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**Susitna-Watana Hydroelectric Project
(FERC No. 14241)**

**Recreation Resources Study
Study Plan Section 12.5**

2014 Study Implementation Report

Prepared for
Alaska Energy Authority



Prepared by
AECOM

November 2015

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ATTACHMENTS

Attachment 1: Technical Memorandum - Trails Assessment and Classification

Attachment 2: Technical Memorandum - Recreation Use Demand Assessment

LIST OF ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

Abbreviation	Definition
ADA	Americans with Disability Act
AEA	Alaska Energy Authority
ATV	all-terrain vehicle
CFR	Code of Federal Regulations
FERC	Federal Energy Regulatory Commission
GAU	generally allowed use
GIS	geographic information system
ILP	Integrated Licensing Process
ISR	Initial Study Report
NRRS	Natural Resource Recreation Setting
PRM	Project River Mile
RS	Revised Statute
RSP	Revised Study Plan
SPD	Study Plan Determination
USFS	United States Forest Service

1. INTRODUCTION

This Recreation Resources Study, Section 12.5 of the Revised Study Plan (RSP) approved by the Federal Energy Regulatory Commission (FERC) for the Susitna-Watana Hydroelectric Project, FERC Project No. 14241, focuses on identifying recreation resources and activities (by both visitors to Alaska and Alaska residents) that may be affected by the construction and operation of the proposed Project, and assessing the potential impacts of Project construction and operation on those resources and activities. RSP Section 12.5 provides goals, objectives, and proposed methods for recreation resources data collection and analysis.

A summary of the development of this study, together with the Alaska Energy Authority's (AEA) implementation of it through the 2013 study season, appears in Part A, Section 1 of the Initial Study Report (ISR) filed with FERC in June 2014. As required under FERC's regulations for the Integrated Licensing Process (ILP), the ISR describes AEA's "overall progress in implementing the study plan and schedule and the data collected, including an explanation of any variance from the study plan and schedule" (18 Code of Federal Regulations [CFR] 5.15(c)(1)).

Since filing the ISR in June 2014, AEA has continued to implement the FERC-approved plan for the Recreation Resources Study. For example:

- As described in detail below, AEA completed efforts to identify trails within the Recreation Use Study Area used for commercial and non-commercial purposes and has classified and mapped all trails in the immediate Project area to a scale greater than 1:24,000.
- As described in detail below, AEA completed survey research, analysis, and modeling effort used to estimate resident and nonresident use of the Recreation Use Study Area.
- On October 23, 2014, AEA held an ISR meeting for the Recreation Use Study.

In furtherance of the next round of ISR meetings and FERC's Study Plan Determination (SPD) expected in 2016, this report describes AEA's overall progress in implementing the Recreation Resources Study during calendar year 2014. Rather than a comprehensive reporting of all field work, data collection, and data analysis since the beginning of AEA's study program, this report is intended to supplement and update the information presented in Part A of the ISR for the Recreation Resources Study through the end of calendar year 2014. It describes the methods and results of the 2014 effort, and includes a discussion of the results achieved.

2. STUDY OBJECTIVES

The Recreation Resources Study is designed to identify recreation resources and activities (by both visitors to Alaska and Alaska residents) that may be affected by the construction and operation of the proposed Project, and to assess the potential impacts of Project construction and operation on those resources and activities.

As set forth in Section 12.5.1 of the RSP, the specific goals of the Recreation Resources Study are to:

- Identify and document recreation resources and facilities that support commercial and non-commercial recreation in the Project area.
- Identify the types and levels of current recreational uses and future reasonably foreseeable future uses based on surveys and interviews, consultation with licensing participants, regional and statewide plans, and other data.
- Evaluate the potential impacts of Project construction and operation on recreation resources, needs, and uses in the Project area.
- Develop data to inform AEA's future development of a Recreation Management Plan for the Project.

3. STUDY AREA

The study areas for the Recreation Resources Study are described in RSP Section 12.5.3. Three geographic areas are defined and used in this study, as described below.

