

# Susitna-Watana Hydroelectric Project Document

## ARLIS Uniform Cover Page

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FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, DC 20426  
February 23, 2012

OFFICE OF ENERGY PROJECTS

Project No. 14241-000 – Alaska  
Susitna-Watana Hydroelectric Project  
Alaska Energy Authority

**Subject: Scoping Document 1 for Susitna-Watana Hydroelectric Project  
(No-14241-000).**

The Federal Energy Regulatory Commission (Commission) is reviewing the Pre-Application Document (PAD) submitted by Alaska Energy Authority (AEA) on December 29, 2011, for the licensing of the proposed Susitna-Watana Hydroelectric Project (FERC No. 14314-000) (project). The proposed project would be located in the Matanuska Susitna Borough on the Susitna River at river mile 184 above the river mouth, approximately halfway between Anchorage and Fairbanks, Alaska. The small, unincorporated Native village of Cantwell, in the Denali Borough, is located about 45 air miles west of the proposed project dam, while Anchorage is approximately 180 air miles generally south of the project area. The project would occupy federal lands currently administered by the U.S. Bureau of Land Management (BLM) but selected for potential acquisition by the State of Alaska under the Alaska Statehood Act, state lands administered by the Alaska Department of Natural Resources, and private lands owned by Alaska Native Corporations and others.

Pursuant to National Environmental Policy Act (NEPA) of 1969, as amended, Commission staff intends to prepare an environmental impact statement (EIS) for the project, which will be used by the Commission to determine whether, and under what conditions, to issue a license for the project. To support and assist our environmental review, we are beginning the public scoping process to ensure that all pertinent issues are identified and analyzed, and that the EIS is thorough and balanced.

We invite your participation in the scoping process, and are circulating the attached Scoping Document 1 (SD1) to provide you with information on the project; to solicit comments and suggestions on our preliminary list of issues and alternatives to be addressed in the EIS; and to request any studies that would help provide a framework for collecting pertinent information on the resource areas under consideration necessary for the Commission to prepare the EIS for the project.

Commission staff will hold scoping meetings for the project to receive input on the scope of the EIS. These scoping meetings will be on March 26-29, 2012 at the time and place described below.

| DATE                      | TIME        | PLACE  |
|---------------------------|-------------|--|
| Monday, March 26, 2012    | 6pm – 10 pm | Loussac Library<br>3600 Denali Street<br>Anchorage, AK 99503                       |
| Tuesday, March 27, 2012   | 9am – 2pm   | Loussac Library<br>3600 Denali Street<br>Anchorage, AK 99503                       |
| Tuesday, March 27, 2012   | 6pm – 10pm  | Menard Memorial Sports Center<br>1001 S. Mack Drive<br>Wasilla, AK 99654           |
| Wednesday, March 28, 2012 | 6pm – 10pm  | Su-Valley Jr/Sr High School<br>42728 S. Parks Highway<br>Sunshine, AK 99676        |
| Wednesday, March 28, 2012 | 6pm – 9pm   | Caribou Café Banquet Room<br>187 Glenn Highway<br>Glennallen, AK 99588             |
| Thursday, March 29, 2012  | 6pm – 10pm  | Westmark Hotel & Conference Center<br>813 Noble Street<br>Fairbanks, AK 99701      |
| Thursday, March 29, 2012  | 6pm – 10pm  | Cantwell Community Hall<br>Milepost 133.1 on the Denali Hwy.<br>Cantwell, AK 99729 |

All interested agencies, local governments, non-governmental organizations, Alaska Native entities, and individuals are invited to attend any or all of the meetings. More information on the scoping meetings is available in the enclosed SD1.

The SD1 is being distributed to the Commission’s official mailing list (see section 10 of the attached SD1). If you wish to be added to or removed from the Commission’s official mailing list, please send your request by email to [efiling@ferc.gov](mailto:efiling@ferc.gov) or by mail to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, DC 20426. All written or emailed requests must specify your wish to be removed or added to the mailing list and must clearly identify the following on the first page: **Susitna-Watana Hydroelectric Project No. 14241.**

Please review the SD1 and, if you wish to provide comments, follow the instructions in section 6.0 *Request for Information and Studies*. If you have any questions about the SD1, the scoping process, or how Commission staff will develop the EIS for this project, please contact David Turner at (202) 502-6091 or [David.Turner@ferc.gov](mailto:David.Turner@ferc.gov). Additional information about the Commission's licensing process and the Susitna-Watana Hydroelectric Project may be obtained from our website, <http://www.ferc.gov>. The deadline for filing comments is **April 27, 2012**. The Commission strongly encourages electronic filings.

Enclosure: Scoping Document

Cc: Mailings List

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**SCOPING DOCUMENT 1**

**SUSITNA-WATANA HYDROELECTRIC PROJECT**

**FERC PROJECT NO. P-14241-000**

**Federal Energy Regulatory Commission  
Office of Energy Projects  
Division of Hydropower Licensing  
Washington, D.C.**

**February 2012**

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## 1.0 INTRODUCTION

The Federal Energy Regulatory Commission (Commission or FERC), under the authority of the Federal Power Act (FPA)<sup>1</sup>, may issue licenses for terms ranging from 30 to 50 years for the construction, operation, and maintenance of non-federal hydroelectric projects. The Alaska Energy Authority (AEA) filed its Notice of Intent (NOI) and Pre-Application Document (PAD) for the Susitna-Watana Hydroelectric Project P-14241-000, on December 29, 2011, and will use the Commission's Integrated Licensing Process (ILP) to develop its license application.

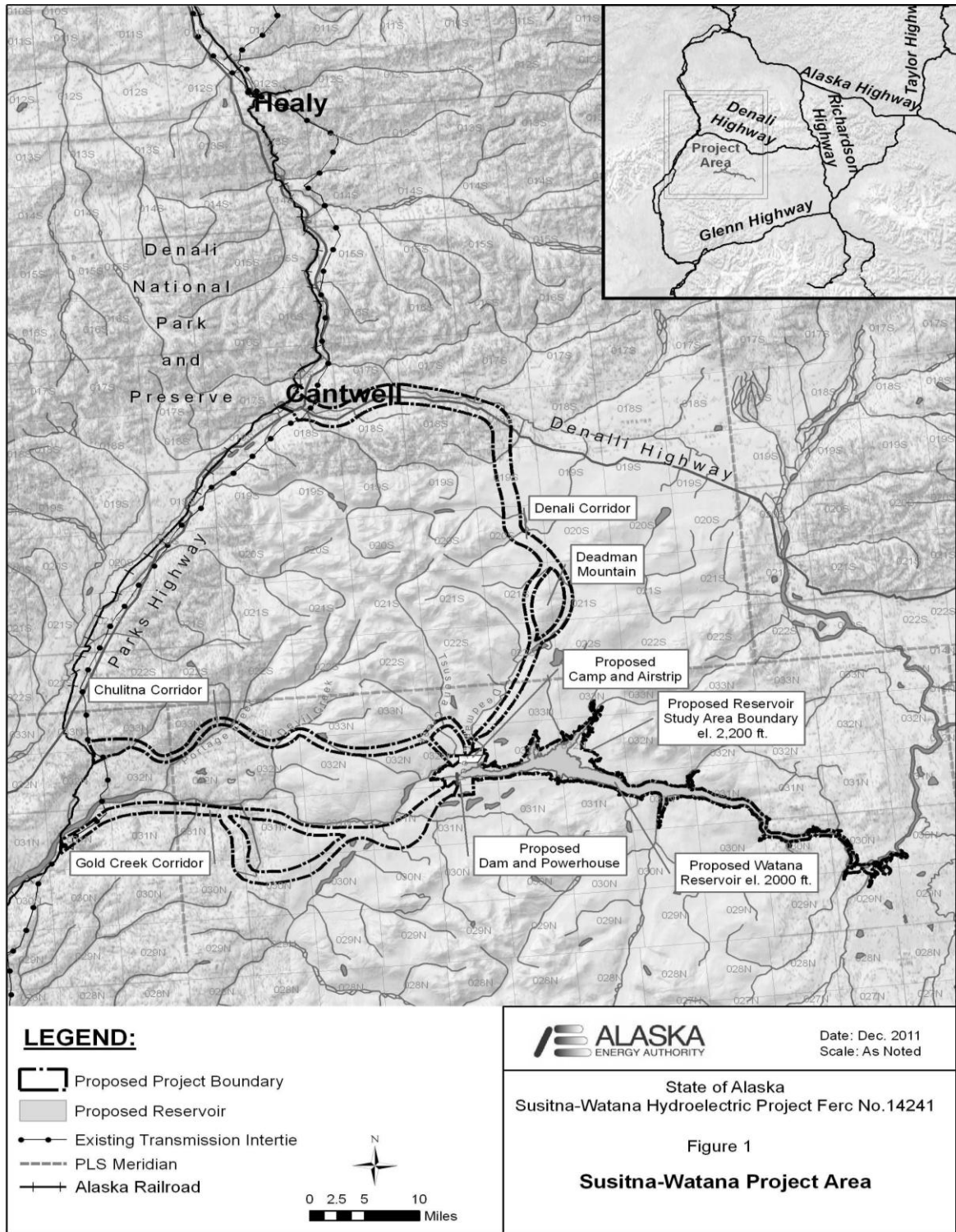
The proposed project is located in the Matanuska-Susitna Borough on the Susitna River at river mile 184 above the river mouth, approximately halfway between Anchorage and Fairbanks, Alaska (Figure 1). The small, unincorporated Native village of Cantwell, in the Denali Borough, is located about 45 air miles west of the proposed project dam, while Anchorage is approximately 180 air miles generally south of the project area. The project would occupy federal lands currently administered by the U.S. Bureau of Land Management (BLM) but selected by the State of Alaska under the Alaska Statehood Act, state lands administered by the Alaska Department of Natural Resources, and private lands owned by Alaska Native Corporations and others.

