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

**Recreation Resources Study
Study Plan Section 12.5**

Final Study Plan

Alaska Energy Authority



July 2013

12.5. Recreation Resources Study

On December 14, 2012, Alaska Energy Authority (AEA) filed with the Federal Energy Regulatory Commission (FERC or Commission) its Revised Study Plan (RSP), which included 58 individual study plans (AEA 2012). Included within the RSP was the Recreation Resources Study, Section 12.5. RSP Section 12.5 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 Susitna-Watana Hydroelectric Project (Project), and helping assess the potential impacts of Project construction and operation on those resources and activities. RSP 12.5 provided goals, objectives, and proposed methods for aesthetic resources data collection and analysis.

On February 1, 2013, FERC staff issued its study determination (February 1 SPD) for 44 of the 58 studies, approving 31 studies as filed and 13 with modifications. RSP Section 12.5 was one of the 13 approved with modifications. In its February 1 SPD, FERC recommended the following:

We recommend that AEA modify the Recreation Resources Study Plan as follows:

- *The study area should be modified to include the area within one-quarter mile west of the George Parks Highway and one-quarter mile north of the Denali Highway.*
- *The intercept and mail survey instruments should include a specific component that evaluates whether the recreational experience is “Guided/Unguided and defines party size.*
- *One or more questions addressing potential user conflict should be added to the survey (e.g., identifying activities that diminish the quality of one’s experience).*
- *The “Don’t Know” and “Refused” fields should be removed from the intercept survey instrument.*
- *Intercept surveys should be conducted through all the fall and winter months of 2013-2014, weather permitting, and focused on an abbreviated list of survey locations identified through stakeholder input. The list should be finalized at the same time final survey instruments are reviewed by stakeholders.*
- *Final intercept and mail survey instruments should be filed with the Commission by April 15, 2013. The Recreation TWG should be allowed a minimum of 15 days to review the instruments before filing them with the Commission. The filing should include stakeholder comments on the instruments and how such comments were addressed.*
- *Trails in the immediate project area should be mapped at a scale of 1:24,000 national map accuracy standard of +/- 40 feet.*
- *Include in the initial study report any proposed modifications to the study plan based on the first year’s data on the lower river uses, hydrology, and ice processes.*

In addition, in accordance with the sixth bulleted recommendation listed above, AEA convened a Recreation TWG meeting on February 25, 2013 to review the draft survey instruments and discuss AEA’s plans for pre-testing such instruments. As a result of the meeting and subsequent Recreation TWG comments on modified intercept and mail survey instruments, AEA provided the final intercept and mail survey instruments in a supplemental filing to the Commission dated April 15, 2013.

In accordance with the February 1 SPD and the supplement filing on April 15, 2013, AEA addressed the recommended modifications in the Final Study Plan for Section 12.5. These modifications are included in this Final Study Plan.

12.5.1. General Description of the Proposed Study

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 Susitna-Watana Hydroelectric Project (Project), and to help assess the potential impacts of Project construction and operation on those resources and activities. The specific goals of the 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.

12.5.2. Existing Information and Need for Additional Information

Existing information was compiled in the Recreation Data Gap Analysis (AEA 2011a) and recreation resource descriptions and inventory presented in AEA's Pre-application Document (PAD) (AEA 2011b). A study was conducted in 2012 to gather data to inform the 2013-2014 Recreation Resources Study plan, and included the following elements:

- Interviews and meetings, including Technical Workgroup (TWG) meetings, with key representatives of agencies and organizations knowledgeable about regional and state recreation management and issues.
- Preliminary compilation of existing recreation use data, inventory, and capacity information, including data for the Railbelt planning area as outlined in the SCORP 2009-2014. This Railbelt planning area includes those urban and rural communities accessible from Alaska's limited road and rail system, generally from the southern end of the Kenai Peninsula, north to Fairbanks, and east to the Canadian border (ADNR 2009).
- An inventory of Project area access.
- Incidental Observation Survey (IOS) data (completed by field crews).
- Coordination with other study disciplines and incorporation of data.
- Geo-referenced mapping.
- Field reconnaissance (July 2012), focusing on five general areas:
 - Reconnaissance and familiarization with the Susitna River corridor and trail network by boat and air

- Ground reconnaissance of recreation facilities, use areas, and trails along portions of the Parks and Denali Highways
- Identification of downstream recreation opportunities and access points
- Determination of viewsheds
- Identification of and possible intercept survey locales necessary for the recreation demand assessment

Available information from the 2012 data gathering efforts was presented and discussed at various TWG meetings, informing the Revised Study Plan's (RSP's) methodological approach.

12.5.3. Study Area

Three geographic areas are defined and used in this study plan:

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, the proposed Project reservoir and some nearby shore lands and trails surrounding the reservoir location (see Figure 12.5-1). This area includes the proposed Watana Dam, located on the Susitna River at river mile 184 (measured from the mouth of the river), and the resulting Watana Reservoir. The dam would create an approximately 39-mile long lake which will be accessible to the general public. In addition, it is expected that the Susitna River corridor from the Denali Highway to the proposed reservoir would receive more recreation use than it currently receives and overland use via existing trails by hunters, anglers, trappers, and recreationists will likely increase as an indirect effect of the proposed Project. The study plan is designed to assess the potential impacts to recreational and aesthetic resources as a result of the Project, including potential conflict among recreational users and increased access and visual changes to the Denali State Park east of the Parks Highway. AEA plans to study the potential indirect effects of the proposed Project and thus 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 proposed access road and transmission line corridors, and other Project facility locations. The flow routing analysis and ice processes studies will be used to either confirm the 2013 Recreation Effects Analysis Area is appropriate or suggest that areas further downstream should be included in the 2014 Recreation Effects Analysis study area. The Recreation Effects Analysis Area will be adjusted, if appropriate, prior to the 2014 survey efforts. Any proposed adjustment will be recommended in AEA's Initial Study Report, which will be prepared and distributed in early February 2014.

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 (see Figure 12.5-1):

- The Parks Highway corridor (including the area ¼ mile west of the highway) and areas east, from the "Y" at the Talkeetna Spur Road intersection to Cantwell (including the Denali State Park)
- The Denali Highway corridor (including Brushkana and Tangle Lakes Campgrounds, and the area ¼ mile north of the highway) and areas south, 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 Lake Louise area)
- North from the Matanuska-Susitna Borough boundary (located south of Lake Louise), joining the Susitna River basin boundary, and then continuing from a line running north from Chickaloon, following the Chickaloon River to its headwaters at the Chickaloon Glacier, and, from there, turning west from the Chickaloon Glacier to connect at the Y Junction on the Parks Highway

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.

If studies conducted in 2013 indicate that there may be Project-related changes to instream flow, sediment transport, and ice formation on the portion of the river from the Parks Highway Bridge downstream on the Susitna River that could affect recreation, an expansion of the Recreation Use Study Area/Recreation Supply and Demand Analysis Area and associated level of analysis of recreation resources uses to include the effected portion will be triggered in time for the 2014 study season. The 2014 study year also provides a contingency if an unusual condition occurs during the 2013 field data collection season, such as earthquakes and floods, or significant closures to fishing and hunting seasons. Any recommended changes to any study areas will be included in AEA's Initial Study Report, which will be prepared and distributed in early February 2014.

Third, the Recreation Facilities Study Area (see Figure 12.5-1) encompasses a broader area than the Recreation Use Study Area. The western and northern boundaries (Parks and Denali highways, including areas $\frac{1}{4}$ mile west and $\frac{1}{4}$ mile north of the highways, respectively) are the same as the Recreation Use Study Area. The eastern and southern boundaries of the Recreation Facilities Study Area are defined as:

- 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.
- Joining the Recreation Use Study Area along the line running north from Chickaloon, following the Chickaloon River to its headwaters at the Chickaloon Glacier. From there, turning west from the Chickaloon Glacier to connect at the Y Junction on the Parks Highway.

12.5.4. Study Methods

The Recreation Resources Study will analyze both water and land-based recreation uses; access considerations; and seasonality in the Recreation Use Study Area. Seasonal uses that relate to winter use of the river corridor for recreation also will be analyzed. In addition, specialized study of river flow-dependent activities will be conducted (described in Section 12.7).

