

# Susitna-Watana Hydroelectric Project Document

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### **1.1. Transportation Resources Analysis**

### **1.2. Requestor of Proposed Study**

To be identified at a later date.

### **1.3. Responses to study request criteria (18 CFR 5.9(b))**

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

The goal of the Transportation Resources Analysis is to identify the potential impacts on existing local and regional transportation infrastructure and transportation operations resulting from Project construction and operations. The study will also identify potential measures to mitigate potential effects.

#### **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.**

Jurisdiction over transportation infrastructure and operations is shared by the Alaska Department of Transportation & Public Facilities (DOT&PF), the Alaska Railroad Corporation (ARRC), local governments and federal transportation agencies. These entities all have similar management goals for transportation and those include ensuring that roads, railroads, and aviation facilities have sufficient capacity for Project construction and operations (personnel, construction materials, construction equipment, other logistics, etc.) and that the safety of employees, contractors, the general public, and the environment are not compromised. The cumulative effects of existing traffic, construction traffic, and traffic from new sources must be evaluated. This will allow the AEA to recommend improvements to existing infrastructure to the DOT&PF, the ARRC, the Matanuska-Susitna Borough (MSB) and others.

#### **1.3.3. If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.**

The ~~primary benefit to the public of the~~ Transportation Resources Analysis will ~~be the assurance of public safety and adequate capacity.~~ The identification of hazards from increased traffic and recommendations to improve traffic flow will allow the project team to identify needed improvements to existing infrastructure and mitigate potential negative impacts on capacity and safety.

This report would also provide valuable information for the multidisciplinary analysis required under the National Environmental Policy Act (NEPA).

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

There is a wide assortment of information available regarding the existing transportation resources in the project area. This information includes recent transportation reports completed for the AEA, such as the transportation data gap analysis (HDR 2011) and access corridor

evaluation (DOT&PF 2012), reports developed for the Susitna Dam project in the 1980s, and other documents publicly available from the Matanuska-Susitna Borough (MSB), the Denali Borough, the DOT&PF, the ARRC, and the Federal Aviation Administration (FAA). There is also information in the *Pre-Application Document, Susitna-Watana Hydroelectric Project, FERC Project No. 14241* (AEA 2011) that identifies three alternative corridors leading to the dam site (one from the Denali Highway to the north, and two from the highway/railway corridor to the west).

There are four primary pieces of information necessary to gather and incorporate into the transportation analysis. At this time, the potential impact of the three alternative access corridors on the environment and the local area is unknown. This information will be gathered during the environmental studies that will be conducted beginning in 2012, including wetland delineations, vegetation mapping, wildlife distribution and use studies, as well as subsistence and cultural resource studies. The preferred corridor will be determined from the outcome of these studies, as well as engineering feasibility studies. Secondly, the type and size of roads, railroad facilities, and aviation facilities needed must be evaluated. The magnitude of these facilities will depend upon the third piece of needed information, which is the volume of construction materials, construction equipment, and personnel that need to access the project area both during and after construction. It is possible that the ideal mode of transportation may change during the construction and operation phase of the project. Lastly, the remaining information needed will be the size, quantity, and type of each transportation facility. This will dictate the types of fueling, maintenance, and operations facilities required.

Finally, rivers are often used for transportation in the region both during the winter and summer. The study will need to collect information on usage patterns on the river in winter and summer and to evaluate the potential for changes on this mode of transportation from the Project.

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

There are numerous transportation projects that have been studied or even scheduled for construction near the Watana Dam site. The cumulative effects on the existing transportation infrastructure of this project and the numerous other projects in the project area need to be evaluated. The Potential licensing requirements could include conditions on development, maintenance of transportation facilities, signalization requirements, or other limitations on levels and modes of transportation.

**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.**

The methodology consists of a six-step process to conduct this study. The first step is to review the transportation data gap analysis (HDR 2011) and the corridor evaluation studies (DOT&PF 2012) to develop a bibliography of existing documents. This will include any recent transportation reports mentioned in Section 1.3.4. The bibliography will also evaluate the relevance of each document to the overall study.