The proposed project would consist of a 700- to 800-foot-high by about 2,700 foot-long, concrete gravity or rock-filled dam that would create an approximately 39-mile-long reservoir with a surface area of 20,000 acres and 2,400,000 acre-feet of usable storage capacity. Optimization studies are ongoing, but the capacity of the project is expected to be between 600 and 800 megawatts (MW) depending on results of future updates to the Railbelt Integrated Resource Plan. An approximately 40- to 50-mile-long road and transmission line corridor would be constructed along one of three alternative routes (i.e., Chulitna, Gold Creek, or Denali). The project would be operated in a load-following mode such that firm power is maximized during the critical winter months of November through April to meet the Railbelt utility load requirements. The estimated annual generation would be 2,500,000 gigawatt-hours (GWh). A detailed description of the project is provided in section 3.0.

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<sup>1</sup> 16 U.S.C. §§ 791(a)-825(r)(2006).





**Figure 1. Susitna-Watana Project Area**

The National Environmental Policy Act of 1969 (NEPA)<sup>2</sup>, the Commission's regulations, and other applicable laws require that we independently evaluate the environmental effects of the proposed project and reasonable alternatives. Based on the Commission staff's analysis of the issues, staff will prepare an environmental impact statement (EIS) that describes and evaluates the probable effects, including an assessment of the cumulative effects, if any, of the proposed action and alternatives. The EIS preparation will be supported by a scoping process to ensure identification and analysis of all pertinent issues.

## **2.0 SCOPING**

Scoping Document 1 (SD1) is intended to advise all participants as to the proposed scope of the EIS and to seek additional information pertinent to this analysis. This document contains a brief description of: (1) the scoping process and schedule for the development of the EIS; (2) the proposed action(s) and alternatives; (3) preliminary identification of environmental issues and proposed studies; (4) a request for comments and information; (5) a proposed EIS outline; and (6) a preliminary list of comprehensive plans that are applicable to the proposed project.

### **2.1 Purpose of Scoping**

Scoping is the process used to identify issues, concerns, and opportunities associated with a proposed action. The process, according to NEPA, should be conducted early in the planning stage of the project. The purposes of the scoping process are as follows:

- invite participation of federal, state, and local resource agencies, Alaska Native entities, non-governmental organizations (NGOs), and the public to identify significant environmental and socioeconomic issues related to the proposed project;
- determine the resource issues, depth of analysis, and significance of issues to be addressed in the EIS;
- identify how the project would or would not contribute to cumulative impacts in the project area;

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<sup>2</sup> National Environmental Policy Act of 1969, as amended (Pub. L. 91-190.42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, §4(b), Sept. 13, 1982).

- identify reasonable alternatives to the proposed action that should be evaluated in the EIS;
- solicit, from participants, available information on the resources at issue, including existing information and study needs; and
- determine the resource areas and potential issues that do not require detailed analysis during review of the project.

## 2.2 Comments, Scoping Meetings, and Site Visit

During the preparation of the EIS, there will be several opportunities for the resource agencies, local governments, Alaska Native entities, NGOs, and the public to provide input. These opportunities occur:

- during the public scoping process and study plan meetings, when we solicit oral and written comments regarding scope of issues and analysis for the EIS;
- in response to the Commission’s notice that the project is ready for environmental analysis; and
- after issuance of the draft EIS when we solicit written comments on the EIS.

In addition to written comments solicited by this SD1, Commission staff will hold seven public scoping meetings in the vicinity of the project. A daytime meeting will focus on concerns of the resource agencies, NGOs, and Indian tribes, and the evening meetings will focus on receiving input from the public. We invite all interested agencies, local governments, Alaska Native entities, NGOs, and individuals to attend one or more of these meetings to assist us in identifying the scope of environmental issues that should be analyzed in the EIS. The times and locations of the 2012 scoping meetings are as follows:

| <b>DATE</b>             | <b>TIME</b> | <b>PLACE</b>   |
|-------------------------|-------------|--|
| Monday, March 26, 2012  | 6pm – 10 pm | Loussac Library<br>3600 Denali Street<br>Anchorage, AK 99503 |
| Tuesday, March 27, 2012 | 9am – 2pm   | Loussac Library<br>3600 Denali Street<br>Anchorage, AK 99503 |
| Tuesday, March 27, 2012 | 6pm – 10pm  | Menard Memorial Sports                                       |

|                           |            |   |
|---------------------------|------------|---|
|                           |            | Center<br>1001 S. Mack Drive<br>Wasilla, AK 99654                                     |
| Wednesday, March 28, 2012 | 6pm – 10pm | Su-Valley Jr/Sr High School<br>42728 S. Parks Highway<br>Sunshine, AK 99676           |
| Wednesday, March 28, 2012 | 6pm – 9pm  | Caribou Café Banquet Room<br>187 Glenn Highway<br>Glennallen, AK 99588                |
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| Thursday, March 29, 2012  | 6pm – 10pm | Cantwell Community Hall<br>Milepost 133.1 on the Denali<br>Hwy.<br>Cantwell, AK 99729 |

In order to be able to visit the site in a snow and ice free condition, the Commission staff previously conducted a site visit with AEA and interested parties on August 29, 2011.

The scoping meetings will be recorded by a court reporter, and all statements (verbal and written) will become part of the Commission’s public record for the project. Before each meeting, all individuals who attend, especially those who intend to make statements, will be asked to sign in and clearly identify themselves for the record. Interested parties who choose not to speak or who are unable to attend any of the scoping meetings may provide written comments and information to the Commission as described in section 6.0. These meetings are posted on the Commission’s calendar located on the internet at [www.ferc.gov/EventCalendar/EventsList.aspx](http://www.ferc.gov/EventCalendar/EventsList.aspx), along with other related information.

Meeting participants should come prepared to discuss their issues and concerns as they pertain to the project. It is advised that participants review the PAD to prepare for the scoping meetings. A copy of the PAD is available for review at the Commission in the Public Reference Room or may be viewed on the Commission’s website ([www.ferc.gov](http://www.ferc.gov)), using the “eLibrary” link. Enter docket number P-14241 to access the documents. For assistance, contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or toll free at 1-866-208-3676, or for TTY, (202) 502-8659. A copy of the PAD is also available for inspection and reproduction from AEA. Please contact:

Emily Ford  
Alaska Energy Authority  
411 West 4<sup>th</sup> Avenue, Suite 100  
Anchorage, Alaska 99501  
907-771-5955  
[Eford@aidea.org](mailto:Eford@aidea.org)

Following the scoping meetings and comment period, all issues raised will be reviewed and decisions will be made about the level of analysis needed to address the issues. If preliminary analysis shows that any issues presented in this scoping document have little potential for causing significant effects, the issue(s) will be identified and the reasons for not providing a more detailed analysis will be given in the EIS.

If we receive no substantive comments on SD1, then we will not prepare a Scoping Document 2 (SD2). Otherwise, we will issue SD2 to address any substantial comments received. The SD2 will be issued for informational purposes only; no response will be required. The EIS will address recommendations and input received during the scoping process.

### **3.0 PROPOSED ACTION AND ALTERNATIVES**

In accordance with NEPA, our environmental analysis will consider the following alternatives, at a minimum: (1) the no-action alternative; (2) AEA's proposed action; and (3) alternatives to the proposed action that may be identified.

#### **3.1 No-Action Alternative**

The no-action alternative is license denial. Under the no-action alternative, the project would not be built and environmental resources in the project area would not be affected.

#### **3.2 AEA's Proposed Action**

##### **3.2.1 Project Facilities**

The proposed project would be located at river mile 184, which is roughly 90 river miles northeast of the community of Talkeetna. The proposed project would consist of the following: (1) a 700- to 800-foot-high, approximately 2,700-foot-long, earth embankment, roller compacted concrete or concrete faced rockfill dam; (2) a 39-mile-long reservoir with a surface area of 20,000 acres and 2,400,000 acre-feet of usable storage capacity at a normal water surface elevation

of 2,000 feet mean sea level;<sup>3</sup> (3) a powerhouse with a minimum of three generating units and a total installed capacity of 600 to 800 MW; (4) a 40- to 50-mile-long road and 230-kilovolt (kV) transmission line corridor that would be constructed along one of three alternative routes (i.e., Chulitna, Gold Creek, or Denali); and (5) appurtenant facilities. The estimated annual generation would be 2,500,000 GWh.

