

ALASKA LNG PROJECT	DOCKET No. CP17-____-000 RESOURCE REPORT No. 5 APPENDIX E – PROPOSED SUBSISTENCE IMPACT ANALYSIS APPROACH	Doc No: USAI-PE-SRREG-00- 000005-000 DATE: APRIL 14, 2017 REVISION: 0
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**APPENDIX E PROPOSED SUBSISTENCE IMPACT ANALYSIS
APPROACH**



Alaska LNG Project
3201 C Street, Suite 506
Anchorage, AK 99503

Ref No.: USAI-PE-SGEIS-00-000032-000

February 19, 2016

James Martin, Branch Chief
Federal Energy Regulatory Commission
888 First St. NE
Washington, D.C. 20426

Re: Federal Energy Regulatory Commission (FERC) Information Request

Dear Mr. Martin:

The Alaska Gasline Development Corporation, BP Alaska LNG LLC, ConocoPhillips Alaska LNG Company, ExxonMobil Alaska LNG LLC, and TransCanada Alaska Midstream LLP (a wholly-owned affiliate of AGDC, and with AGDC, collectively referred to herein as "AGDC") (Applicants) plan to construct one integrated liquefied natural gas (LNG) Project (Project)¹ with interdependent facilities for the purpose of liquefying supplies of natural gas from Alaska, in particular from the Point Thomson Unit (PTU) and Prudhoe Bay Unit (PBU) production fields on the Alaska North Slope (North Slope), for export in foreign commerce and opportunities for in-state deliveries of natural gas.

Attached is a partial response to FERC's May 15, 2015 request to the Project for information prior to submittal of the Draft 2 Resource Reports. Specifically this letter addresses comment #32 in relation to Resource Report No. 5. Please refer to Table 1 for the Project's response to this comment.

¹ The Natural Gas Act (NGA), 15 U.S.C. §717a(11) (2006), and FERC regulations, 18 C.F.R. §153.2(d) (2014), define "LNG terminal" to include "all natural gas facilities located onshore or in State waters that are used to receive, unload, load, store, transport, gasify, liquefy, or process natural gas that is exported to a foreign country from the United States." With respect to this Project, the "LNG terminal" includes the following: a liquefaction facility (Liquefaction Facility) in Southcentral Alaska; an approximately 800-mile, large diameter gas pipeline (Mainline); a gas treatment plant (GTP) on the North Slope; a gas transmission line connecting the GTP to the PTU gas production facility (PTU Gas Transmission Line or PTTL); and a gas transmission line connecting the GTP to the PBU gas production facility (PBU Gas Transmission Line or PBTL). All of these facilities are essential to export natural gas in foreign commerce.

Table 1. FERC Comment and Project Response

FERC Comment	Project Response
<p>1. Include a summary of how Alaska LNG's subsistence analysis meets the general and specific requirements in the FERC's February 17, 2011 "Guidance on Subsistence Data Requirements." Adherence to the FERC's general and specific requirements would ensure that the data collected by Alaska LNG accurately reflect current subsistence participation levels, status of resources to subsistence users, and intensity of subsistence use. These data will be important to understand direct and indirect effects on subsistence user costs and risks (health, cultural, etc.) associated with availability of wild resources.</p>	<p>Attachment 1: Summary of Subsistence Analysis Requirements</p> <p>Attachment 2: Proposed Subsistence Impact Analysis Approach</p>

Please note that this information is still in draft and may be refined as the Project continues to progress planning and design, including stakeholder feedback, in support of Resource Report development.

We are available to discuss the contents of this attachment with the FERC team, if you wish. If you have any questions or additional information requests, please contact me at 907.929.4124 or by email at karen.wuestenfeld@exxonmobil.com.