First, the **Recreation Effects Analysis Area** is defined as the area proposed to be occupied by Project facilities as well as the Susitna River upstream to the Denali Highway Bridge and downstream to Sunshine, and the proposed Project reservoir and some nearby shore lands and trails surrounding the reservoir location (see Figure 3.0-1). This area includes the proposed Watana Dam, located on the Susitna River at Project River Mile (PRM) 187 (measured from the mouth of the river), and the resulting 39-mile long Watana Reservoir. AEA is currently studying the potential indirect effects of the proposed Project; thus, the lands and trails around the proposed Project facilities are included in the Recreation Effects Analysis Area as they would likely receive more use, or induced use as a result of Project development. The Recreation Effects Analysis Area also includes the proposed access road and transmission line corridors, and other Project facility locations.

As described in Part C, Section 7.1.2 of the ISR filed with FERC in June 2014, AEA has added the Denali East Option road and transmission corridor to the study area. With regard to this study, the proposed modification includes an expansion of the Recreation Effects Analysis Area by including a 5-mile buffer on the proposed Denali East Option and on new trails identified in 2013 that were found to have a nexus to the Project, notably the Butte Lake Trail and the Goose Lake Trail.

Second, the **Recreation Use Study Area**, which includes but is broader than the Recreation Effects Analysis Area, is defined generally as the area encompassed by the following features: the Parks Highway corridor, from the "Y" at the Talkeetna Spur Road intersection to Cantwell; the Denali Highway corridor from Cantwell east to Paxson; west from Paxson along a 2-mile buffer south of the Denali Highway to the Matanuska-Susitna Borough boundary; areas west of the Matanuska-Susitna Borough boundary between the Denali and Glenn highways (including the Lake Louise area); extending west in a line from the Matanuska-Susitna Borough boundary,

following the Chickaloon River, and connecting to the Y at the Talkeetna Spur Road (see Figure 3.0-1). This includes areas ¼ mile west and ¼ mile north of the highways. The boundaries of the Recreation Use Study Area are the same as those used for the demand assessment, also referred to as the Recreation Supply and Demand Analysis Area.

Third, the **Recreation Facilities Study Area** (see Figure 3.0-1) encompasses a broader area than the Recreation Use Study Area. The western and northern boundaries (the Parks and Denali highways, including areas ¼ mile west and ¼ mile north of the highways) are the same as the Recreation Use Study Area. The eastern and southern boundaries of the Recreation Facilities Study Area are defined as follows: the Richardson Highway corridor and areas west, from Paxson to the Glenn Highway intersection; the Glenn Highway corridor and areas north, from Glennallen west to Chickaloon; and joining the Recreation Use Study Area along the line running north from Chickaloon, following the Chickaloon River to its headwaters at the Chickaloon Glacier, and then connecting at the Y Junction on the Parks Highway.

4. METHODS AND VARIANCES IN 2014

The following section provides a brief summary of the tasks performed, the methods utilized, and any variances from the methods described in the Study Plan (Section 12.5.4 of the RSP 12.5).

4.1. Regional Recreation Analysis

The methods to assess regional and local recreation data related to recreation use were previously described in the ISR Section 12.5.4 filed in June 2014.

4.1.1. Variances

No additional work was performed in 2014, and thus there were no variances to the methods described in Section 12.5.4 of the RSP 12.5 for 2013 and 2014.

4.2. Trails

The methods for the inventory and mapping of recreation trails and routes in the Recreation Use Study Area, including both summer and winter uses, are described in detail in Attachment 1.

4.2.1. Variances

As described in Part C, Section 7.1.2 of the ISR filed with FERC in June 2014, AEA has added the Denali East Option road and transmission corridor to the study area. The proposed modification includes an expansion of the Recreation Effects Analysis Area by including a 5-mile buffer on the proposed Denali East Option and on new trails identified in 2013 that were found to have a nexus to the Project, notably the Butte Lake Trail and the Goose Lake Trail.

4.3. Recreation Use Areas

The methods to assess recreation use areas, including the Natural Resource Recreation Setting (NRRS) and special resource use designations, were previously described in Section 12.5.4 of the ISR filed in June 2014.

4.3.1. Variances

No additional work was performed in 2014; thus, there were no variances to the methods described in Section 12.5.4 of the RSP 12.5 for 2013 and 2014.