Access to the project would be via a new road and by air. The access roads and transmission facilities would be located in the same corridor to the extent practicable. Three corridors are currently being evaluated: Chulitna, Gold Creek, and Denali Highway. The Chulitna and Gold Creek Corridors would accommodate east-west running transmission lines and a road running roughly parallel to the Susitna River on the north and south sides of the river respectively. A transmission line and a road from the project in this configuration would extend between 45 and 50 miles and connect to the Anchorage-Fairbanks Intertie Transmission line and the Alaska Railroad near the Chulitna or Gold Creek rail stops.<sup>4</sup> If the Denali Corridor is selected as the preferred access route, a 44-mile-long road would be constructed from the project north to the existing Denali Highway.<sup>5</sup> The Denali Corridor would also accommodate transmission and road facilities. The transmission line would continue east along the existing Denali Highway to connect to the Anchorage-Fairbanks Intertie Transmission lines near Cantwell. If the Denali corridor were used for road access, railhead facilities would likely be developed near the Cantwell rail stop. An approximately 8,000-foot long airstrip, with helicopter pad, would also be permanently constructed at the project site to accommodate the transport of construction personnel as well as supplies.

A temporary, fenced construction camp capable of housing and supporting a peak construction workforce of 1,000 would be constructed at the project site. The camp is currently proposed to be constructed on the north bank of the Susitna River near Deadman's Creek. Deadman's Creek would provide potable water and fire protection for the camp and work areas, with a backup system of groundwater wells. Water supply for the camp would be treated to meet U.S. Environmental Protection Agency and state water quality requirements. A wastewater collection

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<sup>3</sup> Generation optimization studies may lead to AEA proposing to operate the project at a normal maximum reservoir elevation of 2,100 feet which would cause the reservoir to be proportionately longer and have a greater surface area.

<sup>4</sup> For both the Chulitna and Gold Creek Corridors alternatives, the new access roads would end at the railroad and would not connect to an existing public road.

<sup>5</sup> The new road would start at milepost 113.7 on the Denali Highway. If needed to accommodate increased construction traffic, AEA would improve about 20 miles of the Denali Highway near Cantwell.

and treatment system would be constructed to serve the camp. Following construction, the camp would be removed except for those facilities needed to support smaller permanent residential and operation and maintenance facilities.

### **3.2.2 Project Operation**

The proposed project will operate in a load-following mode to maximize firm energy during the critical winter months of November through April. To meet this objective, the reservoir would be drafted on a daily and seasonal basis. The reservoir would be drafted annually by an average of about 120 ft. Maximum annual drawdown could be up to 150 foot occurring once in 50 years. In most years, the reservoir would reach its lowest levels by mid-May, and would refill by mid-August.

Downstream flows at the project site are expected to vary on a seasonal, weekly, and daily basis as dictated by minimum instream flow requirements (which have yet to be determined) and load requirements of the railbelt utilities. During the peak winter months, load following would result in discharges over a 24-hour period typically ranging from a low of 3,000 cubic feet per second (cfs) to a high of 10,000 cfs, and average about 6,700 cfs. During the late summer when the reservoir is full, discharges through the powerhouse may be as high as 14,500 cubic feet per second (at maximum plant output based on a 600 MW project) to prevent or minimize spill and maximize energy generation.

Minimum instream flow releases to maintain aquatic habitats downstream have not been determined yet. These flows would be made through either the powerhouse or low level outlet works. With the project in place, regulated peak summer flows downstream of Watana dam at Gold Creek would be reduced and winter flows would be increased in comparison to the natural flow regime.

### **3.2.3 Proposed Environmental Measures**

AEA plans to develop measures to protect and enhance environmental resources affected by construction and operation of the project through the planned licensing studies and through agency and stakeholder collaboration. AEA has thus far identified the following measures to protect and enhance environmental resources of the project area:

#### ***Geologic and Soil Resources***

- Develop a Sediment and Erosion Control Plan to prevent or minimize adverse effects on water quality of project waters.

### ***Water Resources***

- Develop a Spill Prevention, Control, and Countermeasures Plan to minimize the potential for chemical spills during project construction.
- Construct the project with selective withdrawal facilities and operate the project to meet water temperature targets in the Susitna River downstream of the project.

### ***Aquatic Resources***

- None proposed at this time.

### ***Terrestrial Resources***

- Minimize the project footprint and vegetation impacts.
- Dispose of excavated materials within the impoundment area.
- Discourage or restrict off-road vehicle use in the project area to minimize trail propagation and erosion.
- Develop a restoration plan with revegetation measures to restore construction areas.
- Avoid wetlands to the maximum extent possible, and rehabilitate temporary impacts on wetlands to the maximum extent possible

### ***Rare, Threatened, and Endangered Species***

There are no federally listed threatened or endangered species or critical habitats that occur in the project area. The Cook Inlet beluga whale is an endangered species with designated critical habitat in Upper Cook Inlet, which is located 184 river miles downstream of the proposed dam site. No specific measures are proposed for this species at this time.

### ***Aesthetic Resources***

- Develop a comprehensive Site Restoration and Aesthetics Plan to minimize adverse effects on the landscape.

### ***Recreation Resources***

- Develop a Recreation Plan, which will include proposals for new recreation facilities and measures to manage recreation use and resources of the project area. Proposed recreation facilities are likely to include: roads and parking areas, scenic overlooks, directional and



informational signage, boat launches, picnic areas, campgrounds, hiking trails, fishing piers, interpretive exhibits and programming, and a visitor center.

### ***Cultural Resources***

- Develop subsistence resource protection, mitigation and enhancement measures in consultation with the appropriate agencies, Alaska Native entities, and other interested parties.
- Develop a Historic Properties Management Plan (HPMP) to protect significant cultural resources during project construction and operation.

### **3.3 Alternatives to Proposed Action**

Commission staff will consider and assess all alternative recommendations for location or other changes to the proposed project, as well as protection, mitigation, and enhancement measures identified by the Commission, other agencies, Alaska Native entities, NGOs, and the public.

## **4.0 SCOPE OF CUMULATIVE EFFECTS AND SITE-SPECIFIC RESOURCE ISSUES**

### **4.1 Cumulative Effects**

According to the Council on Environmental Quality's regulations for implementing NEPA (50 C.F.R. 1508.7), a cumulative effect is the effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

#### **4.1.1 Resources that could be Cumulatively Affected**

Based on information in the PAD and preliminary staff analysis, we have not identified any resources that may be cumulatively affected by the proposed construction and operation of the project because we have not identified any other past, present, or reasonably foreseeable future actions that may affect resources in the basin.

#### **4.1.2 Geographic Scope**

If any such resources are identified through scoping, the geographic scope of the analysis would be defined by the physical limits or boundaries of the proposed action's effect on the resources. Because the proposed action would affect the resources differently, the geographic scope for each resource may vary. For any resources that participants recommend we analyze for cumulative effects, we are also asking them to recommend the geographic scope that they think is appropriate.

#### **4.1.3 Temporal Scope**

If any such resource is identified through scoping, the temporal scope of our cumulative effects analysis in the EIS will include a discussion of past, present, and reasonably foreseeable future actions and their effects on each resource that could be cumulatively affected. Based on the potential term of a license, the temporal scope will look 30 to 50 years into the future, concentrating on the effect on the resource from reasonably foreseeable future actions. The historical discussion will, by necessity, be limited to the amount of available information for each resource area. The quality and quantity of information, however, diminishes as we analyze resources further away in time from the present.

### **4.2 Project-Specific Resource Issues**

In this section, we present a preliminary list of environmental issues to be addressed in the EIS. We identified these issues, which are listed by resource area, by reviewing the PAD and the Commission's record for the project. This list is not intended to be exhaustive or final, but contains those issues raised to date that could have substantial effects. After the scoping process is completed, we will review this list and determine the appropriate level of analysis needed to address each issue in the EIS.

#### **4.2.1 Geologic and Soils Resources**

- Effects of project construction activities on soil erosion and sedimentation (e.g., dam and hydropower generation facilities, transmission lines, access roads, airstrip, construction camp, borrow areas, disposal areas, staging areas, etc).
- Effects of project construction and operation on sediment deposition in the reservoir, including the rate of sediment deposition and the effect of sediment deposition on the useful life of the reservoir.
- Effects of project operations on soil movement, shoreline erosion, tributary mouth migration, and shoreline stability within the reservoir inundation zone.

- Effects of project operations on sediment transport, streambed material particle size distribution, and stream morphology in the middle and lower reaches of the Susitna River.<sup>6</sup>
- Potential seismic effects on the proposed dam and other project facilities, including related effects on public safety and property downstream.

#### **4.2.2 Water Resources**

- Effects of project operation (e.g., minimum instream flow releases; flood, pulse, and base flow conditions; peaking operations, etc.) on the existing flow regime of the middle and lower reaches of the Susitna River, including the timing, magnitude, and duration of flows.
- Effects of project operation on ice processes within the reservoir and the middle and lower reaches of the Susitna River.
- Effects of project construction activities on water quality (temperature, turbidity, total dissolved solids, suspended solids, dissolved oxygen, pH, metals, and chemical/nutrient characteristics) in the Susitna River and affected tributaries
- Effects of reservoir filling and project operations on water quality (temperature, turbidity, total dissolved solids, suspended solids, dissolved oxygen, pH, metals, and chemical/nutrient characteristics) within the reservoir and the middle and lower reaches of the Susitna River.
- Effects of spillway operations on total dissolved gas concentrations in the middle reach of the Susitna River.
- Effects of reservoir inundation on the potential for mercury methylation and subsequent bioaccumulation of mercury in fish and wildlife.

