § 1982)
- National Historic Preservation Act of 1966 (as amended in 2006) (16 U.S.C. § 470)
- National Environmental Policy Act of 1969 (42 U.S.C. § 4321-4347)

- Archaeological Data Preservation Act of 1974 (16 U.S.C. § 469)
- American Indian Religious Freedom Act of 1978 (42 U.S.C. § 1996)
- Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470aa-470ll)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. § 3001 et seq.)
- Paleontological Resources Preservation Act of 2009 (16 U.S.C. § 470aaa)

Federal Regulations include:

- 18 CFR 4: FERC Licensing, Permits, Exemptions, and Determination of Project Costs
- 18 CFR 380: Regulations Implementing the National Environmental Policy Act
- 36 CFR 60: National Register of Historic Places
- 36 CFR 79: Curation of Federally Owned and Administered Archaeological Collections
- 36 CFR 800: Protection of Historic Properties
- 43 CFR 7: Protection of Archaeological Resources
- 43 CFR 10: Native American Graves Protection and Repatriation Act

Federal Executive Orders (E.O.) includes:

- E.O. 11593: Protection and Enhancement of the Cultural Environment (1971)
- E.O. 12898: Environmental Justice
- E.O. 13007: Indian Sacred Sites (1996)

Alaska State Legislation includes:

- Alaska Historic Preservation Act (AS 41.35)

A number of ordinances, resolutions, and preservation plans may affect cultural resources at the local level, including Matanuska-Susitna Borough Ordinance 87-007 and Historic Preservation Plan (adopted 1987) and the State's Cultural Resource Management Plan for the Denali Highway Lands (VanderHoek 2011). This review does not include individual tribal or village council resolutions that may exist in the records of various Alaska Native organizations. Private lands are directly affected by federal cultural resources legislation, especially the National Historic Preservation Act and implementing regulations (36 CFR 800), as long as any aspect of the proposed action has federal involvement. Thus the Susitna-Watana Project will fall under the Section 106 review process regardless of land status within the Project area (Federal, State, municipal, or private). If any aspect of a project is affected by a federal undertaking (permit, license, or funding), then the federal review process applies to the entire Project area.

1.3.3. If the requestor is not resource agency, explain relevant public interest considerations in regard to the proposed study.

To be provided by the requesting agency, Alaska Native entity, or other state or local agency.
~~This study request is being prepared on behalf of AEA in order to assist resource agencies and other stakeholders meet the requirements of the FERC Integrated License Process in the timeframe required to implement the proposed 2013–2014 studies~~

1.3.4 Describe existing information concerning the subject of study proposal, and the need for additional information.

Between 1978 and 1985, archaeologists conducted cultural resources surveys, testing, and site excavations for the proposed Susitna Hydroelectric project and ancillary facilities (construction

camps, transmission lines, access roads). While the project proposed in the 1980s had a different footprint than the currently proposed Project, much of the areas overlap. For the 1980s project, annual and summary reports described over 270 sites which required some form of analysis and curation of associated artifacts (e.g., Dixon 1985; Dixon et al. 1985; Greiser et al. 1985, 1986). Another 22 previously-known sites were revisited and documented. Of the sites found, 111 were located through subsurface testing (resulting from ~ 28,000 shovel tests). Some 99% of the known cultural resources have not been evaluated for their eligibility for listing on the National Register of Historic Places, a necessary step in the Section 106 process required by the National Historic Preservation Act (36 CFR 800). Of the known sites, 87% have prehistoric remains, 2% have protohistoric remains, 10% have historic and modern remains and one site has paleontological remains. Advances in our understanding of the geoarchaeology of the region's stratigraphy, especially tephra deposits, requires a re-examination of the conclusions reached in the 1980s regarding site locations and distributions in time and space, and of the Project area's cultural chronology from a predictive modeling perspective.

More than a quarter century of modern archaeological research, aided by new methods and technology in Global Positioning Systems (GPS) and Geographic Information Systems (GIS), geoarchaeology, geochronology, stratigraphic analysis, lithic and faunal analysis, and ice patch research, have taken place in Alaska since the original Susitna work. Research in Southcentral and Interior Alaskan river drainages has demonstrated that the prehistoric cultural chronology and dynamics are far more complex than was believed (Dixon 1985). Of major pertinence, modern advances in radiometric dating techniques require a review of the radiocarbon dates from the Project area.