4.4. Recreation Supply, Demand, and Use

The methods to assess recreation supply, demand, and use were previously described in Section 12.5.4 of the ISR filed in June 2014.

4.4.1. Variances

No variances from the methods described in the Study Plan for recreation supply, demand, and use (RSP Section 12.5.4) were necessary beyond those described in Section 12.5.4 of the ISR filed in June 2014.

4.5. Recreation Facilities and Carrying Capacity

The methods to assess recreation facilities and carrying capacity, including public and private recreation facilities, dispersed recreation sites, and access points, were previously described in Section 12.5.4 of the ISR filed in June 2014.

4.5.1. Variances

No additional work was performed in 2014; thus, there were no variances to the methods described in Section 12.5.4 of the RSP 12.5 for 2013 and 2014.

4.6. Survey Data Collection

The methods for the collection of user data, including intercept recreational user survey, regional resident household mail survey, nonresponse bias telephone survey, and executive interview, are described in detail in Attachment 2.

4.6.1. Variances

No variances from the methods described in the Study Plan for the Survey Data Collection (RSP Section 12.5.4) were necessary beyond those described in Section 12.5.4 of the ISR filed in June 2014.

4.7. Geographic Information System (GIS) Maps and Figures

The methods to identify and map recreation sites, facilities, and access routes (Revised Statute [RS] 2477 rights-of-way, 17(b) easements, and other recreation use trails) were previously described in Section 12.5.4 of the ISR filed in June 2014.

4.7.1. Variances

No variances from the methods described in the Study Plan for the GIS maps and figures (RSP Section 12.5.4) were necessary in 2013 or 2014.

5. RESULTS

This section summarizes the recreation data from the 2013 and 2014 study season collected pursuant to Section 12.5.4 of the RSP. Data developed in support of this study are available for download at <http://gis.suhydro.org/reports/isr>.

5.1. Regional Recreation Analysis

The complete results of the regional recreation analyses are presented in Section 12.5.1 of the ISR. The results present data related to recreation resources from various local and regional plans with a nexus to the proposed Project. The plans reviewed encompassed those plans specified in Section 12.5.1 of the Study Plan as well as other relevant plans identified. Common recreation themes and goals were identified and documented.

5.2. Trails

The complete results of the trail inventory, mapping, and classification effort are presented in Attachment 1 (*Trails Assessment and Classification Technical Memorandum*). Results presented in Attachment 1 include trail resources identified in Section 12.5.2 of the ISR filed in June 2014, as well as trail resources identified in 2014 from the addition of the Denali East Option road and transmission corridor. Results in Attachment 1 include a complete and comprehensive inventory of winter and summer trails and routes, with trails potentially affected by the Project mapped at a scale greater than 1:24,000. As specified in Section 12.5 of the FERC-approved Study Plan, results in Attachment 1 include trail classifications for those trails identified to have a nexus to the Project.

5.3. Recreation Use Areas

No additional work was performed in 2014 for recreation use areas. Section 12.5.3 of the ISR presents existing data on special resource use designations within the Recreation Use Study Area, including generally allowed use (GAU) lands, state parks, Wild and Scenic River designations, state public use areas, archaeological districts, and other areas with special recreation designations.

5.4. Recreation Supply, Demand, and Use

The results of the Recreation Supply, Demand, and Use Assessment were updated in 2014 and are presented in Attachment 2 (*Recreation Use Demand Assessment Technical Memorandum*). Attachment 2 presents updated results from the data presented in Section 12.5.4 of the ISR filed in June 2014. Updates are included for secondary utilization data compilation, existing survey research review, the Incidental Observation Survey, and demand assessment and future projections. Data presented in Attachment 2 include previously submitted data and new data collected in 2014 to fulfill the requirements set forth in Section 12.5 of the FERC-approved Study Plan. This portion of the study is complete.

5.5. Recreation Facilities and Carrying Capacity

No additional work was performed in 2014. Section 12.5.5 of the ISR presents existing data on recreation facilities, including dispersed recreation and access points, within the Recreation Facilities Study Area.