#### **4.2.3 Aquatic Resources**

##### Reservoir

- Effects of reservoir operations (e.g., daily and seasonal fluctuations) on resident fish migration and habitat in the reservoir and in reservoir tributaries.

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<sup>6</sup> The middle reach refers to the mainstem Susitna River from the proposed dam site at river mile (RM) 184 downstream to the three rivers confluence area at RM 98. The lower reach refers to the mainstem Susitna River from RM 98 downstream to RM 0 at the confluence with Cook Inlet.

- Effects of reservoir inundation and permanent change from riverine to reservoir habitat on aquatic habitat; primary production; and fish and macroinvertebrate distribution, species composition, and abundance.
- Effects of project operations on reservoir fish entrainment and mortality.

### Susitna River

- Effects of project operation (e.g., daily and seasonal flow fluctuations, water temperature, etc.) on primary production and macroinvertebrate species distribution, composition, and abundance in the middle and lower reach of the Susitna River.
- Effects of modification of the existing flow regime on off-channel habitat (i.e., side channels and sloughs) connectivity with the mainstem Susitna River throughout the middle and lower reaches, and corresponding effects on fish access to off-channel habitats.
- Effects of changes in streambed material composition and stream morphology on aquatic habitat in the middle and lower reaches of the Susitna River (e.g., changes to streambed material particle size distribution, stream morphology, riparian vegetation characteristics, and distribution and characteristics of off-channel habitats).
- Effects of project operation on fish access to tributary habitats in the middle and lower reaches of the Susitna River.
- Effects of project construction and operation on the recruitment and deposition of large woody debris within the middle and lower reaches of the Susitna River.
- Effects of project construction and operation on resident and anadromous fish migrations, including anadromous salmonid access through Devils Canyon, and any potential measures to minimize adverse effects (e.g., fish passage).
- Effects of modification to the existing flow regime on physical aquatic habitat availability for spawning and rearing resident and anadromous fish species in mainstem and off-channel habitats throughout the middle and lower Susitna River.
- Effects of modifications to the existing flow regime, sediment transport, ice processes, channel morphology, water quality, etc. on anadromous fish spawning, rearing, and migration habitats (i.e., mainstem and off-channel) in the middle and lower reach of the Susitna River.
- Effects of modifications to the existing flow regime, sediment transport, ice processes, channel morphology, water quality, etc., on resident fish species distribution, composition, and abundance in the middle and lower reaches of the Susitna River.

- Effects of modifications to water temperatures on the distribution of fish communities, including the invasive northern pike.
- Effects of project construction, operation, and maintenance activities on the potential for introduction of invasive aquatic macroinvertebrates and fish species.

#### 4.2.4 Terrestrial Resources

- Effects of habitat loss and fragmentation from project construction and operation on the availability, use, and productivity of wildlife habitats, including key habitat features such as den sites and mineral licks.<sup>7</sup>
- Effects of the project features (i.e., reservoir, access roads, camp site, etc.), fluctuating reservoir levels, ice conditions, and new patterns of human activities on wildlife movement, including any physical and behavioral blockage and alteration of wildlife movement patterns and access to important habitats (e.g., moose wintering range, caribou foraging and calving areas, etc.).
- Effects of project-related fluctuating water levels and ice conditions in the reservoir and downstream river reaches on wildlife mortality rates, with an emphasis on big game species.
- Effects of improved access on levels of human presence and disturbances, hunting and trapping, vehicular use, and noise, on wildlife distribution, habitat use, and abundance in the project area.
- Effects of vegetation removal, altered hydrologic regimes, and construction and operation activities on bald and golden eagle roosting, nesting, rearing, and foraging habitats and forage availability.
- Effects of vegetation removal and disturbance associated construction and operation activities on nesting, rearing, and foraging habitats of migratory “bird species of concern.”<sup>8</sup>

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<sup>7</sup> A major focus of the analysis will be on big game species (moose, caribou, Dall’s sheep, black and brown bears), game birds (ptarmigan, grouse, etc.), wolf, furbearers (beaver, marten, river otter, lynx, and red fox), and small game (snowshoe hare, ptarmigan, and grouse) due to their ecological, management, recreational, and subsistence values; however, other wildlife (e.g., small mammals, shorebirds, seabirds, amphibians, etc.) will be examined as well.

<sup>8</sup> As stipulated in the March 30, 2011 Memorandum of Understanding between the Commission and Interior, migratory bird species of concern in this case will include: (1) species listed by the U.S. Fish and Wildlife Service (FWS) as birds of conservation concern, (2) priority migratory species identified in various bird conservation plans such Alaska’s Comprehensive Wildlife Conservation Plan, (3) species or populations of waterfowl of high or moderately continental importance,

- Effects of the project transmission lines on avian collision and electrocution.
- Effects of inundation and water level fluctuations, construction activities, changes in solar radiation and temperature moderation, and erosion and dust deposition on the distribution and composition of vegetation and wetland communities within and adjacent to the proposed reservoir, transmission line and access roads, and other project features.
- Effects of project construction and operation activities on the introduction and spread of new or existing invasive plants on vegetation communities and wildlife habitats.
- Effects of altered hydrologic regimes on wetlands, wetland functions, riparian vegetation, and riparian succession patterns in the middle and lower reaches of the Susitna River.
- Effects of project construction and operation on rare plant populations.

#### **4.2.5 Threatened and Endangered Species**

- Effects on the Endangered Cook Inlet beluga whale from any changes in habitat and prey base at the Susitna River mouth.

#### **4.2.6 Recreation Resources and Land Use**

- Effects of altered hydrologic regimes and ice cover on timing and extent of river access and navigation within and downstream of the reservoir.
- Effects of project construction and altered hydrologic regimens on fishing opportunities, including availability of fish, fishing access, and quality of experience.
- Effects of project construction and altered hydrologic regimens on potential whitewater boating opportunities, including access and quality of experience.
- Effects of the project features (i.e., reservoir and access roads) on hunting and trapping opportunities and on non-consumptive uses (bird-watching, hiking, camping, boating, etc.) in the vicinity and downstream of the project reservoir, including availability of the resource, access, and quality of experience.
- Effects of project construction and operation activities (e.g. noise, dust, access, recreation activities of construction workers, etc.,) on recreation.
- Effects of changes in land use and ownership on public access and recreation.

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and (4) game birds of management concern.

- Effects of project construction on the eligibility of Brushkana Creek and the Susitna River for possible future designation as a wild and scenic river.
- Consistency of the project with any applicable land use and management plans.

#### **4.2.7 Aesthetics**

- Effects of project construction and operation activities (e.g. equipment noise, blasting, dust, lighting, etc.) and the presence and contrast of project features (dam, transmission lines, construction camp and permanent village) on aesthetic resources, including scenic resources and the soundscape.

#### **4.2.8 Cultural Resources**

- Effects of project construction (e.g., soil disturbing activities); inundation and reservoir fluctuations; disturbance, looting, or vandalism from improved site access; and changes in the surrounding historic landscape on cultural resource sites, including those determined eligible for listing on the National Register of Historic Places (NRHP).
- Effects of the presence of project facilities and construction, operation, and maintenance activities and increased human use on traditional spiritual areas and other traditional uses (Traditional Cultural Properties) within the Area of Project Effect (APE).

#### **4.2.9 Socioeconomic Resources**

- Effects of project construction and operation on local and regional employment and income.
- Effects of project construction and operation on tourism in the Susitna River basin, including commercial opportunities related to fishing, hunting, boating, guiding and other recreation.
- Effects of construction traffic and the construction work force on local government facilities and services (e.g., health and human services, law enforcement, emergency services, education, etc) and housing.
- Effects of project construction on local and regional transportation systems (both passenger and freight), including highway, rail and air transport.
- Effects of changes in fish and wildlife populations and their normal locations and distribution patterns due to project construction and

operation on the availability and use (including harvest patterns and timing) of subsistence resources.

- Effects of use and occupancy of project lands on access to subsistence resources and traditional subsistence activities.

#### 4.2.10 Air Quality

- Effects of project construction and operation on air quality in the region.
- Effects of project construction and operation on greenhouse gas emissions.

#### 4.2.11 Developmental Resources

- Effects of the proposed project and alternatives, including any protection, mitigation, and enhancement measures on the economics of the project.

### 5.0 PROPOSED STUDIES

AEA has proposed to develop studies to address the resource issues summarized in Table 1. AEA is actively working with resource groups to develop these studies and others that may be recommended by the groups. AEA is also voluntarily working with resource groups to gather data in 2012 before the Commission’s formal approval of the study plan to help refine study needs. A formal study plan will be developed based on the Commission’s identification of issues identified in this SD1 and, as necessary, an SD2.