Regional Recreation Analysis

The regional recreation resources context was defined in coordination with agencies, Technical Workgroups, and other participants. Regional and local data related to recreation use has been and will continue to be collected and analyzed, including examination of various land management regimes within the Recreation Use Study Area. Existing resource management plans relevant to the recreational resources have been reviewed and will be used for further analysis throughout the study. The analysis will consider and rely on the existing and proposed community and regional plans, and private sector plans. These plans include:

- Alaska Department of Transportation and Public Facilities (ADOT&PF). 2008. George Parks Highway Scenic Byway Corridor Partnership Plan. Published online at: <http://dnr.alaska.gov/parks/interp/pdf/georgeparkshwyscenicbyway.pdf>.
- Alaska's Outdoor Legacy Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2009–2014 (Alaska Department of Natural Resources [ADNR] 2009)
- Alaska Recreational Trails Plan (ADNR 2000)
- Chase Comprehensive Plan (MSB 1993)
- Cultural Resource Management Plan for the Denali Highway Lands (VanderHoek 2005)
- Denali State Park Management Plan (Alaska Division of Parks and Outdoor Recreation [DPOR] 2006)
- DPOR Ten Year Strategic Plan 2007–2017 (DPOR 2007)
- East Alaska Resource Management Plan (Bureau of Land Management [BLM] 2006)
- MSB Comprehensive Development Plan (MSB 2005)
- MSB Trails Plan (MSB 2008)
- MSB Comprehensive Economic Development Strategy (TIP Strategies Inc. 2010)
- MSB Parks and Recreation Open Space Plan (MSB 2000)
- South Denali Implementation Plan and Environmental Impact Statement (National Park Service [NPS] 2006)
- Susitna Area Plan (ADNR 1985)
- Susitna Basin Recreation Rivers Management Plan (ADNR 1991)
- Susitna Matanuska Area Plan (ADNR 2011)
- Talkeetna Comprehensive Plan (MSB 1999)

Each of these plans will also be analyzed for information related to anticipated recreation needs in the Recreation Use Study Area/Recreation Supply and Demand Analysis Area.

Trails

There are a wide range of formal and informal trails and routes found within the Recreation Use Study Area. Recreational ORV and snowmachine use are also major recreational uses within this study area, and repetitive use has contributed to an extensive network of user-created trails throughout the study area. Several methods, described below, will be used to gather information needed to map and confirm which trails might be affected by the Project. Existing trails in the

immediate Project area will be mapped at a scale of 1:24,000 with a national map accuracy standard of +/- 40 feet.

Non-snow covered trails within or leading into or out of the Project area have been mapped using aerial imagery, and GIS datasets derived from multiple agency sources. These include multiple formal and informal trails and routes, several formally identified Revised Statute (RS) 2477 trails, and Alaska Native Claims Settlement Act (ANCSA) 17(b) trails. Additions and edits to the comprehensive map and inventory will be derived from field identification, agency interviews, and surveys. Many trails and access routes will be verified via helicopter due to the remote and dispersed nature of the Recreation Use Study Area. The focus will be on trails and access routes that may be affected by development of the Project.

If a common and repetitive use pattern can be discerned, snow-covered trails, such as ski and snowmachine trails, will be located according to winter aerial photography, field observations, winter intercept surveys, and executive interviews.

A trail classification system will be utilized once all relevant trails to be included in the study have been identified and mapped. The U.S. Forest Service has adapted a National Trail Classification System that has been adopted by most federal land management agencies (Federal Register 2006). The Alaska Department of Natural Resources has utilized an adaptation of this system (ADNR 2008). AEA will coordinate with the BLM Glennallen Field Office in undertaking this effort, as BLM has already completed trail inventories for some trails off the Denali Highway.

Each trail with a Project nexus will be classified into one of five Trail Classes, ranging from least developed (Trail Class 1) to most developed (Trail Class 5). Descriptors will be refined to reflect typical attributes of trails in each class. These attributes include:

- Tread and traffic flow
- Obstacles
- Constructed features and trail elements
- Signs
- Typical recreation environment and experience (using Recreation Opportunity Spectrum classifications)
- Level of trail management (what type/level of use the trail is managed to accommodate).

The majority of trails within the Recreation Use Study Area, particularly those stemming from the Denali Highway, could be categorized as Trail Class 1 (least developed). Sub-classes of Trail Class 1 can also be uniquely developed according to access use, such as “ATV hunting route.” Trails that have historical use, and are legal under State “generally allowed uses,” but have not been named or identified by ADNR, will also be included. Land management of trails, including that of 17(b) easement trails, will also be identified.

Recreation Use Areas

Recreation Activity Areas identified in the SCORP will be used in the analysis. The ROS (USFS 1979) framework will be used to describe recreation opportunity areas. The ROS is a framework for classifying and defining different classes or types of outdoor recreation environments, activities, and experience opportunities (USFS 1979). The original ROS inventory system embodied six land classes: primitive; semi-primitive non-motorized; semi-primitive motorized; roaded natural; rural; and urban. Each class is described by a “typical” setting based on factors

such as size, naturalness, and the presence or absence of motorized vehicles and other sights and sounds of humans (More et al. 2003). The Natural Resource Recreation Setting (NRRS) analysis is an expansion of the BLM's system, and will also be utilized (BLM 2010). The NRSS analysis adds emphasis on social and operational characteristics.

The BLM Glennallen Field Office has conducted an inventory of the existing recreation opportunities available across the East Alaska planning area (BLM 2006). BLM completed a trail inventory in 2005, which had an effect on ROS class boundaries within the planning area, particularly along the Denali Highway. Most of the BLM-managed lands within the Recreation Use Study Area are managed as primitive. Additional ROS classes also found on BLM-managed lands within this area include semi-primitive non-motorized, semi-primitive motorized, remote developed lakeside, backcountry roaded, and special (BLM 2006).

The NRRS analysis is an adaption of ROS analysis. The ROS was developed to describe the mix of possible outdoor recreation settings based on the assessment of physical, social, and operational (administrative) recreation site characteristics (RSCs). To make the ROS easy to interpret, the spectrum was sub-divided into classes ranging from primitive to urban. Traditionally, the ROS process mapped all RSCs separately then merged all maps together into one final composite map. This often resulted in inconsistencies between the physical, social, and operational settings. The conflicts were resolved by emphasizing the physical character of the landscape or averaging the differences. Unfortunately, this often resulted in a misrepresentation of the social and operational qualities of the recreation area, making ROS difficult to understand and implement. The NRRS is different in that it allows the physical, social, and operational RSCs to be displayed individually. Displaying RSCs individually helps to accurately depict the current recreation settings, displays the complexity of the recreation setting, provides clear implementation direction, and creates adaptive and useful planning products. A NRRS analysis will be conducted for existing conditions and post-project conditions within the Recreation Use Study Area. Results will be displayed in narrative, graphical, and tabular format.

Scenic Byways, Wild and Scenic Rivers (WSRs), and other special resource use designations will be identified and described, as applicable.

Recreation Supply, Demand, and Use

Currently, recreation uses of the Recreation Use Study Area are widely dispersed. Visitors to the area (both visitors to Alaska and regional Alaska residents) participate in a wide variety of seasonal activities including sport hunting, sport fishing, recreational boating, skiing, snowshoeing, ATV and/or ORV use, hiking, wildlife viewing, and snow-machining. Sport hunting and fishing are major recreation uses in the Recreation Use Study Area. It is noted that sport hunting, fishing, and other resource gathering activities are distinguished from subsistence activities, which are described in Section 14.

A baseline of developed and dispersed recreation uses, including types, levels, and access will be estimated and described. High use locations will be identified by activity, along with daytime and overnight visits, and seasonal patterns. User preferences and opinions about the quality of recreation resources and recreational experience will also be described based on survey results (outlined in the following sections) as well as other secondary sources. Data will be collected through a literature review (e.g., economic impact analyses of various recreation uses, visitor industry impact analyses, recreation resource planning documents), data-mining of agency

databases (e.g., Alaska Department of Fish and Game fish harvest and hunting records) and a comprehensive survey and interview program, described below.

Future recreation supply and demand, including latent demand, will be assessed, based on the SCORP; Matanuska-Susitna Borough planning documents; other published sources; information derived from the intercept and mail surveys; and interviews. Effects of the Project features (e.g., reservoir and access roads) on consumptive uses such as hunting, trapping, berry picking, and fishing opportunities, and on non-consumptive uses such as bird-watching, wildlife-viewing, hiking, camping, boating in the Recreation Effects Analysis Area will be assessed. Additionally, the recreation effects of Project-induced changes in ice formation on the Susitna River will be evaluated within this area. Recreation demand within the Recreation Use Study Area will be estimated from a variety of sources outlined above for a 50-year period.