A cultural resources data gap report (Bowers et al. 2011) summarizes the available literature about cultural resources in the Project area, and reviews the cultural resources reports prepared during the 1978 to 1985 environmental studies. Data gaps identified include inadequacies in the location information of sites due largely to improvements in field and mapping methods since the 1980s (GIS, portable GPS units, better topographic maps), and advances with survey methodologies compared to those employed during the earlier research. The cultural chronology of the Project area needs re-examination due to more modern dating techniques (e.g., accelerated mass spectrometry [AMS] radiocarbon [^{14}C], optically stimulated luminescence [OSL]) and newer geoarchaeology [tephra] studies). Our understanding of prehistoric land use patterns has advanced through development of more sophisticated predictive models, which can be deployed for Susitna-Watana cultural resources field studies. Research documenting Alaska Native place names now exists, which was not generally available during the "legacy" studies of 1978-1985, and can be incorporated into predictive models and field survey strategies. Traditional Cultural Properties (TCPs) were not identified in the earlier studies, but are now considered a required element of any cultural resources research program. Some paleontological resources are legally afforded the same protection as cultural resources. In addition, recommendations for the development of a research program for cultural resources includes consultation with agencies, tribes, and interested parties, the development of protocols for unanticipated discoveries of cultural resources and/or human remains, paleontological resources, and artifact and records preservation, curation, and public education.

Elements for the proposed 2013-2014 Study are as follows.

Depending on how the APE is defined, as many as 270 known sites lie within in the Susitna-Watana impoundment, and along linear features and ancillary facilities. Additional sites undoubtedly exist in unsurveyed areas. The known sites will be re-located in 2013-14, accurate GPS data will be recorded and the site conditions verified. Phase I (Inventory) surveys will be conducted in areas not previously surveyed, or in areas that the 2012 predictive model identifies

as high potential for the occurrence of cultural resources. Phase II (Evaluation) studies will be conducted to assess eligibility of sites to the National Register of Historic Places. It is important to note that about 99% of the known cultural resources have not been evaluated for their eligibility for listing on the National Register of Historic Places, a necessary step in the Section 106 process required by the National Historic Preservation Act (36 CFR 800), and an important part of NEPA evaluations.

2013-2014 Fieldwork

- *Site Surveys (Identification Phase):* Applying the GIS-based predictive model developed early in the study, the 2013-2014 field efforts will begin within the Watana impoundment area. Then the survey will take place in the proposed Gold Creek, Chulitna, and Denali Corridors, and within proposed ancillary facilities (e.g., construction camps, laydown areas, transportation and communications sites, and material sites). To the extent possible, the study will make use of the 1978-1985 Phase I survey data (e.g., Bowers et al. 2011; Dixon et al. 1985; Greiser et al. 1985, 1986).
- *Site Testing (Evaluation Phase):* The 2013-14 field efforts will focus heavily on site systematic testing, with the goal of developing Determinations of Eligibility to the National Register of Historic Places for each site within direct and indirect impact areas. This will include the Watana impoundment zone, the proposed Gold Creek, Chulitna, and Denali Corridors, and within proposed ancillary facilities (e.g., construction camps, laydown areas, transportation and communications sites, and material sites).
- ~~*Mitigation: Once Determinations of Eligibility and Determinations of Effects have been completed, mitigation would take place. This would likely occur following the 2014 field season, after agreement documents (e.g., Programmatic Agreement) are in place, and quite likely during the construction phase of project development. The results of stakeholder consultation and agency involvement would be important components of any mitigation plans. Depending on individual site characteristics and the nature of Project impacts, mitigation would generally consist of avoidance, data recovery (excavation), preservation in place, public education, and/or additional documentation.*~~

Mapping-Related Activities

- *Synthesis of existing location data for known sites: (Scheduled for completion in 2012).*
- *Map site locations and environmental variables: (Scheduled for completion in 2012).*
- *Identify previous survey coverage: (Scheduled for completion in 2012).*
- *Add existing and baseline place names: (Scheduled for completion in 2012).*
- *Identify and map prehistoric resource locations (settlement patterns, historic land use): (Scheduled for completion in 2012).*

Synthesis and Analysis Activities

- *Develop historic contexts:* This is a task that will be largely dependent on the outcome of 2012 planning studies, fieldwork, analysis, and agency consultation. This will be a task for 2013-14.
- *Develop predictive model:* The model is designed to be iterative, and will incorporate new data as it becomes available in 2013-2014.
- *Update cultural chronology:* This is a task that will be largely dependent on the outcome of 2012 planning studies and 2013-2014 fieldwork and analysis. For this reason, this

work will be deferred until after field studies are complete. This will require collecting and analyzing samples at a number of sites for archaeometric analysis, radiocarbon dating, OSL dating, and tephrochronology (see Bowers et al. 2011).