**Table 1. AEA’s initial study proposals for the Susitna-Watana Hydroelectric Project (Source: Susitna-Watana Hydroelectric Project PAD).**

| RESOURCE AREA                   | STUDY   |
|---------------------------------|---|
| Geology and Soils/Geomorphology | <ul style="list-style-type: none"> <li>• Geomorphology Study</li> <li>• 2012 Geomorphic Study Components:               <ul style="list-style-type: none"> <li>-Determine Bedload and Suspended Sediment Load by Size Fraction at Tsusena Creek, Gold Creek, and Sunshine Gage Stations</li> <li>-Replicate the 1980s Middle River Aerial Photography Geomorphic Assessment</li> <li>-Document the Formation of River Ice Downstream of Watana Dam</li> </ul> </li> </ul> |
| Water Resources                 | <ul style="list-style-type: none"> <li>• Project Operations Flow Routing Model (Hec ResSim)</li> </ul>  |



|                            |  |
|----------------------------|--|
|                            | <ul style="list-style-type: none"> <li>• River Ice Study</li> <li>• Water Quality Impacts Study</li> <li>• 2012 Water Quality Study Components: <ul style="list-style-type: none"> <li>-Determine the Applicability of the Temperature Data Collected During the 1980s Studies and Use of SNTMP and DYRESM Temperature Models</li> </ul> </li> </ul>   |
| Fish and Aquatic Resources | <ul style="list-style-type: none"> <li>• Fish Abundance and Distribution Study</li> <li>• Upper River Fish Study</li> <li>• Productivity Study</li> <li>• Instream Flow Study</li> <li>• 2012 Fish and Aquatic Study Components: <ul style="list-style-type: none"> <li>-Synthesis of Existing Fish Population Data</li> <li>-Susitna River Salmon Run Apportionment</li> <li>-Middle River Habitat Utilization Study</li> <li>-Determination of Chinook Salmon and Presence above Devils Canyon</li> <li>-Cook Inlet Beluga Whale Anadromous Prey and Habitat Analysis</li> </ul> </li> </ul>   |
| Wildlife Resources         | <ul style="list-style-type: none"> <li>• Big Game Study</li> <li>• Furbearer Study</li> <li>• Small Game Mammal and Upland Gamebird Study</li> <li>• Harvest Study for Big Game, Furbearers, Small Game Mammals, and Upland Gamebirds</li> <li>• Eagle and Raptor Study</li> <li>• Waterbirds, Seabirds, and Waterfowl Study</li> <li>• Landbird and Shorebird Study</li> <li>• Non-Game Species of Conservation Concern Study</li> <li>• 2012 Wildlife Resource Study Components: <ul style="list-style-type: none"> <li>-Wildlife Habitat Use and Movement Study</li> <li>-Sensitive Wildlife Habitat Study</li> <li>-Past and Current Big Game and Furbearer Harvest Study</li> <li>-Eagle Nests and Raptor Nest Study</li> </ul> </li> </ul> |
| Botanical Resources        | <ul style="list-style-type: none"> <li>• Vegetation Mapping Study</li> <li>• Wetland-Riparian Study</li> <li>• Rare Plant Study</li> <li>• Noxious Weed Study</li> </ul>   |

|                                   |   |
|-----------------------------------|---|
|                                   | <ul style="list-style-type: none"> <li>• 2012 Botanical Resources Study Components: <ul style="list-style-type: none"> <li>-Vegetation and Wildlife Habitat Mapping</li> <li>-Wetland Mapping</li> <li>-Riparian Study</li> </ul> </li> </ul>   |
| Recreational Resources & Land Use | <ul style="list-style-type: none"> <li>• Recreation and Land Use Studies</li> <li>• 2012 Recreation Analyses to be Updated: <ul style="list-style-type: none"> <li>-Reasonably foreseeable future recreation facilities</li> <li>-Commercial recreation use informal surveys</li> <li>-Current and future recreation resource supply and demand of project vicinity</li> <li>-Projected demand for recreation opportunities in the project area</li> </ul> </li> <li>• Land Use and Management Studies: <ul style="list-style-type: none"> <li>-Identification of all relevant comprehensive plans and land management plans, and a discussion of the project's consistency with each plan.</li> <li>-Depiction of uses of land and resources adjacent to the project that clearly delineate the project boundary and boundaries of public lands.</li> </ul> </li> <li>• 2012 Land Use and Management Studies: <ul style="list-style-type: none"> <li>-Title and Site Control Research</li> <li>-GIS Base map updating</li> </ul> </li> </ul> |
| Aesthetics                        | <ul style="list-style-type: none"> <li>• Aesthetics Resources Study</li> <li>• 2012 Aesthetic Resource Study: <ul style="list-style-type: none"> <li>-Inventory BLM VRM designations</li> <li>-Identify initial key viewing areas and key viewpoints</li> </ul> </li> </ul>   |
| Cultural Resources                | <ul style="list-style-type: none"> <li>• Site Location Data Studies</li> <li>• Site Location Modeling</li> <li>• Cultural Chronology Studies</li> <li>• Historic and Prehistoric Land Use Studies</li> <li>• Traditional Cultural Places/Sacred Sites Studies</li> <li>• Development of Historic Contexts/Evaluation Criteria</li> <li>• Paleontology Studies</li> <li>• Development of Plans for Unanticipated Discovery</li> <li>• 2012 Cultural Resources Study: <ul style="list-style-type: none"> <li>-Pre-field data assessment and information</li> </ul> </li> </ul>  |

|                          |  |
|--------------------------|--|
|                          | gathering and compilation  |
| Subsistence Resources    | <ul style="list-style-type: none"> <li>• Collect Information on Current Subsistence Harvests</li> <li>• Collect Information on Current Subsistence Harvesters</li> <li>• Develop Subsistence Use Area Maps</li> <li>• Access Subsistence Summary Tabular Data</li> <li>• ANILCA Section 810 Analysis</li> <li>• Traditional Environmental Knowledge (TEK) Documentation</li> <li>• Research Place Names</li> <li>• 2012 Subsistence Resources Studies:<br/>-Collect and analyze existing subsistence information.</li> </ul>   |
| Socioeconomic Resources  | <ul style="list-style-type: none"> <li>• Quantify Potential Changes in the Size and Location of the Population</li> <li>• Local Government Structure Studies:<br/>-Update local government baseline to include Denali Borough<br/>-Update baseline to incorporate MSB Community Councils</li> <li>• Population, Income, and Housing Study</li> <li>• Public Services and Facilities Study</li> <li>• Water and Wastewater, Solid Waste, Fire Protection and Police Services Studies</li> <li>• Healthcare, Education and Fiscal Status Analysis</li> <li>• Electricity and Energy Use Study</li> </ul> |
| Air Quality              | <ul style="list-style-type: none"> <li>• Air Quality Study</li> </ul>  |
| Transportation Resources | <ul style="list-style-type: none"> <li>• Road Studies</li> <li>• Rail Study</li> <li>• Aviation Study</li> </ul>   |

## 6.0 REQUEST FOR INFORMATION AND STUDIES

We request federal, state, and local resource agencies, Alaska Native entities, NGOs, and the public to forward to the Commission any information that will assist us in conducting an accurate and thorough analysis of the project-specific and cumulative effects of the Susitna-Watana Project. The types of information requested include, but are not limited to:

- information, quantitative data, or professional opinions that may help define the geographical and temporal scope of the analysis (both site-specific and cumulative effects), and that helps identify significant environmental issues;
- identification of, and information from, any other environmental document or similar study (previous, on-going, or planned) relevant to the proposed licensing of the Susitna-Watana Project;
- existing information and any quantitative data that would help to describe the past and present actions and effects of the project and other developmental activities on environmental and socioeconomic resources;
- information that would help characterize existing environmental conditions and habitats;
- identification of any federal, state, or local resource plans, and any future project proposals in the affected resource area, such as proposals to construct or operate recreation areas, water diversions, timber harvest activities, mining operations, or fish management programs;
- documentation that the proposed project would or would not contribute to cumulative adverse or beneficial effects on any resources. Documentation can include, but need not be limited to, how the project would interact with other projects in the area and other developmental activities; study results; resource management policies; and reports from federal and state agencies, local agencies, Alaska Native entities, NGOs, and the public;
- documentation of cumulative effects of basin-wide activities, including the proposed project's operation, on resources;
- documentation that would support a conclusion that the project does or does not contribute to adverse or beneficial effects on certain resources and that such effects should therefore either be excluded from further study or included for further consideration of cumulative effects. Documentation should include, but need not be limited to: how the proposed project would interact with other hydropower projects in the area and other developmental and non-developmental activities; results from studies; resource management policies; and reports from federal, state, and local agencies and Alaska Native entities; and

- study requests by federal and state agencies, local agencies, Alaska Native entities, NGOs, and the public that would help provide a framework for collecting pertinent information on the resource areas under consideration necessary for the Commission to prepare the EIS for the project.

All requests for studies filed with the Commission must meet the criteria found in Appendix A: *Study Plan Criteria*.