Sincerely,

Karen Wuestenfeld
On behalf of Applicants

Enclosures:

Attachment 1: Summary of Subsistence Analysis Requirements
Attachment 2: Proposed Subsistence Impact Analysis Approach


cc: Jennifer Lee/ERM (with attachments)



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**ATTACHMENT 1:
SUMMARY OF SUBSISTENCE ANALYSIS
REQUIREMENTS**

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1.0 INTRODUCTION

In late 2013, the Project entity contracted Stephen R. Braund & Associates (SRB&A) and the Alaska Department of Fish and Game (ADF&G) Division of Subsistence to compile subsistence and traditional knowledge baseline data, identify data gaps, and analyze potential project impacts to subsistence. This document provides responses as to how the Alaska LNG Project (Project) entity will address FERC's general and specific subsistence analysis requirements.

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2.0 FERC'S GENERAL REQUIREMENTS FOR SUBSISTENCE ² ANALYSIS

The Project's approach for incorporating FERC Guidance on the analysis of direct and indirect impacts to subsistence resources and users is described below. The FERC Guidance and Project response follows the order in which the guidance appears within the enclosure to the February 17, 2011 letter to the Alaska Pipeline Project (APP).

1. *Describe the affected environment (baseline conditions) for both subsistence resources and users.*

Based on existing subsistence harvest and use data as well as available literature (described in further detail below), Draft 1 of Resource Report No. 5 and the accompanying Appendix D, *Existing Compilation*, described the affected environment (baseline conditions) for subsistence users. SRB&A and the ADF&G are in the process of gathering updated subsistence information on behalf of the Project team to address identified data gaps. This information, in addition to ADF&G technical papers, SRB&A stand-alone community appendices and local resident observations on resource abundance/availability, habitat, migration/distribution and health will be provided in Draft 2 and the final submission of Resource Report No. 5. The biological resources upon which subsistence hunters rely will be described in Resource Report No. 3.


2. *Define baseline conditions using data that is no more than three years old or provide justification for why the use of certain older data is still valid and accurate. Data more than three years old often do not reflect current factors such as levels of participation, specific resources used and levels of use, current status of resources, exchange systems, and harvest patterns.*

The Project entity will use existing baseline data collected by ADF&G and studies by others, supplemented with recent Project-collected harvest information and mapping, and ADF&G household harvest studies.

In some cases, use of data older than three years may be necessary and can serve as a valuable source of information. Data more than three years old is still valid for smaller communities that do not have frequent subsistence harvest mapping updates performed by ADF&G. Systematic documentation of subsistence uses in Alaska began in the 1980s, and for many communities, studies from that time period are the only subsistence data available. These older data remain valid because they:

- May be the only available harvest data for a community;
- Adequately describe general subsistence patterns in a community (e.g., resources harvested, primary species);

² As noted in FERC's February 17, 2011 Guidance on Subsistence Data Requirements, the term "subsistence" is defined as the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption. This definition is similar to Alaska statute AS 16.05.940(33) where subsistence uses "means the noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state...."

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- Provide important social and cultural context for communities, including traditional use areas, key species, harvest levels, sharing patterns, and cultural identity, which are continuing and relevant to the present; and
- Allow for the documentation of changes, trends, and anomalous years when compared to more recent data.

Providing historic data as part of the overall description of subsistence uses is necessary to address both similarities and changes over time. In addition to more recent data, long-term subsistence mapping studies are being used for communities that did not have long-term mapping collected within the last 10 years. This 10-year recommendation allows for non-overlap of subsistence use areas during their time period of data collection (e.g., 1994-2003; 2004-2013). It also allows for more direct comparisons and assessments of change without the potential confusion of each study documenting the same use areas (and associated variables) for a given year if a shorter than 10-year period was followed. Therefore, the justification to use data older than three years in regards to long-term mapping (i.e., 10-year time period) studies is as follows:


- Long-term mapping studies can account for annual variation that one-year household harvest surveys do not, and therefore, the data associated with long-term mapping studies are considered current beyond the three-year time period; and
- The time period of data collection for long-term mapping studies allows for direct comparisons between long-term mapping data sets and assessment of changes. Repeating a 10-year mapping study after three years would result in overlapping time periods and complicate direct comparisons.