Recreation Facilities and Carrying Capacity

There are no existing developed recreation facilities on the Susitna River near the proposed Watana Dam site. Both public and private developed recreation facilities exist, however, on other lands in the Recreation Facilities Study Area. These facilities are primarily located along the road system. In addition to developed recreation facilities, dispersed recreation use areas are important recreational components to be considered. Dispersed recreation use areas include undeveloped day use and overnight recreation sites/use areas that are user-defined and may be accessible by foot, watercraft, or vehicle.

Developed public recreation facilities within the Recreation Facilities Study Area have been mapped and initially inventoried. Methods for the recreation site facility inventory and evaluation will include review of published information, consultation with agencies, facility owners, and operators, and site-specific field investigations. Site attributes will be further inventoried according to field observations, and facility owner/operator data. Public access to recreation sites will also be described, including consistency with relevant accessibility standards, including the Americans with Disabilities Act (ADA), as appropriate.

The existing physical carrying capacity of developed recreation resources in the Recreation Facilities Study Area will be estimated. Public facilities will be inventoried and described as to condition, capacity, adequacy and operational cost. Private facilities will also be inventoried to the extent practicable.

The capacity of additional reasonably foreseeable recreational facilities will be identified. Carrying capacity guidelines and standards will be applied to help develop recommendations for future recreation facilities and sites. Data on the social aspect of carrying capacity (such as crowding) will be collected in the recreation use surveys.

In addition to developed recreation facilities, dispersed recreation sites and use areas and trails that access the Recreation Effects Analysis Area are important recreational components to be considered. Dispersed recreation sites and use areas will include undeveloped day use and overnight recreation sites/use areas that are user-defined and may be accessible by foot, watercraft, or vehicle. Objectives of the dispersed recreation sites and use areas study include the following:

- Describe dispersed recreation use areas and sites in the study Recreation Facilities Study Area (types of locations, access, vegetation, and presence of campfire rings, tables,

cleared camping areas, etc.). Attributes of well-used sites and representative occasional use areas will be inventoried.

- Evidence of trampling, vegetation damage or removal, exposed soil or compaction, litter and debris, or sanitation issues will be identified.
- Potential effects of potential future Project operations on dispersed recreation use areas, sites, and access will be identified.

This information will be collected in 2013 field visits, from agencies, recreation providers, and in results of multiple surveys described below. GPS coordinates will be taken as appropriate, and included on geo-referenced facility maps. An analysis of existing recreation facilities is necessary in order to estimate the capacity to accommodate projected recreation use levels, or those associated with changes created by the proposed Project.

Recreation carrying capacity encompasses biophysical/ecological, social, and managerial aspects (Stankey and Manning 1986). These three parameters of capacity can be further described as follows:

- Biophysical (ecological) capacity – typically related to the biophysical characteristics of the natural resource base, including the ability of the resource base to absorb potential recreation-related impacts without an unacceptable level of deterioration.
- Social capacity – typically associated with the characteristics of the visitor base, including preferences, demand, and needs, including the ability to absorb potential recreation-related impacts without unacceptable impacts to the character and quality of the recreation experience.
- Managerial capacity – typically concerned with recreation provider-controlled resources and policies, including legal directives, policy guidelines, goals and objectives, and funding priorities.

Recreation carrying capacity investigations are typically conducted with two purposes in mind: as a research tool; and as a monitoring/management tool. As a research tool, recreation carrying capacity studies define the biophysical, social, and managerial capacity of an area based on existing opportunities and constraints that can later be applied to future use level estimates. As a monitoring/management tool, recreation carrying capacity studies are often used to identify specific indicators and standards/guidelines of quality and experience to be used to keep existing and anticipated future recreation use within established parameters. For the purposes of this study, the recreation carrying capacity analysis will be used as a research tool. Indicators and standards/guidelines for the Project may be developed at a later date if necessary.

Capacity will be assessed at developed recreation sites, major dispersed use areas and trails, and within the Recreation Facilities Study Area (Figure 12.5-1). The analysis will involve the following steps:

- Compile and review existing data related to recreation carrying capacity
- Analyze data to determine indicator measures that characterize existing conditions
- Recommend potential carrying capacity indicators and standards/guidelines for future use

Survey Data Collection

The collection of recreation user data will be accomplished through multiple methods, including literature reviews, secondary data compilation, intercept, on-line, mail and telephone surveys,

and executive interviews. Incidental observation and draft intercept survey instruments have been designed to collect information typical of and compatible with other FERC efforts. All surveys will collect data for use in the recreation, aesthetics, and recreation flow studies in this section, as well as data for the transportation and socioeconomic studies.

Identification and Analysis of Salient Data from Existing Survey Research

Recreation supply and demand data from other recreation planning sources applicable to the region will be synthesized. Existing data can inform estimates of levels (e.g., “recreation days”) and types of participation in recreation uses. The estimates will include a discussion and comparison of participation rates in activities regionally and, where secondary data is readily available, at the statewide and national level. Recreation trends, as forecast in other studies, will also be described.

Survey data from the 1985 studies (Harza-Ebasco 1985) and other surveys such as the SCORP (ADNR 2009), Alaska Residents Statistics Program (ARSP) (Fix 2009) and the Alaska Visitor Statistic Program VI (AVSP VI) (McDowell 2012) have been reviewed.

SCORP (ADNR 2009) included a statewide telephone (600 households), mail (517 surveys), and online survey (2,338 surveys) to identify what Alaskans currently do for outdoor recreation and what opportunities are desired for the future.

The ARSP Survey (Fix 2009) was a statewide mail survey that gathered information regarding Alaska residents’ travel in Alaska, recreation activities in which they participate, use of facilities, visitation patterns, and factors contributing to the quality of life.

The AVSP VI Survey (McDowell 2012) was a statewide survey research program commissioned by the Alaska Department of Commerce, Community and Economic Development. The year-round survey program included 6,747 visitors to Alaska in the summer of 2011 and 1,361 visitors in Fall/Winter/Spring 2011/2012.

These data will be utilized to describe year-round nonresident (non-Alaskan) experiences by visitors in three major communities in the MSB (Palmer, Wasilla, and Talkeetna), passengers on the Alaska Railroad, and cruise passengers (visiting McKinley Princess Lodge).

The existing data include:

- Lodging types
- Activities
- Length of stay
- Purpose of trip
- Previous travel to Alaska
- Modes of transportation used within the state
- Trip spending
- Communities visited (overall and overnight)
- Demographics (origin, age, income, party size).

Nonresident data will be evaluated along with existing data relating to recreation use by Alaska residents, in the context of the overall study plan.

Incidental Observation Survey (IOS)

The purpose of the IOS is to capture information from field researchers about dispersed recreational use within the Recreation Use Study Area. The survey was deployed in 2012 and will help gather information on the date and time of day recreation activity was observed, the type of activity observed, number of people engaged in the activity, and the location of the observed activity. This survey does not have statistical value, but it helps to identify types and patterns of recreational use in the Recreation Use Study Area. A protocol accompanies the survey to inform field crews how to complete and submit the survey. The survey will be used throughout the entire study period (see Attachment 12-1).

Intercept Surveys and Structured Observation Visitor Counts

The purpose of the in-person intercept surveys is to gather recreation user data, which includes uses, frequency, quality of recreation and/or aesthetic experience, recreation spending, and other perceptions of the Recreation Use Study Area.

The remote nature of the Recreation Use Study Area significantly determines where recreation users can be intercepted for surveying. The proposed Recreation Use Study Area is largely bounded by paved and unpaved highways, which provide primary access to the area. Recreation users penetrate further into the core of the proposed Recreation Use Study Area via:

- Paved and unpaved roadways
- The Alaska Railroad, with some trains carrying passengers through the area and the Hurricane train providing whistle stop service within the area
- Fixed wing aircraft and helicopters, used for sightseeing and to access remote lodges, lakes, streams, and hunting areas
- Campgrounds and trailheads
- ATV/ORV trails, both official and unofficial

Intercept surveyor teams will survey recreation users throughout fall and winter months of 2013-2014. More so than calendar date — with perhaps the exception of opening days for hunting and trapping seasons — weather will likely dictate the beginning and end of the seasonal survey periods. Contingencies for unforeseen circumstances, such as snowstorms, flooding, road closures, etc., will be considered in the sampling plan (for example, altering or extending the sampling period, selecting “make up” sampling days, etc.) and a component of the survey team training. Flexibility will be necessary, particularly during the shoulder seasons, to operate safely in the field and gather an adequate sample of recreation users during those periods.