5.6. Survey Data Collection

The results of survey data collection were completed in 2014 and are presented in Attachment 2 (*Recreation Use Demand Assessment Technical Memorandum*). Attachment 2 provides results for the Susitna-Watana Recreation Intercept Survey, Susitna-Watana Recreation Regional Resident Household Mail Survey, Intercept Site Recreation Tallies, Nonresponse Bias Telephone Survey, and Executive Interview research. Data presented in Attachment 2 for the survey data collection effort fulfill the requirements set forth in Section 12.5 of the FERC-approved Study Plan. This portion of the study is complete.

6. DISCUSSION

6.1. Regional Recreation Analysis

AEA completed the Regional Recreation Analysis in the first study year, and a discussion of the results of the analysis is presented in Section 12.5.6 of the June 2014 ISR. For the analysis, the study team reviewed all of the community and resource plans specified in Section 12.5.4 of the FERC-approved Study Plan as well as six additional plans identified as relevant to recreation resources within the Recreation Use Study Area. The analysis summarized information from each plan related to recreation resources, including recreation goals, objectives, management principles, recommendations, and trends. The detailed and comprehensive review conducted by the study team, extending beyond those plans specified in the FERC-approved Study Plan, resulted in a detailed and comprehensive dataset of regional recreation planning information. The data presented in the June 2014 ISR meet the requirements outlined in Section 12.5.4 of the FERC-approved Study Plan and are adequate to assess baseline conditions for impact assessment. This portion of the study is complete.

6.2. Trails

A discussion of the results of the trail inventory, mapping, and classification effort is presented in Attachment 1. Since the submission of the June 2014 ISR, the study team completed the inventory, mapping, and classification of winter and summer trails with the potential to be affected by the Project. In 2014, AEA acquired additional high resolution imagery for those areas potentially affected by the Denali East Option road and transmission corridor, and mapped trail segments identified in these areas at a scale greater than 1:24,000. The 2014 trail data were combined with trail resource data presented in the June 2014 ISR, and the cumulative dataset is presented in Attachment 1. Given the comprehensive nature of the aerial imagery that was acquired for a large portion of the Recreation Use Study Area, the trail inventory and mapping data presented in Attachment 1 are considered to be comprehensive and of high quality.

Per Section 12.5.4 of the Study Plan, winter and summer trails with a nexus to the Project were classified in 2014 using the United States Forest Service (USFS) Trail Classification System, and Class 1 (informal all-terrain vehicle [ATV] hunting trails) were further classified based on trail braiding information acquired using aerial imagery. The trail inventory and mapping establish a detailed and high quality baseline for trail information within the Recreation Use Study Area. This portion of the study complete.

6.3. Recreation Use Areas

During 2014, no additional work was conducted to assess recreation use areas within the Recreation Use Study Area. A discussion of the results of the Recreation Use Area Assessment is presented in Section 12.5.6 of the June 2014 ISR. Existing data on special resource use designations are comprehensive and adequate to assess baseline conditions; however, additional work is required to conduct the NRRS for existing and post-Project conditions within the Recreation Use Study Area. This effort would utilize data from all other components of the Recreation Resources Study (12.5) once these sections are complete.

6.4. Recreation Supply, Demand, and Use

In 2014, the study team completed the assessment of recreation supply, demand, and use as specified in the FERC-approved Study Plan 12.5; a detailed discussion of the results is presented in Attachment 2 (*Recreation Use Demand Assessment Technical Memorandum*). Attachment 2 includes both data submitted in the June 2014 ISR, updated when appropriate, as well as extensive new data derived from the survey data collection effort completed in 2014.

In 2014, existing secondary utilization data from land managing organizations, existing survey research, and the Incidental Observation Survey data were updated to ensure a comprehensive review of these data sources. AEA also completed analysis of data from the Susitna-Watana Recreation Intercept Survey, Susitna-Watana Recreation Regional Resident Household Mail Survey, Intercept Site Recreation Tallies, Nonresponse Bias Telephone Survey, and Executive Interview research (see Section 6.6 and Attachment 2). Data from the completed survey data collection effort allowed the study team to develop estimates of current recreation demand (user days) for both Alaska residents and nonresidents, as well as identify recreation trends within the Recreation Use Study Area. A summary of results by selected recreation activity (hunting and

trapping, sportfishing, motorized boating, remote camping, roadside camping, hiking/backpacking/snowmachining, wildlife viewing [including bird watching], riding the Alaska Railroad, riding ATVs, flightseeing, bicycling, dog sledding [including skijoring], and Nordic skiing) was also completed. The data and analysis of recreation supply, demand, and use presented in Attachment 2 are comprehensive, detailed, and fulfill the requirements set forth in Section 12.5 of the FERC-approved Study Plan for this component of the study. This portion of the study is complete.