Additionally, there can be a lag between data collection and availability for use by the Project. It can take over one year for the data to be collected, synthesized and made available to the Project. For instance, some surveys that started in 2014 will continue through the spring of 2016, thus the report will not be available until late 2016.

3. *Identify the expected impacts on subsistence resources and users as a result of construction and operation of the project.*

Draft 1 of Resource Report No. 5, Appendix D, Section 5.0 provides a general overview of the types of impacts (direct and indirect) on subsistence uses that could result from construction and operation of the Project. Additionally, the Project team has developed a draft impact assessment methodology approach for consideration by the FERC included in Attachment 2.

For study communities conducting subsistence activities, the Project will identify the types of potential impacts, and evaluate the identified impacts based on baseline indicators and an assessment of impacts to subsistence areas, user access, resource availability and community participation.

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4. *Discuss measures the applicant proposes that will avoid or minimize adverse effects of the project on subsistence resources and users.*

Specific mitigation measures are contingent on site-specific subsistence impacts analyses and cannot be developed until completion of baseline studies and impacts analyses that would determine the character, nature, extent and duration of impacts to subsistence from Project construction, operations, and maintenance. In Alaska, oil and gas development uses best management practices (BMPs) that are discussed and implemented after consultation with affected subsistence users, ADF&G, and federal regulators as appropriate. Such measures typically include, but are not limited to:


- Where feasible, constructing project components during the season (winter or summer) that would have the least impact to subsistence users and targeted resources;
- Incorporating design features of project components and facilities to minimize potential disruptions to wildlife and other resources important to subsistence users;
- Ensuring continued access to and across project ROW and footprint by subsistence users; ongoing coordination with subsistence communities during times of peak harvest; and
- Restricting Project personnel from competing with subsistence users for harvesting wildlife or other important subsistence resources.

5. *Identify all of the affected communities that could experience project-related impacts, either direct or indirect, on their subsistence use activities, including incorporated places, census designated places, and non-subsistence areas.*

SRB&A conducted an analysis of available use area data, harvest data, and geographic data (i.e., proximity of communities to the Project) to identify the communities (including incorporated places, census designated places, and non-subsistence areas) that could experience direct or indirect project-related impacts. In accordance with FERC's February 17, 2011 guidance, as well as ADF&G study community selection criteria (e.g., communities within 50 miles) for household harvest surveys, the following criteria were used to identify study communities within the subsistence affected environment:

- Any community located within 50 miles of the proposed pipeline corridor (including the transmission pipeline starting at Point Thomson), or
- Any community located more than 50 miles from the proposed pipeline corridor, but with subsistence use areas within 30 miles of the proposed pipeline corridor.

The community selection criteria and subsequent list of communities is provided in Draft 1 Resource Report No. 5, Appendix D, Section 2.1, with the communities list found in Appendix D Table 2-1.

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6. *Identify subsistence use areas within 30 miles of the proposed project area³ and any subsistence users who use subsistence resources within this study corridor but are not associated with communities identified in item #5.*

Community selection criteria, as related above and provided in Draft 1 Resource Report No. 5, Appendix D, Section 2.1, includes communities located more than 50 miles from the proposed pipeline corridor, but with subsistence use areas within 30 miles of the Project corridor. Per the February 17, 2011 FERC Guidance for the Subsistence Analysis, the ‘project area’ refers to the pipeline centerline and the centers of major aboveground facilities such as compressor stations, work camps, borrow areas, pipe yards, access roads, etc., when such are distant from the centerline. To identify subsistence use areas within 30 miles of the proposed project area, the Project team used SRB&A’s current database of subsistence use areas from various sources (e.g., ADF&G, North Slope Borough, SRB&A) and time periods and digitized any other use area data that were available but not part of SRB&A’s use area database.

To identify subsistence users who are not associated with the identified communities but who use the area, SRB&A analyzed ADF&G’s harvest ticket data for all available resources in Game Management Units that intersect with the project area. Further results of available, existing data identifying such subsistence users are provided in Draft 1 Resource Report No. 5, Appendix D. Data sources which provided this information are detailed in Draft 1 Resource Report No. 5 Appendix D, Section 2.4. Further updated information will be provided in Draft 2 of Resource Report No. 5.