The requested information, comments, and study requests should be submitted in writing to the Commission no later than **April 27, 2012**. All filings must clearly identify the following on the first page: **Susitna-Watana Project (P-14241-000)**. Scoping comments may be filed electronically via the Internet. See 18 C.F.R. 385.2001(a)(1)(iii) and the instructions on the Commission's website <http://www.ferc.gov/docs-filing/efiling.asp> under the "e-filing" link. Commenters can submit brief comments up to 6,000 characters, without prior registration, using the e-Comment system at <http://www.ferc.gov/docs-filing/ecomment.asp>. You must include your name and contact information at the end of your comments. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or toll free at 1-866-208-3676, or for TTY, (202) 502-8659. Although the Commission strongly encourages electronic filing, documents may also be paper-filed. To paper-file, mail an original and seven copies to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, DC 20426.

Register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov).

Any questions concerning the scoping meetings or how to file written comments with the Commission should be directed to David Turner at (202) 502-6091 or [david.turner@ferc.gov](mailto:david.turner@ferc.gov). Additional information about the Commission's licensing process and the Susitna-Watana Project may be obtained from the Commission's website, [www.ferc.gov](http://www.ferc.gov).

## **7.0 EIS PREPARATION SCHEDULE**

We intend to prepare a draft and final EIS (we show our preliminary Outline in section 8). The draft EIS will be sent to all persons and entities on the Commission's service and mailing lists for the Susitna-Watana Hydroelectric Project. The EIS will include recommendations for construction and operating

procedures, as well as environmental protection, mitigation, and enhancement measures that should be part of any license issued by the Commission. All recipients will then have 60 days to review the draft EIS and file written comments with the Commission. All comments on the draft EIS filed with the Commission will be considered in preparation of the final EIS.

The major milestones, including those for preparing the EIS, are as follows:

| <u>Major Milestone</u>  | <u>Target Date</u> |
|---|--------------------|
| Scoping Meetings  | March 2012         |
| Comments on SD1   | April 2012         |
| SD 2 (if necessary)   | June 2012          |
| License Application Filed   | September 2015     |
| Ready for Environmental Analysis Notice Issued  | November 2015      |
| Deadline for filing of Comments, Recommendations, and Agency Terms and Conditions/Prescriptions | January 2016       |
| Draft EIS Issued  | July 2016          |
| Comments on Draft EIS Due   | August 2016        |
| Deadline for filing of Modified Agency Recommendations  | October 2016       |
| Final EIS Issued  | January 2017       |

If Commission staff determines that there is a need for additional information or additional studies, the issuance of the Ready for Environmental Analysis notice could be delayed. If this occurs, all subsequent milestones would be delayed by the time allowed for AEA to respond to the Commission's request. A copy of AEA's process plan, which has a complete list of licensing milestones for the project is attached as Appendix B to this SD1.

## **8.0 PROPOSED EIS OUTLINE**

The preliminary outline for the EIS is as follows:

COVER SHEET  
FOREWORD  
TABLE OF CONTENTS  
LIST OF FIGURES  
LIST OF TABLES  
LIST OF APPENDICES  
ACRONYMS AND ABBREVIATIONS  
EXECUTIVE SUMMARY

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- 1.3. Statutory and Regulatory Requirements
  - 1.3.1. Federal Power Act
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- 1.3.1.2. Section 4(e) Conditions
    - 1.3.1.3. Section 10(j) Conditions
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  - 1.3.3. Coastal Zone Management Act
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  - 2.2.4. Modifications to Applicant's Proposal-Mandatory Conditions
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  - 5.5. Consistency with Comprehensive Plans
  
- 6.0 LITERATURE CITED
  
- 7.0 LIST OF PREPARERS
  
- 8.0 LIST OF RECIPIENTS

#### APPENDICES

- A. License Conditions Recommended by Staff
- B. Response to Comments on Draft EIS

### **9.0 CONSISTENCY WITH COMPREHENSIVE PLANS**

Section 10(a)(2) of the FPA, 16 U.S.C. section 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by a project. The staff has preliminarily identified and reviewed the plans listed below that may be relevant to the Susitna-Watana Project. Agencies are requested to review this list and inform the Commission staff of any changes. If there are other comprehensive plans that should be considered for this list that are not on file with the Commission, or if there are more recent versions of the plans already listed, they can be filed for consideration with the Commission according to 18 CFR 2.19 of the Commission's regulations. Please follow the instructions for filing a plan at <http://www.ferc.gov/industries/hydropower/gen-info/licensing/complan.pdf>.

The following is a list of comprehensive plans currently on file with the Commission that may be relevant to the project.

Alaska Department of Fish and Game. Susitna Flats State Game Refuge, March 1988. Juneau, Alaska.

Alaska Department of Fish and Game. Matanuska-Susitna Borough. 1985. Susitna Basin area plan. Juneau, Alaska. June 1985. 440 pp.

Alaska Department of Fish and Game. Matanuska-Susitna Borough. 1991. Susitna Basin recreation rivers management plan. Anchorage, Alaska. August 1991. 181 pp.

Alaska Department of Fish and Game. 1998. Catalog of waters important for spawning, rearing or migration of anadromous fishes. November 1998. Juneau, Alaska. Six volumes.

Alaska Department of Fish and Game. 1998. Atlas to the catalog of waters important for spawning, rearing or migration of anadromous fishes. November 1998. Juneau, Alaska. Six volumes.

Alaska Department of Natural Resources. Alaska's Outdoor Legacy: Statewide Comprehensive Outdoor Recreation Plan (SCORP): 2009-2014. Anchorage, Alaska.

Bureau of Land Management. 1981. South central Alaska water resources study: Anticipating water and related land resource needs. Anchorage, Alaska. October 1, 1981. 97 pp.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

## **10.0 MAILING LIST**

The list below is the Commission's official mailing list for the Susitna-Watana Hydroelectric Project (FERC No. 14241). If you want to receive future mailings for the Susitna-Watana Project and are not included in the list below, please send your request by email to [efiling@ferc.gov](mailto:efiling@ferc.gov) or by mail to:

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E., Room 1A  
Washington, DC 20426.

All written and emailed requests to be added to the mailing list must clearly identify the following on the first page: Susitna-Watana Hydroelectric Project No. 14241-000. You may use the same method if requesting removal from the mailing lists below.

Register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to these or other pending projects. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or toll free at 1-866-208-3676, or for TTY, (202) 502-8659.

**FERC's Mailing List for the Susitna-Watana Project No. 14241**

|  |  |
|--|--|
| Becky Long<br>Box 320<br>Talkeetna, AK 99676                           | Rachel Day<br>P.O. Box 921<br>Talkeetna, AK 99676  |
| Robert Gerlach<br>13666 E 2nd St<br>P.O. Box 23<br>Talkeetna, AK 99676 | John Strassenburgh<br>15406 E. Barge Dr.<br>P.O. Box 766<br>Talkeetna, AK 99676          |
| Kevin Foster<br>Mile 230.7 Alaska Railroad<br>Talkeetna, AK 99676      | James Ferguson<br>P.O. Box 15391<br>Fritz Creek, AK 99603-6391                           |
| Denis Ransy<br>P.O. Box 344<br>Talkeetna, AK 99676                     | Beth Pike<br>P.O. Box 968<br>Talkeetna, AK 99676   |
| Frank Yadon<br>14152 E. Gliska Street<br>Talkeetna, AK 99676           | William FitzGerald<br>15537 Cummings Road<br>Talkeetna, AK 99676                         |
| Robert Gerlach<br>13666 E 2nd St<br>P.O. Box 23<br>Talkeetna, AK 99676 | Paul Roderick, President<br>Talkeetna Air Taxi<br>23125 Comsat Rd<br>Talkeetna, AK 99676 |
| Ruth D. Wood<br>15406 E. Barge Dr.<br>Talkeetna, AK 99676              | William Post<br>P.O. Box 271<br>Talkeetna, AK 99676                                      |
| Michael Wood<br>P.O. Box 773<br>Talkeetna, AK 99676                    | Joseph Klauder<br>P.O. Box 396<br>Talkeetna, AK 99676                                    |
| Constance Twigg<br>P.O. Box 266<br>Talkeetna, AK 99676                 | Sheryl Salasky<br>P.O. Box 196<br>Talkeetna, AK 99676                                    |