Multiple survey teams will be used to compensate for sampling schedules that require long distances to be traveled between intercept points, limited daylight hours, and potentially difficult seasonal travel. For personal safety reasons, each team will include two people.

All surveyors will be trained and supervised by experienced survey managers. Surveyors will wear protective clothing (for safety reasons) and will have visible badges and/or uniforms (such as vests, hats, coats, etc.) to indicate their official capacity.

In addition, AEA will notify BLM prior to surveying campgrounds on federal lands administered by BLM.

Incentives for participation in the surveys (intercept, mail, or online) will be used. Incentives, such as small tokens of appreciation or an opportunity to enter a drawing for a prize will

motivate some respondents and will result in higher response rates than would otherwise be achieved.

Online Survey Option

To gather as much recreation information as possible, the intercept survey will be supplemented with an equivalent online version of the survey. To accommodate the different methods of delivery, survey design will differ between the personal intercept survey and the online version. A specially designed invitation card with instructions on how to participate in the online survey will be left by surveyors on vehicles at intercept points when users are not present. A statement will be added to the card to discourage littering of the invitation by non-respondents.

It is anticipated that use of the cards will increase the number of completed recreation surveys. However, it is not possible to predict how many recreation users might complete an online version of the survey via this methodology.

The invitation card will be printed on waterproof paper and include a map of the proposed Project Area on the backside. The front side will provide a brief description of the Project and the purpose of the recreation user survey, an invitation to participate, and a URL link to the survey. Each card will include a unique password, allowing users one time access to a secure online survey site.

As with mail surveys, self-selection bias is a consideration in online surveys. Demographics, and potentially other data, can be used to compare online survey results with the results from the random intercept surveys to determine if self-selection bias is an issue. If necessary, weighting could be used to adjust for any bias.

Observational Tallies

On sample days, the survey crews will observe key characteristics of recreation use (e.g., the number of people present, the number of vehicles entering/exiting the access site, types of recreation activities evident) and record this information on pre-printed tally forms. Users to be surveyed in person will be selected by availability and willingness to participate.

Intercept Locations

Many of the intercept locations are privately owned or managed. Under these circumstances, permission to intercept recreation users will be sought prior to fielding. Public lands managers will be notified to alert them of the study, survey fielding methodology, and sample schedule prior to fielding.

Once in the field, a better understanding of recreation use patterns (especially seasonal use) may necessitate further refinement of the intercept points. In addition to sampling from the identified key locations, surveyors will conduct surveys with observed recreation users as circumstances allow (such as private aircraft owners in Talkeetna and Willow). Figure 12.5-2 is a map indicating key intercept locations. Included in Figure 12.5-2 are:

Deshka Landing, Willow Air, Susitna Landing, and Talkeetna

- Deshka Landing
- Willow Air float and air strip
- Susitna Landing

- Talkeetna
 - Talkeetna boat launch
 - Alaska Railroad terminal
 - Local air carriers at the Talkeetna Airstrip and area float plane lakes
 - Mahay's Dock
 - Talkeetna Gravel Bar
 - Downtown Talkeetna

Parks Highway Intercept Locations

- Sunshine Creek Stream access
- Susitna Bridge River access (gravel bar)
- West-side pull-out just past Susitna River Bridge
- Trapper Creek Inn and RV Park
- Mt. McKinley Princess
- Boy Scout High Adventure Scout Base
- Troublesome Creek Trailhead and campground
- Byers Lake Trail head and campground
- Honolulu Creek bridge
- Denali Viewpoint North and South
- East Fork Chulitna Wayside/Campground
- Jack River bridge
- Additional small pull-outs

Denali Highway Intercept Locations

- Joe/Jerry Lakes
- Brushkana Creek Campground (MP 104)
- Gracious House
- Susitna River Bridge (MP 79.5)
- Alpine Creek Lodge (MP 86)
- Clearwater Creek Wayside/Trail (MP 55.5)
- Maclaren River Lodge (MP42)
- Osar Lake Trail
- Alphabet Hills Trail

- Swede Lake Trail
- Denali Highway Tours and Cabins
- Sevenmile Lake OHV Trail
- Tangle River Inn (MP20)
- Tangle Lakes Campground (MP 21.5)
- Tangle Lakes Boat Launch (MP 22)
- Delta National Wild and Scenic River BLM Wayside (MP 21.5)
- Numerous pull-outs, gravel pits, informal campsites, and ATV/ORV trailheads

Glennallen and Lake Louise Access Intercept Locations

- Lake Louise/Susitna Lake
- Glennallen Airport

Winter Sample Plan

Survey Fielding: Late February through April 2013, and late October 2013 through March 2014. The winter season is weather dependent and the winter sampling period will start when the Denali Highway is closed to maintenance (usually around early to mid-October).

Winter activities primarily consist of snowmachining, dog sledding, cross-country skiing, snowshoeing, and trapping.

The final winter sample plan will primarily focus on the following intercept areas identified through stakeholder input:

- Deshka and Susitna Landings
- Talkeetna
- Parks Highway from Talkeetna to Cantwell
- Plowed sections of the Denali Highway from both Cantwell and Paxson (entire highway only maintained by the Alaska Department of Transportation and Public Facilities from mid-May through mid-October).
- Lake Louise area

Survey sampling will take place primarily on weekends and during special events, with some weekday sampling.

It is anticipated that the survey teams will work an average of two eight-hour days per week.

Spring/Summer/Fall Sample Plan

Survey Fielding: May through October 2013

The following sample plan is based on surveying approximately every week during the spring, summer, and fall periods. However, because of recreation use patterns in the Recreation Use Study Area, certain periods have significantly less use, while other periods have higher use (e.g.,

moose and caribou hunting season during the fall). Sample periods will be shorter during low recreation use periods and additional sampling may occur around peak activity periods.

A stratified random sampling will be used to collect a statistical sample of recreation users. The sample plan will first be stratified by month, day, and to some degree day parts. This will be overlaid with selected survey locations throughout the study area. Intercept sampling is based on the following pattern: Week One – travel (on a randomly selected start day and section of the day) from Willow Air and Deshka Landing, then proceed to Talkeetna, Cantwell, then Glennallen/Lake Louise over the next five days. Week Two – the survey period would begin one day of the week later and the route would be reversed. Surveyor teams will alternate their direction of travel, and departure days and times to allow a higher degree of random sampling during various days of the week and times of the day.

As surveyors proceed north to Willow (after completing Deshka Landing), they will stop at all key survey locations for a specified time and randomly survey as many recreating people as possible. They will also conduct incidental observation tallies of recreation participants and vehicles at all key sample locations. Online survey invitation cards will be left with unattended vehicles at intercept points on the northern portion of the Parks Highway, the Denali Highway, and at Lake Louise.

The team will work five 10-hour days traveling and surveying plus 10 hours per sampling period on paperwork and travel to and from the Recreation Use Study Area. Surveying will take place only during daylight hours. During peak summer months, surveying will take place between 8:00 a.m. and 8:00 p.m., with adjustments as needed for shoulder season light conditions. During this 12-hour time period, surveyors will work 10 hours and take two-hour breaks for rest and meals. Surveyors will travel by and camp in an RV (rented by the study team for the summer season) at appropriate locations along the route.

The variety of user groups and the multiple key survey locations identified in and around Talkeetna will result in surveyors spending one full day in this area (this includes sampling at the Willow airport and Deshka Landing).

Survey Instrument Design

The design of the intercept survey instrument will be iterative and a collaborative effort, not only capturing data needs for recreation resources, but also for aesthetics, socioeconomics, and other disciplines. A preliminary draft of the intercept instrument was included in the RSP as Attachment 12-2. As directed by the February 1, 2013 SPD, AEA finalized the intercept and mail survey instruments in consultation with licensing participants. The final surveys were filed with FERC on April 15, 2013 and are incorporated in this final study plan by reference.