Next, information regarding transportation planning projects, design projects, and any scheduled construction projects will be compiled; these projects may address potential impacts from the Project, but this will need to be verified.

Third, a transportation asset inventory will be prepared, focused on roads, railroads, bridges, ports, air infrastructure, traffic levels, capacities, and accident statistics for the project area. Some traffic data may be available in reports identified in the bibliography; depending upon the type of data and the age of the data, traffic counters may need to gather current data. The *Parks Highway Visioning Document* already contains some current roadway traffic forecasts and baseline traffic data. Also, forecasts and baseline traffic data are available in the *Alaska Aviation System Plan* and the *Mat-Su Regional Aviation System Plan*, which were both developed by DOWL HKM. Both the MSB's long-range plan and the ARRC's system plan are scheduled for development in 2012.

After this, traffic levels will be evaluated and forecasted in coordination with DOT&PF. Future traffic levels and transportation infrastructure will be evaluated without the effects of the Project to establish a baseline for future traffic analysis. Future traffic, including dam-related construction and operations traffic, will then be forecasted and proposed improvements will be evaluated for adequacy in supporting construction and post-construction operations. This portion of the study will evaluate the three transportation/transmission corridors previously identified in Section 1.3.4; railroad loading and unloading facilities; proposed airport facilities; other facilities to support fueling, maintenance, and operations; possible staging areas; temporary improvements for construction; and any scheduled improvements, such as improvements proposed to the Denali Highway. Seasonal traffic will also be considered before construction, during construction, and after construction. The study may use *Trip Generation, 8<sup>th</sup> Edition*, from the Institute of Transportation Engineers to help forecast future traffic levels. Using *SimTraffic 8*, *Synchro 8*, and *Highway Capacity Software (HCS) 2010*, the project team can simulate and evaluate the current and future capacity of the road system. Forecasts for aviation traffic will be in accordance with Federal Aviation Administration (FAA) *Advisory Circular 150/5070-6B* and *Forecasting Aviation Activity by Airport* (July 2001). These methods of evaluating and predicting traffic levels are consistent with the standard practices of the transportation engineering community. For railroad traffic, the project team will simply have detailed discussions with the Alaska Railroad operations staff to ensure adequate capacity.

Lastly, the study will identify the direct, indirect, and cumulative transportation capacity and safety issues based on projected future road, railroad, and aviation traffic levels. All modes of transportation will be evaluated before, during, and after construction of the dam for a comprehensive analysis.

After identifying and evaluating the effectiveness of scheduled improvements on projected future traffic levels, the study will identify potential solutions to avoid, minimize, and mitigate any remaining capacity and safety issues. Some mitigation measures will consist of general best-management practices, such as widening shoulders and adding guardrails on roadways to improve safety. Other mitigation measures would apply to a particular mode of transportation at a specific site and location; for example, adding additional lanes and passing lanes along the Parks Highway, or adding siding tracks along the existing ARRC mainline to increase capacity.

**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.**

This six-step Transportation Resources Analysis, as proposed in this document, should be sufficient to provide the AEA with necessary information to evaluate the transportation effects caused by the project. The process can be carried out over one full study year; however the timing will need to depend on when Project features are more defined.

**1.3.8. Literature Cited**

AEA (Alaska Energy Authority). 2011. Pre-Application Document: Susitna-Watana Hydroelectric Project FERC Project No. 14241. December 2011. Prepared for the Federal Energy Regulatory Commission, Washington, DC.

DOT&PF (Alaska Department of Transportation and Public Facilities). 2012.

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HDR, Inc. 2011. Susitna-Watana Hydroelectric Project, Socioeconomic, Recreation, Air Quality and Transportation Data Gap Analysis. Unpublished, by the Alaska Energy Authority.

Institute of Transportation Engineers. 2008. Trip generation, 8<sup>th</sup> edition.

Trafficware. 2011. SimTraffic 8.

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