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| Robert Coleman, President<br>Susitna Community Co<br>HC 89 Box 8575<br>Talkeetna, AK 99676   | Sharon Corsaro<br>Corsaro Creative Coaching<br>P.O. Box 255<br>Hermosa Beach, CA 90254                                |
| Louisa Yanes<br>Alaska Center for the Environment<br>807 G Street<br>Anchorage, AK 99501   | Lissa Hughes<br>Northern Alaska Environmental Center<br>830 College Road<br>Fairbanks, AK 99701                       |
| David Theriault, Legislative Director<br>Alaska Conservation Alliance<br>810 N St., Ste. 203<br>Anchorage, AK 99501                              | Wayne M Dyok, Project Manager Alaska<br>Energy Authority<br>813 West Northern Lights Blvd.<br>Anchorage, AK 99503     |
| Brett Swift<br>American Rivers, Inc., Et Al.<br>320 SW Stark Street Suite 412<br>Portland, OR 97204  | Sara Fisher-Goad, Project Manager<br>Alaska Energy Authority<br>813 West Northern Lights Blvd.<br>Anchorage, AK 99503 |
| Michael Swiger, Member<br>Alaska Energy Authority<br>1050 Thomas Jefferson Street, NW<br>7th Floor<br>Washington, DC 20007                       | Thomas O'Keefe<br>PNW Stewardship Director<br>American Whitewater<br>3537 NE 87th St<br>Seattle, WA 98115             |
| Harold Shepherd, President<br>The Center for Water Advocacy<br>P.O. Box 15332<br>Fritz Creek, AK 99603   | Peg Foster, Secretary<br>Chase Community Council<br>P.O. Box 205<br>Talkeetna, AK 99676                               |
| Shawn Stankowitz, President<br>Trapper Creek Community Council<br>P.O. Box 13021<br>Trapper Creek, AK 99683                                      | Bob Shavelson<br>Cook Inlet Keeper<br>P.O. Box 3269<br>Homer, AK 99603-3269   |
| Cliff Earnes<br>Copper Country Alliance<br>HC 60 Box 306T<br>Copper Center, AK 99573   | Charlie Loeb, President<br>Denali Citizens Council<br>PO Box 78<br>Denali Park, AK 99755                              |
| Jeremy Millen, Executive Director<br>Friends of Mat-Su<br>308 East Dahlia St<br>Palmer, AK 99645   | Pat Lavin<br>National Wildlife Federation<br>750 W. 2nd Ave., Suite 200<br>Anchorage, AK 99501                        |
| Susan Walker, Marine Resources Specialist<br>NOAA National Marine Fisheries Service,<br>Alaska Region<br>P.O. Box 21668<br>Juneau, AK 99802-1668 | Eric Rothwell, Hydrologist<br>NOAA Fisheries Service<br>Alaska Region<br>222 West Seventh Ave.<br>Anchorage, AK 99513 |

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| Thomas Meyer, General Counsel<br>NOAA National Marine Fisheries Service,<br>Alaska Region<br>P.O. Box 21109<br>Juneau, AK 99801 | Mary B. Goode, Admin. Assistant<br>NOAA National Marine Fisheries Service,<br>Alaska Region<br>PO Box 21668<br>Juneau, AK 99802-1668   |
| U.S. Fish & Wildlife Service<br>Regional Office<br>1011 East Tudor MS 331<br>Anchorage, AK 99503                                | Office of Solicitor<br>U.S. Department of Interior<br>4230 University Dr, Ste. 300<br>Anchorage, AK 99508                              |
| Cassie Thomas<br>U.S. National Park Service<br>11081 Glazanof Drive<br>Room 108<br>Anchorage, AK 99507                          | John Darnell<br>U.S. National Park Service<br>Alaska Regional Office<br>240 West 5 <sup>th</sup> Ave., Room 114<br>Anchorage, AK 99501 |
| Coalition for Susitna Dam Alternatives<br>1 Main Street<br>Talkeetna, AK 99676  | Joshua Sonkiss<br>1024 21st Avenue<br>Fairbanks, AK 99701  |
| Sharon Montagnino, Chairperson<br>Talkeetna Community Council, Inc.<br>P.O. Box 608<br>Talkeetna, AK 99676                      | Ellen Wolf<br>Talkeetna Defense Fund<br>P.O. Box 371<br>Talkeetna, AK 99676  |
| Brad Powell, Forest Supervisor<br>USDA Forest Service<br>Tongass National Forest Federal Building<br>Ketchikan, AK 99901        | Karen Kelly, Executive Director<br>Northern Alaska Environmental Center<br>830 College Road<br>Fairbanks, AK 99701                     |
| Kathryn Miller<br>Trout Unlimited<br>227 SW Pine Street, Suite 200<br>Portland, OR 97204  | Ken Lord, Attorney-Advisor<br>U.S. Department of Interior<br>4230 University Dr., Suite 300<br>Anchorage, AK 99508                     |
| Tim Bristol<br>Trout Unlimited<br>419 6 <sup>th</sup> Street, Suite 200<br>Juneau, AK 99801                                     | Douglas Mutter<br>OEPC-Anchorage<br>1689 C Street, Room 119<br>Anchorage, AK 99501   |

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| Kirby Gilbert, Water Resources Planner<br>Alaska Energy Authority<br>MWH Americas Inc.<br>2353 130th Ave N.E., Suite 200<br>Bellevue, WA 98005              | Office of Environmental Policy and<br>Compliance (USDOJ)<br>Regional Environmental Office<br>3601 C St, #1100<br>Anchorage, AK 9950-5947                                     |
| Governor of Alaska<br>Office of the Governor of Alaska<br>RE: FERC Projects<br>Office of the Governor of Alaska<br>P.O. Box 110001<br>Juneau, AK 99811-0001 | Monte D Miller<br>ADFG Statewide Hydropower Coordinator<br>Alaska Department of Fish and Game<br>Division of Sport Fish/RTS<br>333 Raspberry Rd.<br>Anchorage, AK 99518-1565 |
| John Burke, General Manager<br>SSRAA<br>14 Borch Street<br>Ketchikan, AK 99901  | Sharon Montagnino, Chairperson<br>Talkeetna Community Council, Inc.<br>P.O. Box 608<br>Talkeetna, AK 99676   |
| Regulatory Division Chief<br>U.S. Army Corps of Engineers CEPOA-RD<br>Post Office Box 6898<br>JBER, Alaska 99506-6898                                       | Frances E Mann, Branch Chief<br>Conservation Planning<br>U.S. Fish & Wildlife Service<br>605 W. 4th Ave., Room G-61<br>Anchorage, AK 99501                                   |
| Michael Buntjer<br>U.S. Fish and Wildlife Service<br>605 West 4 <sup>th</sup> Ave.<br>Anchorage, AK 99501   | Ann Rapport<br>U.S. Fish and Wildlife Service<br>605 West 4 <sup>th</sup> Ave.<br>Anchorage, AK 99501  |
| NOAA National Marine Fisheries Service,<br>Alaska Region<br>222 West Seventh Ave<br>5th Floor<br>Anchorage, AK 99513  | Corinne Smith<br>Mat-Su Basin Program Director<br>The Nature Conservancy of Alaska<br>715 L Street Suite 100<br>Anchorage, AK 99501  |
| Teresa Trulock, Lands Forester<br>USDA Forest Service<br>P.O. Box 19001<br>Thorne Bay, AK 99919-0001  | Pete Stephan, President<br>Montana Creek Native Association<br>3300 C Street<br>Anchorage, AK 99503  |

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| Penny Carty, President<br>Village of Salamatof<br>P.O. Box 2682<br>Kenai, AK 99611  | Charles G. Anderson, Chairman<br>Cook Inlet Region, Inc.<br>2525 C. St., Suite 500<br>Anchorage, AK 99503                |
| Edith Baller, President and Chairperson<br>Chickaloon-Moose Creek Native<br>Association<br>P.O. Box 875046<br>Wasilla, AK 99674           | Anne Thomas, President<br>Chitina Native Corporation<br>P.O. Box 3<br>Chitina, AK 99566                                  |
| Orie G. Williams, Chair<br>Doyon, Ltd.<br>1 Doyon Place, Suite 300<br>Fairbanks, AK 99701   | Kathy Morgan, Chairman of the Board<br>Toghotthele Corporation<br>P.O. Box 249<br>Nenana, AK 99760                       |
| Emil J. McCord, Chairman<br>Tyonek Native Corporation<br>1689 C Street, Suite 219<br>Anchorage, AK 99501                                  | Fred S. Elvsaaas, Chairman of the Board<br>Seldovia Native Association, Inc.<br>P.O. Box Drawer L<br>Seldovia, AK 99663  |
| President<br>Kenai Natives Association, Inc<br>215 Fidalgo Street, Suite 101<br>Kenai, AK 99611   | Michael E. Curry, Chairman and President<br>Eklutna, Inc.<br>16515 Centerfield Drive, Suite 201<br>Eagle River, AK 99577 |
| Gary Oskolkoff, President/CEO<br>Ninilchik Natives Association, Inc.<br>15730 Sterling Hwy.<br>P.O. Box 39130<br>Ninilchik, AK 99639-0130 | Robert Brean, President<br>Tanacross, Inc.<br>22808 Green Garden Road<br>Chugiak, AK 99576                               |
| Michelle Anderson, President/CEO<br>Ahtna, Inc.<br>P.O. Box 649<br>Glennallen, AK 99588   | Tom Harris, CEO<br>Knikatnu, Inc.<br>P.O. Box 872130<br>Wasilla, AK 99687  |
| Jerry Isaacs, President<br>Tanana Chiefs Conference<br>122 1 <sup>st</sup> Avenue, Suite 600<br>Fairbanks, AK 99701                       | Wilson Justin, Administrator<br>Cheesh-Na Tribal Council<br>PO Box 241<br>Chistochina, AK 99586                          |

