

# Susitna-Watana Hydroelectric Project Document ARLIS Uniform Cover Page

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## 1.1. Air Quality Study

### 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 following sections should be completed to provide the necessary context and justification for the proposed study.

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

The air quality study will assess the current conditions of the area against applicable state and national air quality standards and evaluate the Project's air quality impact against these standards. The analysis will evaluate both short-term (construction) and long-term (operational) impacts from the Project and how Project emissions compare to the no-action alternative.

#### 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.

The national and state air quality regulations are designed to maintain and/or improve air quality by controlling or reducing emissions of air pollutants. The air quality impact analysis is subject to the state and national ambient air quality standards and state and national attainment designations (i.e. attainment, non-attainment, maintenance). The purpose of the air quality analysis is to ensure the proposed action does not violate state air quality standards (18 AAC 50).

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

~~Identifying project-related effects on air quality will assist the Commission's overall determination of the public interest with regard to the Project. The primary benefit to the public of this analysis will be the assurance of clean air and public safety. The identification of potential emission sources and levels can be used to identify recommendations to reduce emissions during construction and operations.~~

~~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 little existing ambient monitoring data available in the vicinity of the project site. The nearest state monitoring sites are in the urban core of the Mat-Su Valley. There is some limited data available from a site in Denali National Park. The team will investigate whether the state has any other project-specific data that may be available and will summarize any available data to support the existing conditions section.

Existing data would be compared to applicable standards for criteria pollutants in a table. Criteria pollutants as defined by Environmental Protection Agency (EPA) are nitrogen dioxide (NO<sub>2</sub>), sulfur dioxides (SO<sub>2</sub>), carbon monoxide (CO), particulate matter (PM<sub>10</sub>/PM<sub>2.5</sub>), and volatile organic compounds (VOCs). The study assumes ambient air monitoring will not be required. If site specific monitoring data is required, it is anticipated at least one year worth of data will be collected consistent with methods outlined in 18 AAC 50.035.

The area is likely considered unclassifiable under Alaska Administrative Code 18 AAC 50.015, as there may be insufficient data to determine whether it is in attainment with respect to all criteria pollutants.

An existing emissions inventory of other Railbelt fossil-fuel utility plants will be generated and categorized by type (i.e. coal, oil, gas, etc.) to evaluate the potential emissions reductions from such facilities if the Project is implemented. This inventory will be based on existing information in the Alaska Railbelt Regional Integrated Resource Plan and other sources as appropriate.

Detailed information on Project construction and operations would be needed to estimate and evaluate the Project emissions for criteria pollutants for comparison to national and state standards. This would include levels of traffic by various modes and timeframes, construction equipment and activities, and operations equipment and schedules. A table comparing the no-action alternative and potential with-Project emissions will be generated.

**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.**

The EPA and Alaska Department of Environmental Conservation (DEC) have air quality standards that must be met for new sources of emissions of criteria pollutants. The study team will estimate emissions generated by the Project, including construction and operation emissions. The emissions along with the type and size of equipment will be compared to appropriate DEC thresholds as outlined in Alaska Administrative Code 18 AAC 50 to determine the type of license and air dispersion modeling required, if any, and whether any license conditions to protect air quality are needed. The study assumes emission estimates from the Project are expected to be below major source thresholds, therefore a Prevention of Significant Deterioration (PSD) and Title V permit is not anticipated 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.**

Construction equipment emission factors will be obtained from the EPA's NONROAD model or similar model. Fugitive particulate matter emissions from the handling and storage of raw materials and wind erosion during construction will be quantified according to the methodologies specified in the EPA's Compilation of Air Pollutant Emission Factors (AP-42) or similar source of emission factors. Typical construction activities could include, but are not limited to, construction equipment, earth moving activities, construction worker commutes, material deliveries, earth hauling, and operation and maintenance activities. The temporary air quality impacts from construction activities associated with the proposed project are not expected to be significant. If a state license is required, air quality dispersion modeling may also be required and will be

performed consistent with Alaska Administrative Code 18 AAC 50 dispersion modeling guidelines.

The Project is not located in an EPA designated non-attainment area, therefore General Conformity and Transportation Conformity is not anticipated. If the Project generates average daily traffic (ADT) volumes that exceed a state mobile source threshold for carbon monoxide, particulate matter or mobile source air toxics (MSATs) analyses, then a mobile source evaluation may be required for traffic generated by the Project. The extent of this analysis will be determined after discussions with appropriate state personnel and a review of the transportation study.

The study will also include a summary of the baseline fossil fuel generation emissions in the area. The team will utilize the source data and references identified by HDR in the Section 7.3.1.2 of the Data Gap Analysis along with other applicable source data for generating the emissions inventory. It is assumed that no additional monitoring or data collection will be required at existing power generation sites.

**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.**

Given the lack of nearby existing monitoring data, a program of air quality monitoring would need to be implemented to gather baseline data if existing monitoring data is determined to not be representative of the area. Details regarding equipment to be used for construction and operations and operational information should be sufficient to perform analysis of Project emissions. Information on emissions from other Railbelt power sources that may be offset by this Project would be needed to allow for a full analysis of potential costs and benefits.

We anticipate that completion of the work described above would require six to eight months of effort, assuming that no air monitoring is required.

**1.3.8. Literature Cited**

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

18 AAC 50, Alaska Administrative Code, Air Quality Control

EPA 40 CFR Part 50, National Ambient Air Quality Standards

42 U.S.C. 7401, The Clean Air Act