7. *Provide population data for animal resources in the subsistence use areas, e.g., numbers, locations, and migration patterns. Include those subsistence resources not managed by either the State of Alaska or the Federal Subsistence Board (migratory birds, marine mammals, etc.). Also, incorporate data on individual resources from large game counts, commercial fishing harvests, sport hunting and fishing, etc.*

Biological resources will be presented in Resource Report No. 3. SRB&A compiled available information from ADF&G’s wildlife harvest ticket database for land mammal harvests and the Alaska Subsistence Fisheries database for fish harvests; many of these harvests qualify as subsistence activities according to the State of Alaska depending on the area. The forthcoming Draft 2 and final Resource Report No.5 will include local resident observations on resource abundance/availability, habitat, migration/distribution and health.

8. *Include a map of an appropriate scale to depict all of the communities whose subsistence activities could be affected by the project. The map should also show the proposed and alternative pipeline routes, compressor stations, work camps, borrow areas, pipe yards, access roads, and the subsistence use areas. The subsistence use areas (the areas used by each community to seek subsistence resources) should be portrayed as polygons.*

An overview map of all study communities that were identified in General Requirement 5 above was provided in Draft 1 of Resource Report No. 5 Appendix D, Section 2.1, Figure 2-1. This map included infrastructure for the then-available Project description and included pipeline corridor, GTP and LNG areas. Draft 1 of Resource Report No. 5 Appendix D also included individual maps of subsistence use areas by study community (see Specific Requirement 1[c] below) where the data were available. These maps will be updated to include the proposed and


³ Reference to guidance provided by FERC to the Alaska Pipeline Project

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alternative pipeline routes, compressor stations, work camps, borrow areas, pipe yards, and access roads that will be the basis of Draft 2 of the Resource Reports.

9. *Provide citations for data sources used to prepare the analysis, including agency and community contacts. For communications with agencies and individuals, include the name and title of the person, their affiliation, e-mail address, and telephone number.*

Draft 1 of Resource Report No. 5, Appendix D provided citations for all sources of data used in the analysis including, where appropriate, personal communications. See Draft 1 Resource Report No. 5, Appendix D, Section 6.0. Detailed review of the data sources is found in Draft 1 Resource Report No. 5, Appendix D, Sections 2.3, 2.4, and 2.5. The citation information required above will be further updated as needed and incorporated in the Draft 2 submission of Resource Report No. 5, Appendix D.

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3.0 SPECIFIC REQUIREMENTS FOR SUBSISTENCE ANALYSIS

1. For each affected community (see item #5 above), provide:

a. detailed harvest data, including harvest volumes of individual resources and the locations of harvests by geographical area, including uniform coding unit;

Existing detailed harvest data for potentially affected communities was provided in Draft 1 Resource Report No. 5, Appendix D, Sections 3.1.3, 3.2.3, 3.3.3, 3.4.3, 3.5.3, 3.6.3, 3.7.3, and Appendix 7.0 (A). Updated subsistence mapping studies are currently being conducted for the Project and will be presented in Draft 2 of Resource Report No. 5.

The Project team gathered information from ADF&G's Community Subsistence Information System (CSIS) (for harvest amount and use data), available North Slope Borough reports (for harvest data), ADF&G technical or other reports (for additional harvest amount, harvest location, and use data), and other subsistence literature, and ADF&G's wildlife harvest ticket database (for location of harvests by geographical area, including uniform coding unit, for available resources) to provide the information required above in Appendix D of Draft 1 Resource Report No. 5. The Project team also investigated the availability of harvest data for migratory birds, fish, and other resources from other state and federal agencies.