The intercept survey instrument (and its online equivalent) includes the following information:

- Number in party
- Demographics
- Community of residence
- Day/overnight use and location
- Participation in type and location of recreation activity

- Rating of quality of recreation experience
- Level of satisfaction with facilities/recreation activities
- Aesthetic values
- Interest in potential new recreation facilities and opportunities
- Social aspects of the carrying capacity (i.e., crowdedness and potential user conflicts)
- Guided or unguided use
- Past use and intention for future use
- Trip expenses
- Means of access to the recreation area

Regional Resident Households Mail Survey

The purpose of the regional resident household mail survey is to gather information from a sample of regional households about their recreation activities in the Recreation Use Study Area, and to collect perspectives about recreational opportunities. Results of the survey will support development of a ratio of households that have visited the Recreation Use Study Area and identify the types of recreational activities in which they have engaged, essential data for estimating recreation days, and quality of recreation experiences, as well as provide reliable regional recreation spending data to be used in the socioeconomic study.

These data are particularly important in the analysis of the current and potential demand for recreation resources (to be completed in 2014).

A sample of 10,000 regional households, randomly-selected from an Alaska voter registration list, will receive a mail survey. The sample area for the mail survey includes the Fairbanks North Star Borough, Denali Borough, Matanuska-Susitna Borough, Municipality of Anchorage, and proximal communities within the Southeast Fairbanks and Valdez-Cordova census areas. The voter registration database is readily available, screens for those over age 18, and also contains a mailing address in addition to a physical address of those registered to vote. While it is understood that not all regional residents are registered to vote, this database represents a wider diversity of names and addresses than commercially purchased mailing lists.

Recipients of the mail survey will have the option of accessing the same survey at a secure URL site through the use of a unique password. This is an effective approach, as many respondents will prefer the convenience of responding to an online survey rather than completing and returning a paper survey. This option is anticipated to result in a higher response rate.

As mail surveys have the potential for self-selection bias, a nonresponse test utilizing a random sample telephone survey of 400 households (likely from three to seven questions) will be conducted to determine nonresponse patterns. This will include demographics, such as residency, gender, or age. Mail survey data may be weighted if warranted. Both land lines and cell phones will be included in the nonresponse telephone survey sample.

Although the response rate for the mail/online survey is difficult to predict, 15 to 25 percent is expected (1,500-2,500 surveys). An incentive to complete the survey, such as entry into a

drawing for a prize, will be used. Incentives are anticipated to result in higher responses rates than would otherwise be achieved.

This large mail sample size will allow for contact with a statistically significant number of households that have visited and used the Recreation Use Study Area for recreational purposes. However, even with a large overall sample size, a statistically significant sample for some of the smaller recreational user groups (such as dogsledding, rock climbing) may not be found. In all cases, qualitative and analogous research will be used to supplement the quantitative survey research.

Regional Resident Household Mail Survey Fielding: Late March/Early April 2013

The mail survey will be targeted to randomly selected households in the Fairbanks Northstar, Denali, and Matanuska-Susitna boroughs, Municipality of Anchorage and other areas in proximity to the Recreation Use Study Area, such as the Glennallen and Paxson in the Valdez-Cordova census area and Delta Junction in the Southeast Fairbanks census area.

The Dillman methodology for maximizing mail survey responses will be used, including pre-survey and reminder postcards, and two survey mailings. The sample will be mailed a postcard informing them that a mail survey will be arriving shortly, asking them for their cooperation in completing and returning the survey, and providing them the option to complete the survey online using their unique passcode. Approximately one week later, the mail survey will be sent, and followed up by a thank-you/reminder postcard, which will also provide them the option to complete the survey online. Approximately three weeks after the first survey mailing, a second survey will be sent to those who have not responded.

Regional Resident Household Mail Survey Content/Design Process

The survey will include a map in the survey booklet to allow respondents the opportunity (at their leisure) to visually review the boundaries of the Recreation Use Study Area. Other potential benefits of having a map include the ability to color code portions of the map to demark areas of potential recreation interest.

The content of the regional resident household mail survey will have overlap with the intercept survey. The following briefly outlines a few expected differences between the regional resident household mail survey content and the intercept survey, as well as consideration of overall survey length limitations and differing formatting requirements between a self-administered mail survey versus intercept or online methodologies.

- **Residence** - These questions are not necessary to ask in the mail survey. Residence data can be captured from the mailing list with the use of a control number.
- **Day/Overnight Use and Location** - Similar or the same questions as in the intercept survey, however, these questions may occur later in the survey flow than as seen in the intercept survey.
- **Recreational Activities/Guide Use in the Recreation Use Study Area** - This will be the first series of questioning in the mail survey. In addition to recreation use in the Recreation Use Study Area, respondents will be asked to provide estimates of their annual recreation days by activity anywhere in Alaska. Respondents who have visited the Recreation Use Study Area in the last 12 months will be asked to provide specific information on their most recent trip to that area.

- **Study Area Access** – Similar or same questions as in the intercept survey.
- **Quality of Experience** - Similar or same questions as in the intercept survey.
- **Recreation Facilities and Services** - Similar or same questions as in the intercept survey.
- **User conflict** – Similar or same questions as in the intercept survey.
- **Aesthetics** - Similar or same questions as in the intercept survey. However, additional questions on cultural identity, identity with place, dependence on place, social bonding with place, and expected aesthetics impacts of the Project will be considered.
- **Spending and Party Size** – Similar or same questions as in the intercept survey.
- **Demographics/Characteristics** - Similar or same questions as in the intercept survey.

Content coordination with other study discipline research

Because of the ability to collect broader survey questions with the mail survey format (as compared to an intercept survey), space may be available to add survey questions that provide data to support other research, such as spending, as needed for the socioeconomic study. Inclusion of these types of questions will require continued collaboration and cooperation with, as well as review, by other study team members (primarily socioeconomics).

Once the regional resident household mail survey is finalized, the online version will be developed using content identical to the regional resident household mail survey.

A final mail survey was reviewed and commented on by licensing participants and was included in the April 15, 2013 FERC filing of final survey instruments.

Executive Interviews

Executive interviews, conducted with representatives from a variety of organizations and businesses, are an important source of information from people with recreation use knowledge of the Recreation Use Study Area. Executive interviews are a systematic way (using an interview guide “protocol”) of collecting qualitative and quantitative data from individuals through structured or semi-structured conversations.

The purpose of the executive interviews is to gather specific information about how businesses, organizations, and individuals use the Recreation Use Study Area; the volume of recreation users, and their thoughts on the quality of recreation; as well as satisfaction with current facilities and potential recreation facility needs. The executive interview process introduces the Project to the interviewees and establishes a relationship that will be helpful if additional information is needed during the recreation demand analysis phase of the study. For recreation activities where the survey sample size from the mail, online, and intercept surveys is small, executive interviews with key individuals and organizations engaged in those activities will inform efforts to quantify use.

A structured executive interview protocol and preliminary interviewee contact list was developed. The protocol form is shown as Attachment 12-2. Interview topics include, but are not limited to, the following:

- Nature of business/service (e.g., guide, tour operator, accommodations, etc.)
- Season(s) of operation (e.g., year-round, summer, winter, hunting, etc.)

- Means of access to recreation activity site (e.g., fly-in, boat, road, etc.)
- Specific areas of operation within the Recreation Use Study Area
- Years of operation
- Estimated number of clients/members per year
- General information about clients/members, including origin, party size, demographic features
- Ways that use might change under the various operational alternatives identified and potential impacts on area image, fishing, hunting, and other recreation activities
- Past and current plans, programs, business operations, membership, activity, etc.
- Geographic areas of highest recreational interest (and reasons why)
- Recreation infrastructure used or needed
- Identification of any trends (anecdotal and data sources) in recreational use levels or patterns
- Information about other projects proposed in the Recreation Use Study Area that could directly or indirectly affect recreation, tourism, or access to the previously inaccessible areas
- Suggestions for prioritizing the highest potential recreation demand in the area
- Suggestions for additional interview candidates

A minimum of 50 interviews, largely conducted by telephone, will be conducted over the study period, beginning with a number already conducted in 2012.