6.5. Recreation Facilities and Carrying Capacity

No additional work was conducted in 2014 to assess recreation facilities and carrying capacity within the Recreation Facilities Study Area. Work completed to date for this component of the study includes an initial inventory of public recreation facilities, dispersed recreation sites along the Denali Highway, and a comprehensive survey of recreation access points throughout the Recreation Facilities Study Area. Data collected thus far are of high quality and fulfill requirements outlined in the FERC-approved Study Plan Section 12.5.4. Additional work is required to complete this study component, including the collection of additional Americans with Disability Act (ADA) requirements for public recreation facilities; an inventory of key private facilities throughout the Recreation Facilities Study Area; and an inventory of dispersed recreation sites along the Richardson, Glenn, and Parks highways. The additional information would be collected through future field investigations and support an assessment of carrying capacity assessment for developed recreation sites, major dispersed use areas, and trails within the Recreation Facilities Study Area. A discussion of the existing data from the Recreation Facilities and Carrying Capacity Assessment is presented in Section 12.5.6 of the ISR.

6.6. Survey Data Collection

In 2014, the study team completed all requirements associated with the survey data collection component of the study; a detailed discussion of the results is presented in Attachment 2 (*Recreation Use Demand Assessment Technical Memorandum*). Following the submission of the June 2014 ISR, Section 12.5, the study team has updated existing survey data for the Recreation Use Study Area, and all Incidental Observation Surveys received were compiled and documented. AEA completed the collection and assessment of all data from the Susitna-Watana Recreation Intercept Survey, Susitna-Watana Recreation Regional Resident Household Mail Survey, Intercept Site Recreation Tallies, Nonresponse Bias Telephone Survey, and Executive Interview research (see Attachment 2). The results of the survey data collection effort are comprehensive and high quality, and will enable the study team to accurately assess the baseline recreation use levels for Alaska residents and non-resident users throughout the Recreation Use Study Area. Results of the survey data collection component fulfill the requirements set forth in Section 12.5 of the FERC-approved Study Plan. This portion of the study is complete.

7. CONCLUSIONS

Significant progress has been made since June 2014 in meeting the objectives of the Recreation Resources Study. In 2013 and 2014, AEA completed the inventory, mapping, and classification of trail resources within the Recreation Use Study Area, as well as the collection and analysis of

recreation use and demand data derived from the survey data collection component of the study. The field work, data collection, data analysis, and reporting for this Recreation Resources Study successfully meet the study objectives in the FERC-approved Study Plan. The results of this Recreation Resources Study are reported herein and earlier by AEA in the June 2014 ISR.

Remaining tasks under the Recreation Resources Study include the completion of the Recreation Use Area Assessment (including the NRRS analysis) for existing conditions and post-Project conditions within the Recreation Use Study Area, as well as the completion of the Recreation Facilities Inventory and the Carrying Capacity Assessment within the Recreation Facilities Study Area.

7.1. Decision Points from Study Plan

In 2013 and 2014, AEA collected information on river recreation use and experience, and coordinated with the study teams for the Instream Flow Study (Study 8.5), Ice Processes in the Susitna River Study (Study 7.6), Geomorphology Study (Study 6.5), River Recreation Flow and Access Study (Study 12.7), and Aesthetics Resources Study (Study 12.6). The first year results from the Instream Flow Study (Study 8.5), Ice Processes in the Susitna River Study (Study 7.6), Geomorphology Study (Study 6.5), Recreation Resources Study (Study 12.5), and Aesthetics Resources Study (Study 12.6) do not indicate that the Project would affect river flows in a way that would affect recreation use of the reach of the river downstream of the Parks Highway Bridge (PRM 88.9) as described in the June 2014 ISR, Part C (Section 7.1.1).