ADF&G is further updating household harvest information based upon the results of their data gap recommendations. These associated community reports will be provided in the Final Application or as a supplemental filing.


b. a description of spatial and temporal trends in subsistence resource use;

Available existing data related to spatial and temporal trends in subsistence resource use were provided in Draft 1 Resource Report No. 5, Appendix D, Sections 3.1.3, 3.1.4, 3.2.3, 3.2.4, 3.3.3, 3.3.4, 3.4.3, 3.4.4, 3.5.3, 3.5.4, 3.6.3, 3.6.4, 3.7.3, 3.7.4, and Appendix 7.0 (A).

Resource Report No. 5, Appendix D, to the extent the data were available, provided tables comparing harvest data over time, maps of use areas distinguishing between time periods, figures depicting the timing of subsistence activities over time, and provided a brief discussion of any notable changes in these topics.

Work is ongoing to update subsistence mapping and household harvest information based upon the results of data gap recommendations provided by SRB&A and ADF&G. The information collected as part of ongoing fieldwork will further contribute to understanding spatial and temporal trends in subsistence resource use in Draft 2 Resource Report No. 5

c. a map showing, as polygons, the localities where residents seek the different types of subsistence resources in relationship to the project corridor. The maps should contain a level of detail consistent with maps presented in selected Alaska Department of Fish & Game Technical Papers (available at <http://www.subsistence.adfg.state.ak.us/geninfo/pub1ctns/techpap.cfm>).

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Over 350 maps derived from existing available data showing subsistence use areas, by resource, by study community were provided in Draft 1 Resource Report No. 5, Appendix D, Sections 3.1.3, 3.2.3, 3.3.3, 3.4.3, 3.5.3, 3.6.3, 3.7.3, and Appendix 7.0 (A).

Resource Report No. 5, Appendix D, to the extent that the data were available, included over 350 individual maps of subsistence use areas, by resource, by study community. The report also leveraged SRB&A's current database of subsistence use areas from various sources (e.g., ADF&G, North Slope Borough, SRB&A) and time periods and digitized any other use area data that were available but not part of SRB&A's use area database. The maps included use areas derived from ADF&G technical papers as well as other available use area data.

Work is ongoing to update subsistence use area information based upon the results of data gap recommendations provided by SRB&A and ADF&G. The information collected as part of ongoing fieldwork will provide long-term time frame use areas (from SRB&A interviews) and one-year time frame use areas (from ADF&G surveys).

d. demographic information;

A basic demographic overview of each study community, including population, ethnicity, and income based on information from the 2010 U.S. Census or the Alaska Department of Labor and Workforce Development was provided in Draft 1 Resource Report No. 5, Appendix D Sections 3.1.1, 3.2.1, 3.3.1, 3.4.1, 3.5.1 and 3.6.1 . This information will be updated as needed for Draft 2 of Resource Report No. 5.


e. community subsistence profile data;

As discussed under Specific Requirement a, a compilation of available subsistence harvest, timing, and use data for each of the study communities was provided in Appendix D of Draft 1 Resource Report No. 5, Sections 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 and Appendix 7.0 (A). A general description of subsistence resource uses by community based on the available literature was also provided in Draft 1 of Resource Report No. 5 in the same sections. This information will be updated as needed for Draft 2 of Resource Report No. 5.

f. estimates of the levels of subsistence activities pursued, the percentage of households in the community participating in subsistence uses, and the average household ratio of cash employment and subsistence use; and


As discussed under Specific Requirement a, for Resource Report No. 5, Appendix D, available subsistence harvest and use data, which included the percentage of households participating in subsistence activities, using subsistence resources, and sharing subsistence resources was provided in Draft 1 Resource Report No. 5 Appendix D, Sections 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 and Appendix 7.0 (A). This information will be updated in the ADF&G ongoing household surveys.


In regards to the availability of data showing average household ratio of cash employment and subsistence use, both the harvest data and income data are currently being gathered by ADF&G. The Project team is currently evaluating options for estimating the average household ratio of cash employment and subsistence use.

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g. a description of subsistence use patterns and trends derived from traditional knowledge.