A preliminary interviewee candidate list was developed through existing and referred contacts, internet searches, and interviews. The list includes, but is not limited to: sportfishing guides; hunting guides; commercial jet boat tour operators; commercial rafting operators; State and/or facility lessees (including campgrounds and boat launches); recreation organizations and clubs; Boy Scouts of America Great Alaska Council; commercial visitor accommodation providers; services and tour providers (such as dogsledding, biking tours, etc.); communities councils (such as the Talkeetna Community Council), Alaska Native entities; and local, borough, state, and federal government agencies. The preliminary interviewee candidate list may be augmented with additional interviewees suggested by licensing participants if it is determined that a group is not currently represented by the existing list, or that an individual may have unique experience or knowledge on recreation uses in the study area. Interviewees will also have an opportunity to suggest additional candidates for interview consideration.

Most of the executive interviews will be conducted during Q1 and Q2 2013; however, others are expected to be conducted throughout the course of the 2013 and 2014 study periods. Some interviews will be scheduled to avoid high season recreation conflicts (when many interview candidates are away from their offices or too busy to schedule an interview). Other disciplines (such as Socioeconomics, Recreational River Flow) will be conducting executive interview research. Efforts will be made to coordinate this research to avoid duplication of research effort and minimize the demands on the interview candidate's time and availability.

GIS Maps and Figures

Recreational sites, facilities, and access routes (RS 2477 rights-of-way, 17(b) easements, and other recreation use trails) have been and will continue to be identified and digitized in a GIS using existing agency and licensing participant datasets and aerial photography. Recreation features will be geo-referenced. Group interviews, discussions with licensing participants, coordination with other resource study disciplines, and user intercept surveys will augment recreation facilities and trails mapping. Recreation facilities, examples of dispersed use areas, and access points will be photographed for inclusion in the Initial Study Report and Updated Study Report.

Updating Study Plan in the Initial Study Report

The Initial Study Report will include any proposed modifications to the study plan based on the first year's data on the lower river uses, hydrology, and ice processes.

12.5.5. Consistency with Generally Accepted Scientific Practice

The methods and work efforts outlined in this Study Plan are the same or consistent with analyses used by applicants and licensees and relied upon by FERC in other hydroelectric licensing proceedings. The proposed methodology for analysis for demand and capacity estimates and survey sampling are commonly employed in the development of hydroelectric project License Applications.

12.5.6. Schedule

Upon approval for implementation, it is estimated that the term of the study would be approximately two years. In 2014 and 2015, licensing participants will have opportunities to review and comment on the study reports (Initial Study Report in early February 2014 and Updated Study Report in early 2015). Input from agencies to finalize study survey instruments will be sought in early 2013. Updates on the study progress will be provided during Technical Workgroup meetings which will be held quarterly in 2013 and 2014.

Table 12.5-1. Schedule for implementation of the Recreation Study.

Activity	2012				2013				2014				2015
	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q	1 Q
Data Collection & Baseline Inventory			—	—	—	—	—	—	-----	-----	-----		
Analysis						—	—	—	-----	-----			
Intercept Survey Design and Fielding					—	—	—	—	-----	-----			
Mail Survey Design and Fielding						—	—						
Executive Interview Research				—	—	—	—	—	—	—	—		
Survey Data Analysis						—	—	—	—	—	—		
Recreation Demand Analysis				—	—	—	—	—	—	—	—		
Initial Study Report								—	△				
Updated Study Report											—	—	▲

Legend:

- Planned Activity
- Follow up activity (as needed)
- △ Initial Study Report (February 2014)
- ▲ Updated Study Report (February 2015)

12.5.7. Relationship with Other Studies

Interdisciplinary coordination will be an essential component of the Recreation Resources Study, and will result in efficient collection and analyses of data common between studies for the Susitna-Watana Hydroelectric Project. Coordination will occur with Project engineering feasibility studies, and other biological, social, and physical resources on an iterative basis as data are collected. Coordination with biological resources will include Fish and Aquatics resources (Section 9.15) and Wildlife resources (Section 10.20). The Fish and Aquatics Resources Study will provide fish harvest data characterizing baseline harvest levels and harvest locations for commercial, sport, personal use, and subsistence fisheries for Susitna-origin-resident and anadromous fish (Q3 2013). These data will be used to understand the geographic distribution and abundance of and fisheries-based recreation opportunities within the Recreation Effects Analysis Area. The results of the impact analysis will be incorporated to understand potential changes in fisheries-based recreation opportunities that may result from changes in fisheries abundance and distribution (Q1 2015). The Wildlife Resources Study will provide baseline wildlife harvest data (Q1 2014, Q3 2014), and will be used to characterize existing conditions and anticipated impacts to game species abundance, hunting opportunities, and hunter distribution.

Coordination with social resources includes Socioeconomics and Transportation Resources (Section 15) to obtain data from the Social Conditions and Public Goods and Services study

(Section 15.6), including any anticipated post-Project changes to use, commercial opportunities related to recreational activities (e.g., fishing, hunting, sightseeing). Data inputs will focus on access, recreation and subsistence use values, quality of life, community use patterns, non-use environmental values, and social conditions of the area (Q1 2014). Additional data will be obtained from the Transportation Resources Study (Section 15.7) to assess current transportation conditions and assist in understanding access constraints to recreation use (Q3 2013; Q1 2014).

Coordination with physical / biophysical resources includes Instream Flow (Section 8), Hydrology-Related Resources (including Ice Processes) (Section 7.0), and Geomorphology (Section 6.0). The Fish and Aquatics Instream Flow Study (Section 8.5) will provide hydraulic routing model data to estimate water surface elevations and average water velocity under alternative operational scenarios. This information will provide data on potential changes in channel, sandbar and floodplain formation that may result from operation of the proposed project, and will be used to assess potential changes in recreation access and use (Q4 2014). Because these data are not projected to be available until Q4 2014, they will be used to refine the recreation resources impact analysis, and provide added detail that will be used in the formation of a Recreation Management Plan.

The Hydrology-Related Resources study will inform our understanding of potential changes in the hydrologic regime, including water timing, quantity, and quality (Section 7.0). Data will be used to understand aquatic reservoir conditions and potential water-dependent recreation uses, and will inform eventual development of a Recreation Management Plan. The Ice Processes in the Susitna River component of this study (Section 7.6) will provide information about expected changes in the type, distribution, and seasonality of ice cover on the Susitna River, downriver of the proposed dam (Q4 2013). These data will inform the impact assessment for winter recreation, including the more specific focus on ice dependent river recreation (Section 12.7.4). Results from the ice processes modeling will also be used to determine the longitudinal extent of downriver impacts to winter recreation, and inform the decision of whether to expand winter recreation studies downriver of the Parks Highway Bridge (Q1 2014).

The recreation use surveys (intercept and mail) will provide for multi-use data collection to support other studies, such as the Social Conditions and Public Goods and Services Study (Section 15.6.4.1). As an example of the interdisciplinary coordination, some space will be reserved in the Regional Residents Household Mail survey to include questions to gather recreational spending data as an input to the REMI modeling being conducted for the Regional Economic Evaluation Study (Section 15.5.4.1). Inclusion of these types of questions will require on-going collaboration and cooperation with, as well as review by, other study team members to identify and refine data collection to efficiently meet multiple needs. Anticipated coordination actions and outcomes are graphically depicted in Figure 12.5-3.

12.5.8. Level of Effort and Cost

The estimated cost of the two-year Recreation Resource Study is \$1.6 million. Included in this total is the cost of the survey effort and demand analysis estimated at \$935,000.