8. FIGURES

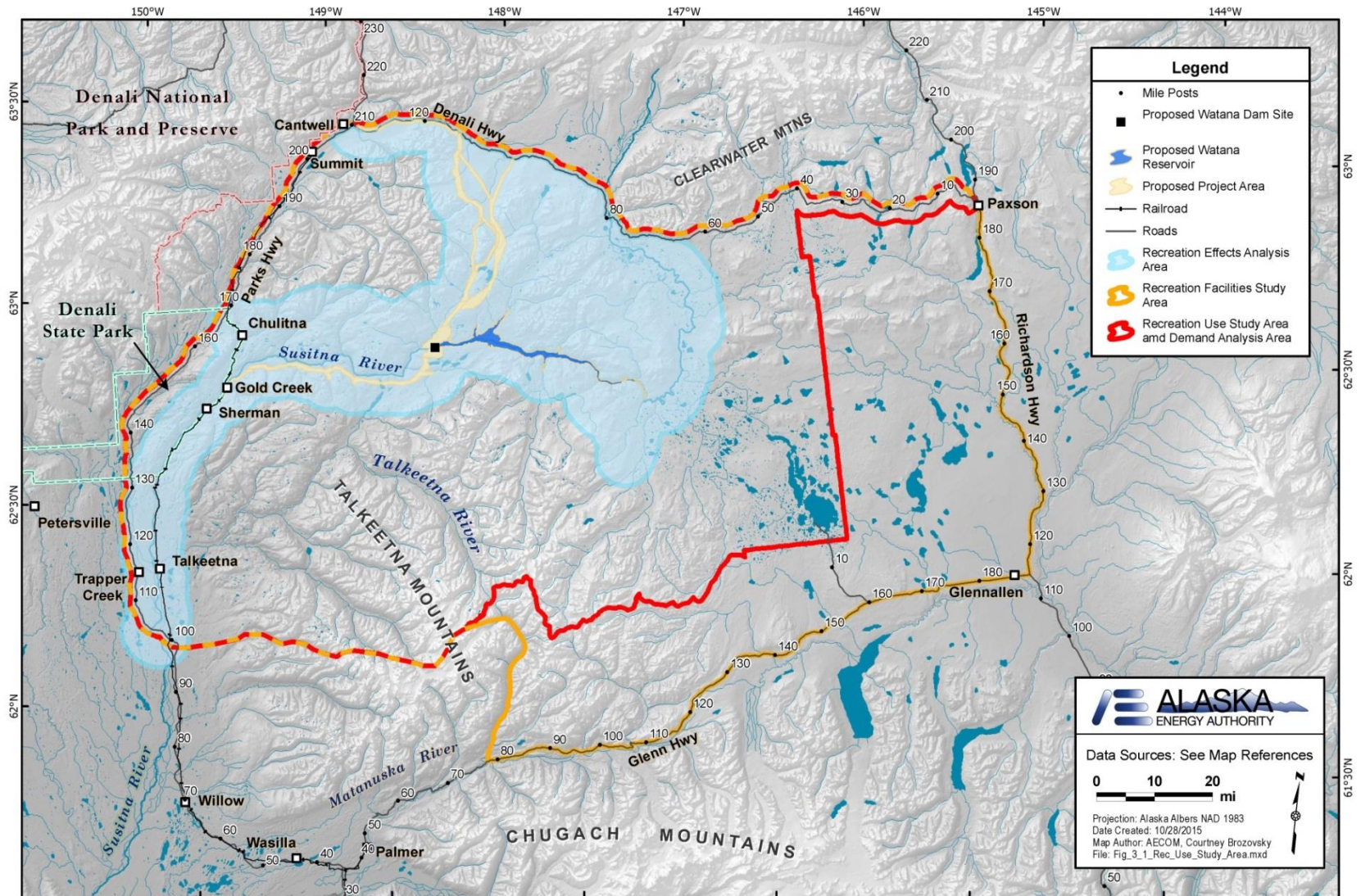


Figure 3.0-1. Study Areas for the Recreation Resources Study