A discussion of the role of traditional knowledge in identifying subsistence use patterns and trends as well as the importance of traditional knowledge in guiding subsistence activities was included in as a part of Draft 1 Resource Report No. 5, Appendix D, Sections 4.1, 4.2, and 5.0. Additional discussion around traditional knowledge with respect to the requirement above will be provided in subsequent drafts of Resource Report No. 5. This updated information will be based on traditional knowledge workshops regarding physical, biological, and social topics in addition to traditional knowledge gathered during long-term subsistence mapping interviews on topics such as subsistence use areas, timing of subsistence activities, and resource status observations.

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Alaska LNG

ATTACHMENT 2:

PROPOSED SUBSISTENCE IMPACT APPROACH


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1.0 INTRODUCTION

The Project entity has prepared the following proposed subsistence impact approach to be used in preparing the subsistence impact section of Resource Report No. 5. This proposed approach is organized as follows:

1. Identify Study Communities
2. Compile Existing Data and Conduct Data Gap Analysis
3. Develop Criteria for Updated Studies
4. Impact Analysis
 - A. Identify Potential Impact Categories and Sources
 - B. Differentiate Subsistence Impacts on Both State and Federal Land
 - C. Identify Key Subsistence Resources by Measures of Material and Cultural Importance
 - D. Analyze Potential Impacts of the Project on Subsistence Uses
 - E. Apply Impact Criteria

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2.0 IDENTIFY STUDY COMMUNITIES

The Project study team conducted an analysis of available use area data, harvest data, and geographic data (i.e., proximity of communities to the Project) to identify the communities (including incorporated places, census designated places, and non-subsistence areas) that could experience direct or indirect project-related impacts. In accordance with the Federal Energy Regulatory Commission (FERC) February 17, 2011 guidance provided to the APP, as well as Alaska Department of Fish and Game (ADF&G) study community selection criteria (e.g., communities within 50 miles) for household harvest surveys, the following criteria were used to identify study communities within the subsistence⁴ affected environment:

- Any community located within 50 miles of the proposed pipeline route, or
- Any community located more than 50 miles from the proposed pipeline route, but with subsistence use areas within 30 miles of the proposed pipeline route.

These community selection criteria are explained in detail in SRB&A's data gap memo (SRB&A 2014). In summary, 62 study communities were identified that represent 94 U.S. Census areas (e.g., city, municipality, or CDP) located along the proposed corridor.

⁴ As used in the FERC Guidance, the term "subsistence" means the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption.


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3.0 COMPILE EXISTING DATA AND CONDUCT DATA GAP ANALYSIS

In November 2013, the Project entity subcontracted SRB&A to conduct a subsistence and traditional knowledge data gap analysis related to communities potentially affected by the proposed Project. As part of a data gap analysis, SRB&A inventoried available subsistence and traditional knowledge information for potentially affected study communities. SRB&A completed their subsistence and traditional knowledge data gap report (SRB&A 2014) and submitted final recommendations to the Project on May 28, 2014. Final recommendations included: (1) long-term subsistence mapping studies, (2) household harvest surveys, and (3) traditional knowledge workshops. These recommendations were based on a systematic review of existing data to address key subsistence baseline indicators as well as study-specific criteria based on previous guidance from FERC, ADF&G, and APP.

Existing subsistence and traditional knowledge information is summarized in Appendix D to Resource Report No. 5 submitted to FERC in February 2015. The reader is referred to Appendix D of Draft 1 Resource Report No. 5 for information on the following:

- Definition of Subsistence;
- Definition of Study Communities;
- Identification of Subsistence Baseline Indicators;
- Methods for Compilation of Existing Data;
- Subsistence Data Compilation for Seven Study Regions;
 - Regional Overviews
 - Subsistence Use Areas
 - Harvest Data
 - Timing of Subsistence Activities
- Traditional Knowledge Compilation for Seven Study Regions; and
- Potential Impacts of Proposed Project.

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4.0 DEVELOP CRITERIA FOR UPDATED STUDIES


SRB&A developed the following study specific criteria to address identified data gaps. These criteria are as follows:

1. Long-term Subsistence Mapping Criteria
 - Community located outside of federally designated non-rural areas and/or communities that border or are located outside of state designated non-subsistence areas (i.e., communities in rural areas); and
 - Community within 50 miles of proposed route; and
 - Long-term subsistence mapping data older than 10 years.