- *Update and retrieve legacy records: (Scheduled for completion in 2012).*
- *Inventory 1978-1985 records:* See cultural chronology (above).
- *Identify and update information related to Traditional Cultural Properties:* TCPs are often held as a part of the oral history of Alaska tribes. While it is possible to conduct interview-based research to identify TCPs, it is expected this work can be done through the Subsistence work areas where interviews will be scheduled for related information dealing with Traditional Environmental Knowledge. ~~This topic may also be addressed as a part of the Government-to-Government consultation process between the Federal agencies and affected tribes.~~ The Project can provide technical support, for example in summarizing existing literature. TCP data can be gathered as part of other community-based studies such as subsistence (Simeone and Stern 2011). This effort will be targeted for the 2013-14 seasons.
- *Summarize paleontological records and develop site location model:* Thomas Bundtzen and Pacific Rim Geological Consulting (Fairbanks) will perform a geologic literature review of the Project area, relying as much as possible on the legacy records from the 1980s. From this, combined with knowledge of regional rock formations and geochronology, he will develop a model for the likely location of significant fossils. This effort will be targeted for the 2013 season.
- *Develop plan for unanticipated discoveries: (Scheduled for completion in 2012).*
- ~~Prepare historic properties management plan: This is a task that will be largely dependent on the outcome of 2012 planning studies and 2013-2014 fieldwork and analysis. The management plan logically falls within the planning process and development of Project Agreement Documents (e.g., Programmatic Agreement), developed in consultation with agencies and stakeholders. This plan will lay out mitigation options and strategies for sites that may be impacted (direct or indirect) within the project area.~~

Study Products

Study products to be delivered in 2013-14 would include:

- **Interim Reports.** Interim reports will be prepared and presented to the Work Group to provide study progress. Reports will include up-to-date compilation and analysis of the data and ArcGIS spatial data products.
- **ArcGIS Spatial Products.** Shape files of the 1980s and current cultural resources data will be created for the study area. All map and spatial data products will be delivered in the two-dimensional Alaska Albers Conical Equal Area projection, and North American Datum of 1983 (NAD 83) horizontal datum consistent with Alaska Department of Natural Resources (ADNR) standards. Naming conventions of files and data fields, spatial resolution, and metadata descriptions must meet the ADNR standards established for the Susitna-Watana Hydroelectric Project.
- **Final Reports.** Final Reports will be completed for each field season: 2012, 2013, and 2014. Reports will summarize the results of each field season, and will be presented to

resource agency personnel and other licensing participants, along with spatial data products. This will include recommendations regarding additional study needs to be addressed in subsequent field seasons. These will cover Identification and Evaluation Phases of the Project studies. Reports will follow FERC and SHPO protocols (36 CFR 800), will follow professionally-accepted standards, and will include site descriptions, site evaluations (Determinations of Eligibility), Determinations of Effect, and recommendations for mitigation.

1.3.5 Explain any nexus between project operations and effects (direct, indirect, or cumulative) on the resource to be studied and how the study results would inform the development of license requirements.

Construction and operation of the Project may result in damage or loss of cultural resources from construction or increased human activity in upper Susitna River basin. It is important that these resources are categorized and understood to identify protection, mitigation and enhancement measures. Many of the significant cultural resources would be mitigated either via removal (data recovery) or changes to project alignments (avoidance). The results of this work is needed to help comply with Section 106 of the National Historic Preservation Act and to prepare a Historic Properties Management Plan for the Project.

1.3.6 Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

This approach is consistent with standards set out by the 1999 revisions to the FERC's regulations at 18 CFR 380.12, 380.14, Appendix A to Part 380, and 385.2201, and the January 2001 revisions to the Advisory Council on Historic Preservation's regulations at 36 CFR 800.

1.3.7 Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

It is anticipated that completion of the work described above would require field work during the 2013 and 2014 field seasons, and Determinations of Eligibility would be completed by the end of 2014. In addition to the 2012 study effort, the costs of this study are approximately \$2-5 million, including field studies, data collection and mapping, analysis and reporting over the 2 year study period.

1.3.8 Literature Cited

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