12.5.9. Literature Cited

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12.5.10. Figures

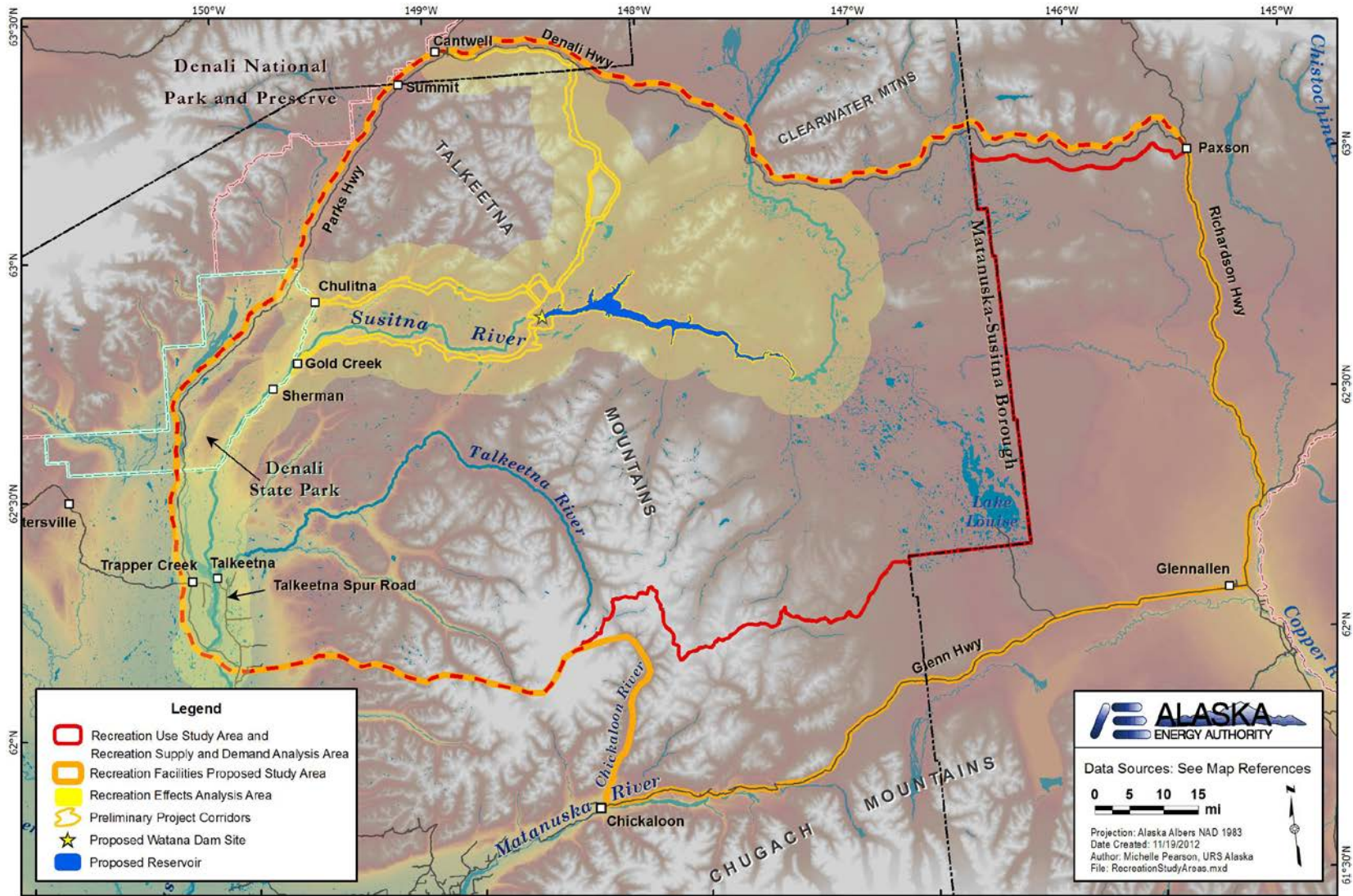


Figure 12.5-1 Recreation Resources Study Area.

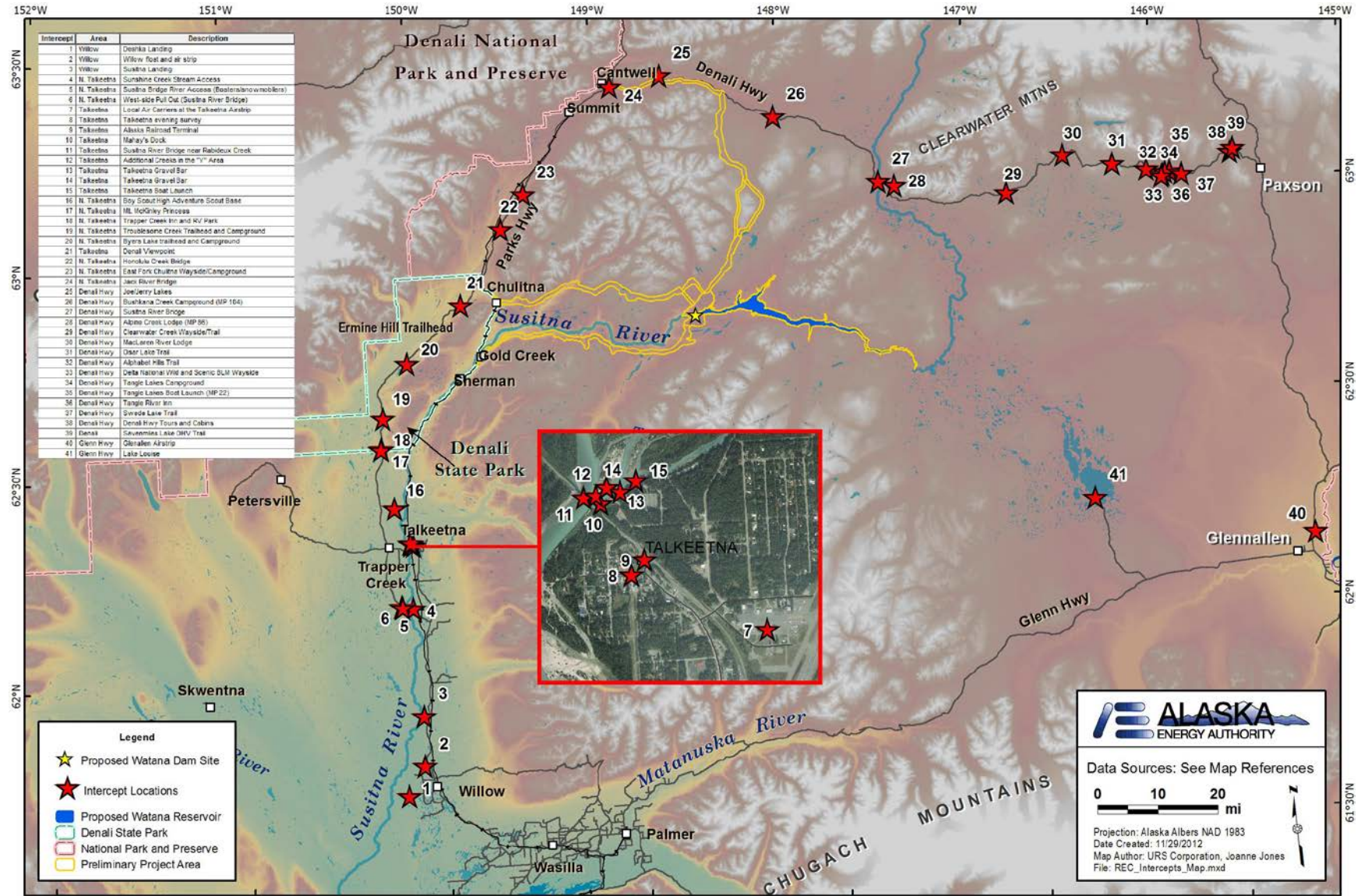


Figure 12.5-2 Survey Intercept Locations.