2. Traditional Knowledge Workshop Criteria
 - At least 50 percent of the community is Alaska Native; or
 - A federally recognized tribe is affiliated with the community; and
 - The community is within 50 miles of the pipeline route; or
 - The community's documented subsistence use areas overlap with the pipeline route.

3. Household Harvest Survey Criteria
 - Located outside of federally designated non-rural areas and/or communities that border or are located outside of state designated non-subsistence areas (i.e., communities in rural areas); and
 - Harvest data older than three years.

For all remaining study communities that did not meet criteria for updated studies, SRB&A will rely on existing data (e.g., previously documented subsistence use areas and household harvest surveys, ADF&G wildlife harvest ticket database, Alaska Subsistence Fisheries Database) to identify communities and their subsistence users that may be potentially impacted by the Project.

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5.0 IMPACT ANALYSIS

5.1 IDENTIFY POTENTIAL IMPACT CATEGORIES AND SOURCES

This proposed approach organizes potential subsistence impacts from the Project around six primary subsistence impact categories that could be directly or indirectly affected by Project activities. These subsistence impact categories include the following:

1. Subsistence Use Areas
2. User Access to Subsistence Areas (User Access)
3. Resource Availability (note: this category will rely in part upon analyses in Resource Report No. 3 as to potential impacts to specific subsistence resources)
4. Harvest Competition for Subsistence Resources (Competition)
5. Costs and Time Associated with Subsistence Activities (Costs and Time)
6. Importance to Culture and Identity of a Community (Culture)

The impact analysis will identify potential impact sources that could affect the subsistence impact categories listed above during construction and operation. A final list of impact sources will be developed as the Project description is finalized. Examples of sources could include:

1. Project Infrastructure
2. Noise/Traffic
3. Contamination (Real or Perceived)
4. Hunting/Security Policies

5.2 DIFFERENTIATE SUBSISTENCE IMPACTS ON BOTH STATE AND FEDERAL LAND

The study team will apply the following approach when discussing potential impacts to subsistence users on state and federal lands:

- The Project entity will not address any potential impacts to resource uses that occur within state designated non-subsistence areas as those uses are regulated under general hunting and personal use, sport, guided sport, and commercial fishing regulations. A non-subsistence area is defined in 5 AAC 99.016 as “an area or community where dependence upon subsistence is not a principal characteristic of the economy, culture, and way of life of the area or community.”
- The Project entity will not address any potential impacts to resource uses that occur within federal lands by federally designated non-rural communities because non-rural residents do not qualify for subsistence harvesting on federal lands under federal subsistence regulations (36 CFR §242).

5.3 IDENTIFY KEY SUBSISTENCE RESOURCES BY MEASURES OF MATERIAL AND CULTURAL IMPORTANCE

The study team will establish measures of material and cultural importance for each subsistence resource by study community to inform the magnitude of potential impacts

(see Section 5.5). By understanding the relative importance of each subsistence resource, the study team can better analyze which subsistence resources and activities would be most vulnerable to impacts from the proposed Project. Measures of material and cultural importance are established through the use of available quantitative measures. While all subsistence activities and resources are of high importance to a community, the importance of individual resources relative to one another varies according to material and cultural measures. The ADF&G Division of Subsistence and SRB&A’s subsistence studies have collected community harvest and use data in Alaska since the 1980s. These data allow for the quantitative measurement of certain aspects of cultural and material importance of subsistence resources used in this analysis (Table 1).