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| Veronica Nicoles, President<br>Native Village of Cantwell<br>P.O. Box 94<br>Cantwell, AK 99729                                       | Jaylene Peterson-Nyren, Executive Director<br>Kenaitze Indian Tribe<br>P.O. Box 988<br>Kenai, AK 99611                 |
| JoAnn Polston, President<br>Healy Lake Village<br>P.O. Box 74090<br>Fairbanks, AK 99706  | Roy Ewan, President<br>Gulkana Village Council<br>Gulkana Village<br>P.O. Box 254<br>Gakona, AK 99586- 0254            |
| Darin Gene, President<br>Gakona Village Council<br>Native Village of Gakona<br>P.O. Box 102<br>Gakona, AK 99585                      | Ron Mahle, President<br>Chitina Traditional Village Indian Council<br>P.O. Box 31<br>Chitina, AK 99566                 |
| Donald Charlie, First Chief<br>Nenana Native Association<br>P.O. Box 369<br>Nenana, AK 99760   | C. Nora David, 1 <sup>st</sup> Chief<br>Mentasta Traditional Council<br>P.O. Box 6019<br>Mentasta, AK 99780            |
| Doug Wayne, Chairman<br>Chickaloon Traditional Village Council<br>Chickaloon Native Village<br>P.O. Box 1105<br>Chickaloon, AK 99674 | Frank Standifer, President<br>Native Village of Tyonek<br>P.O. Box 82009<br>Tyonek, AK 99682-0009                      |
| Lorraine Titus, President<br>Northway Village<br>P.O. Box 516<br>Northway, AK 99764  | Debra Call, President<br>Knik Tribal Council<br>Box 871565<br>Wasilla, AK 99567  |
| Kathrin McConkey , President<br>Native Village of Kluti-Kaah<br>P.O. Box 68<br>Copper Center, AK 99573                               | Donald Adams, President<br>Native Village of Tetlin<br>P.O. Box TTL<br>Tetlin, Ak 99779                                |
| Roy Denny, President<br>Tanacross Village Council<br>P.O. Box 76009<br>Tanacross, AK 99776   | John Goodlaw, President<br>Tazlina Village Council<br>Native Village of Tazlina<br>P.O. Box 87<br>Glennallen, AK 99588 |



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| <p>Crystal Collier, President<br/> Seldovia Village Tribe<br/> Drawer L<br/> Seldovia, AK 99663</p>   | <p>Richard “Greg” Encelewski, President<br/> Ninilchik Traditional Council<br/> P.O. Box 39070<br/> Ninilchik, AK 99639</p> |
| <p>William J. Miller, President<br/> Village of Dot Lake<br/> P.O. Box 2279<br/> Dot Lake, AK 99737</p>   | <p>Lee Stephan, President<br/> Eklutna Native Village<br/> 26339 Eklutna Village Road<br/> Chugiak, AK 99567</p>            |
| <p>Durelle Smith<br/> Science Partnership Coord.<br/> U.S. Geological Survey<br/> Alaska Science Center<br/> 4210 University Drive<br/> Anchorage, AK 99508</p> |   |

**APPENDIX A**  
**STUDY PLAN CRITERIA**  
**18 CFR Section 5.9(b)**

Any information or study request must contain the following:

1. Describe of the goals and objectives of each study proposal and the information to be obtained;
2. If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;
3. If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;
4. Describe existing information concerning the subject of the study proposal, and the need for additional information;
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;
6. Explain how any proposed study methodology (including and preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate filed season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and
7. Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.

**APPENDIX B  
PROCESS PLAN AND SCHEDULE**

The timeline assumes two years of study, but this is subject to change based on the outcome of the study development process. Shaded milestones are unnecessary if there are no study disputes; if due date falls on a weekend or holiday, the due date is the following business day.

| <b>Responsible Party</b>             | <b>Pre-Filing Milestone</b>                                       | <b>Date</b> | <b>FERC Regulation</b> |
|--------------------------------------|---|-------------|------------------------|
| AEA                                  | Issue Public Notice for NOI/PAD                                   | 12/29/11    | 5.3(d)(2)              |
| AEA                                  | File NOI/PAD with FERC  | 12/29/11    | 5.5, 5.6               |
| FERC                                 | Tribal Meetings   | 1/30/12     | 5.7                    |
| FERC                                 | Issue Notice of Commencement of Proceeding and Scoping Document 1 | 2/27/12     | 5.8                    |
| FERC                                 | Scoping Meetings  | 3/26-29/12  | 5.8(b)(viii)           |
| All stakeholders                     | PAD/SD1 Comments and Study Requests Due                           | 4/27/12     | 5.9                    |
| FERC                                 | Issue Scoping Document 2 (if needed)                              | 6/11/12     | 5.1                    |
| AEA                                  | File Proposed Study Plan (PSP)                                    | 6/11/12     | 5.11(a)                |
| All stakeholders                     | Proposed Study Plan Meeting                                       | 7/11/12     | 5.11(e)                |
| All stakeholders                     | Proposed Study Plan Comments Due                                  | 9/10/12     | 5.12                   |
| AEA                                  | File Revised Study Plan   | 10/10/12    | 5.13(a)                |
| All stakeholders                     | Revised Study Plan Comments Due                                   | 10/25/12    | 5.13(b)                |
| FERC                                 | Director's Study Plan Determination                               | 11/9/12     | 5.13(c)                |
| Mandatory Conditioning Agencies only | Any Study Disputes Due  | 11/29/12    | 5.14(a)                |
| Dispute Panel                        | Third Dispute Panel Member Selected                               | 12/14/12    | 5.14(d)                |
| Dispute Panel                        | Dispute Resolution Panel Convenes                                 | 12/19/12    | 5.14(d)(3)             |
| AEA                                  | Applicant Comments on Study Disputes Due                          | 12/24/12    | 5.14(j)                |
| Dispute Panel                        | Dispute Resolution Panel Technical Conference                     | 12/29/12    | 5.14(j)                |
| Dispute Panel                        | Dispute Resolution Panel Findings Issued                          | 1/18/13     | 5.14(k)                |
| FERC                                 | Director's Study Dispute Determination                            | 2/7/13      | 5.14(l)                |

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| AEA              | First Study Season   | 2013     | 5.15(a)                |
| AEA              | Initial Study Report   | 11/11/13 | 5.15(c)(1)             |
| All stakeholders | Initial Study Report Meeting   | 11/26/13 | 5.15(c)(2)             |
| AEA              | Initial Study Report Meeting Summary   | 12/11/13 | 5.15(c)(3)             |
| All stakeholders | Any Disputes/Requests to Amend Study Plan Due  | 1/10/14  | 5.15(c)(4)             |
| All stakeholders | Responses to Disputes/Amendment Requests Due   | 2/9/14   | 5.15(c)(5)             |
| FERC             | Director's Determination on Disputes/Amendments  | 3/12/14  | 5.15(c)(6)             |
| AEA              | Second Study Season  | 2014     | 5.15(a)                |
| AEA              | Updated Study Report due   | 11/10/14 | 5.15(f)                |
| All stakeholders | Updated Study Report Meeting   | 11/25/14 | 5.15(f)                |
| AEA              | Updated Study Report Meeting Summary   | 12/10/14 | 5.15(f)                |
| All stakeholders | Any Disputes/Requests to Amend Study Plan Due  | 1/9/15   | 5.15(f)                |
| All stakeholders | Responses to Disputes/Amendment Requests Due   | 2/9/15   | 5.15(f)                |
| FERC             | Director's Determination on Disputes/Amendments  | 3/11/15  | 5.15(f)                |
| AEA              | File Preliminary Licensing Proposal  | 4/14/15  | 5.16(a)                |
| All stakeholders | Preliminary Licensing Proposal Comments Due  | 6/13/15  | 5.16(e)                |
| AEA              | File Final License Application <sup>9</sup>  | 9/11/15  | 5.17                   |
| AEA              | Issue Public Notice of License Application Filing  | 9/11/15  | 5.17(d)(2)             |
| FERC             | Issue Public Notice of License Application Filing (Tendering Notice)                           | 9/25/15  | 5.19                   |
| FERC             | Director's Determination on Any Additional Study Requests and Notification of Any Deficiencies | 10/11/15 | 5.19(e);<br>5.20(a)(2) |
| FERC             | Issue Public Notice Accepting  | 11/10/15 | 5.22                   |

<sup>9</sup> The timeline from the filing of the application forward assumes that a complete application is filed with the Commission and no additional information is required to process the application.

|                  |   |          |         |
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|                  | Application and Ready for Environmental Analysis (REA)                      |          |         |
| All stakeholders | Comments, Interventions, 10(a) Recommendations Due                          | 1/9/16   | 5.23(a) |
| Agencies         | 10(j) Recommendations; 4(e) Terms and Conditions; Fishway Prescriptions Due | 1/9/16   | 5.23(a) |
| AEA              | Request 401 Water Quality Certification, if required                        | 1/9/16   | 5.23(b) |
| AEA              | Reply Comments Due  | 2/23/16  | 5.23(a) |
| FERC             | Issue Draft Environmental Impact Statement (EIS)                            | 7/7/16   | 5.24    |
| All stakeholders | Draft EIS Comments Due  | 8/6/16   | 5.24(c) |
| Agencies         | Modified 4(e) Terms and Conditions and Modified Fishway Prescriptions Due   | 10/5/16  | 5.24(d) |
| FWS/NMFS         | ESA Biological Opinion As Needed  | 11/19/16 | ESA     |
| FERC             | Issue Final EIS   | 1/3/17   |         |
| FERC             | Issue License Decision  | 3/4/17   | FPA     |