STUDY INTERDEPENDENCIES FOR RECREATION

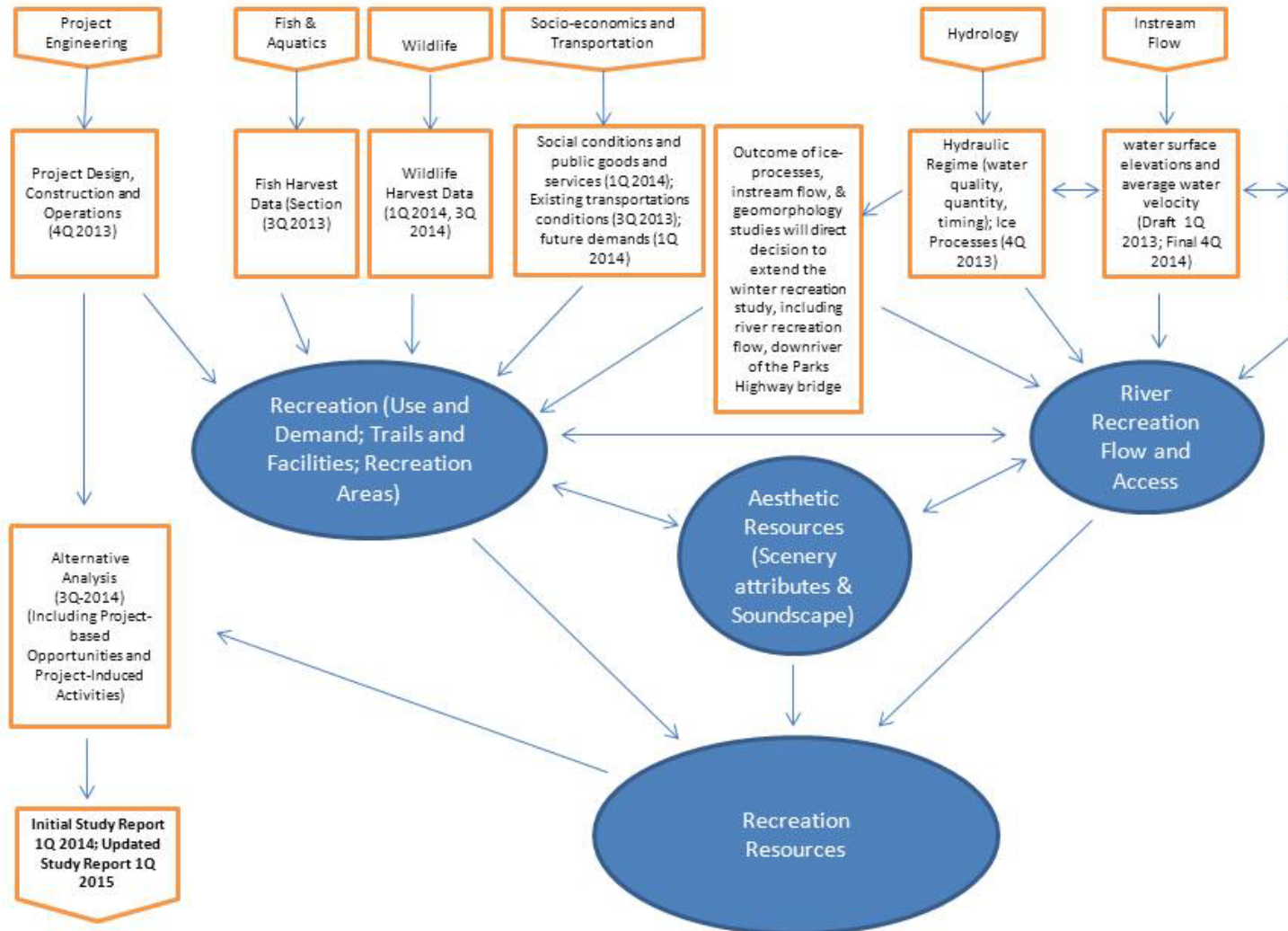


Figure 12.5-3 Study interdependencies for recreation.

**ATTACHMENT 12-1
INCIDENTAL OBSERVATION FORM**

Incidental Observation Form

Susitna-Watana Hydroelectric Project Recreation Resources Incidental Observation Survey

This important survey is designed to capture observed recreation use in the Susitna-Watana study area and should be completed by all crews while they are conducting their field research. To avoid duplication, only one survey needs to be completed for each observed activity by a designated field crew member.

Observer Name: _____ Observer Firm: _____
 Observer Telephone: _____ Observer Email: _____

For each observed activity, please indicate the following: date (mm/dd/yy), time, location (GPS coordinates/place name/general description of location), the activity number, and number of people in the party.

In addition to the written description of the location below, please indicate the approximate location with an "X" on the reverse side of this survey along with the Observation Number.

Activity Numbers:

- | | | |
|-----------------------------|----------------------|---------------------|
| 1 Berry picking | 6 Canoeing | 11 Jet boating |
| 2 Bicycling | 7 Kayaking | 12 Float plane |
| 3 Camping | 8 Pack rafting | 13 Hiking |
| 4 Dogsledding | 9 Rafting | 14 Horseback riding |
| 5 Four-wheeling/off-roading | 10 Propeller boating | 15 Hunting |
| | | 16 Skiing |
| | | 17 Snow-machining |
| | | 18 Sport fishing |
| | | 19 Other: (specify) |

Observation No.	Date (mm/dd/yy)	Time	Location (GPS/Place Name/General Description)	Activity (enter #)	# People	Additional Notes
1	/ /	Am / Pm				
2	/ /	Am / Pm				
3	/ /	Am / Pm				
4	/ /	Am / Pm				
5	/ /	Am / Pm				
6	/ /	Am / Pm				
7	/ /	Am / Pm				
8	/ /	Am / Pm				
9	/ /	Am / Pm				
10	/ /	Am / Pm				

If there are any questions, please contact: Donna Logan, McDowell Group, 907.274.3222.
 THANK YOU FOR YOUR HELP!

Please return this survey through the most convenient method:
 Mail: McDowell Group 1400 W. Benson Blvd., Suite 300 Anchorage, AK 99503
 Fax: 907.274.3201 Scan and E-mail: donna@mcdownellgroup.net

**ATTACHMENT 12-2
RECREATION EXECUTIVE INTERVIEW PROTOCOL (DRAFT)**

Susitna-Watana Hydroelectric Project Recreation Executive Interview Protocol (DRAFT)

(revised DRAFT 10/26/2012)

Introduction:

Hi I'm _____, with McDowell Group, a research firm located in [Anchorage/Juneau].

We are working for the Alaska Energy Authority on the Watana-Susitna Hydroelectric Project studying recreation resources in the Susitna River area. We are contacting businesses, organizations, and individual users to get a better sense of the recreational use of the area and we would like to conduct an interview with you. Is now a good time or can I schedule a time that is more convenient?

Before we start I would like to read you a brief description of the project.

The proposed Susitna-Watana Hydroelectric project would be located on the Susitna River roughly 90-river miles north of Talkeetna and approximately 34 miles upstream of the Devils Canyon rapids. As currently envisioned, the Project would include a roughly 750-foot tall dam with a 41-miles long, 2-miles wide (at widest) reservoir. Susitna-Watana Hydro includes a single dam, located below Watana Creek. Preliminary studies have indicated the surface powerhouse should have three generating units with an installed capacity of 600 megawatts of renewable energy. The powerhouse, dam, and related facilities would be linked by a transmission line (or lines) connecting to the Railbelt Intertie

[If more information is needed, refer to: <http://www.susitna-watanahydro.org/project/project-description/>]

Next, I want to describe the area we are interested in learning about recreation opportunities and uses. We are studying the recreational use and attributes of the Susitna River area from the confluence of the Talkeetna and Chulitna rivers to the Denali Highway river crossing. We are interested in recreation information for the lands and waters south of the Denali Highway from Cantwell to Paxson. Also we are interested in the area from access points along the east side of the Parks Highway, along the west side of the Richardson Highway, and from the north side of the Glenn Highway, including access from the Lake Louise area. Are you familiar with this area?

- 1) First of all, can you please describe your business/organization/agency?
 - a. Areas of operation
 - b. Years in business
 - c. Services/tours provided

- d. Membership
 - e. Other information
- 2) Does your [organization/business/agency] have any [knowledge/or use] of the described study area?
Can you please provide me with some background on this?
 - a. Type of use
 - b. Time of year used
 - c. Level of use (ex. heavy, light, etc.) –[look for hard numbers]
 - d. Client/membership base – Anchorage? Fairbanks? Nonresidents? Local area residents?
 - e. Any other information?
 - 3) Are you noticing any trends in recreational use of the area? Seasonal changes? Is use and interest growing? Lessening? About the same? Is the mix of recreational use changing?
 - 4) Would you consider this area a unique setting for recreation use in Alaska? Why or why not? What, if any, other areas with similar features to the upper Susitna River valley do you use for recreational outings? [*prompt*, if necessary, like the Talkeetna River for fishing or boating; or Hatcher Pass for snowmachining]
 - 5) How do [you/your members/business/agency] access the area?
 - 6) Is current access sufficient? If not, what might help improve this access?
Would you prefer access not be improved? [If yes] Why?
 - 7) Are there any other recreational infrastructure needs in the area, such as campgrounds, boat launches, day use facilities, etc. that you think might be helpful to [the general public/your business/your organization/your agency]?
 - 8) Are there any other issues regarding recreational use or access of the area that we should be aware of?
 - 9) Are there any specific people that you think it would be important for us to include in our interview research?
- *Depending on contact, will explain our 2013 survey work and needs (contacts, clients, intercept access/permission)

We really appreciate the time you gave us. We might have some follow-up questions. Would it be okay if we contacted you again?

Thank you.