In this analysis, material importance will be quantitatively measured in terms of a resource’s contribution toward each community’s total subsistence harvest (i.e., edible pounds for each resource divided by the total edible pounds for all resources). ADF&G data that can be used to quantitatively measure the cultural importance of subsistence resources include data related to participation (percent of households attempting harvests of each resource) and sharing (percent of households receiving each resource). These measures were chosen as informing the cultural importance of subsistence resources because participation in subsistence activities promotes the transmission of skills from generation to generation, and sharing of subsistence resources between households strengthens community cohesion in the region. A third input for measuring the relative importance of subsistence resources is available for study communities who participated in SRB&A’s subsistence studies for the Project. During these interviews, SRB&A asked respondents to list the top three resources they considered most important to their subsistence uses. The identified resources reflect those most important to the community harvesters outside the framework of SRB&A’s assigned material or cultural variables. The table below shows how the above measures are used to categorize each resource as “high,” “moderate,” or “low” in terms of importance based on a similar analysis conducted for the Point Thomson Project EIS (USACE 2012). This analysis, while reflecting one method of quantitatively measuring the importance of subsistence resources, does not take into account a multitude of factors for which quantitative data do not exist (e.g., spirituality, ethics and values, ideologies, identities, celebration and ceremonies). Rankings of resources under high, moderate, and low importance should be viewed only in terms of the indicators presented here and not in terms of overall importance. Subsistence harvesters in the study communities routinely view all of the resources they harvest during their seasonal cycle of availability as important to their community and/or individual health and cultural identity.

Table 1. List of Quantitative Measures for Individual Resource Importance*


Importance Category/ Quantitative Measure	High	Moderate	Low
<i>Material Importance</i>			
% of total harvest (in pounds)	>xx%	xx%-xx%	<x%
<i>Cultural Importance</i>			
% of households attempting harvest	>xx%	xx%-xx%	<xx%
% of households receiving resource	>xx%	xx%-xx%	<xxx%
<i>Harvester Reported Importance</i>			

% of respondents listing as top 3 resource	>xx%	xx%-xx%	<xx%
* Values to be provided upon finalization of Project field work.			

5.4 ANALYZE POTENTIAL IMPACTS OF THE PROJECT ON SUBSISTENCE USES

After identifying subsistence impact categories, potential impact sources, impact likelihood by community, and key subsistence resources and measures of material and cultural importance, the study team will analyze the potential subsistence impacts of the Project on each resource/community by subsistence impact category. As requested, the study team will also provide recommended mitigation measures, in addition to mitigation measures already proposed by the Project, to lessen the potential impacts on subsistence. The study team will use the following outline to assess whether and how the Project will potentially affect subsistence uses:

- Construction
 - Impact Source (e.g., Project Infrastructure)
 - Subsistence Impact Category (e.g., resource availability, subsistence use areas, user access, cost and time, competition, and culture)
 - Impact Source (e.g., Noise/Traffic)
 - Subsistence Impact Category (e.g., resource availability, subsistence use areas, user access, cost and time, competition, and culture)
 - Impact Source (e.g., Contamination)
 - Subsistence Impact Category (e.g., resource availability, subsistence use areas, user access, cost and time, competition, and culture)
 - Impact Source (e.g., Hunting/Security Policies)
 - Subsistence Impact Category (e.g., resource availability, subsistence use areas, user access, cost and time, competition, and culture)
- Operation
 - Impact Source (e.g., Project Infrastructure)
 - Subsistence Impact Category (e.g., resource availability, subsistence use areas, user access, cost and time, competition, and culture)
 - Impact Source (e.g., Noise/Traffic)
 - Subsistence Impact Category (e.g., resource availability, subsistence use areas, user access, cost and time, competition, and culture)
 - Impact Source (e.g., Contamination)
 - Subsistence Impact Category (e.g., resource availability, subsistence use areas, user access, cost and time, competition, and culture)

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- Impact Source (e.g., Hunting/Security Policies)
 - Subsistence Impact Category (e.g., resource availability, subsistence use areas, user access, cost and time, competition, and culture)
- Mitigation, as requested and identified that would reduce potential impacts associated with the Project.

To inform and contextualize the six impact categories described above (e.g., subsistence use areas, resource availability, user access, costs and time, competition, and culture) SRB&A will use the 12 baseline indicators of subsistence use (compiled in the Appendix D to Resource Report No. 5 and also described in forthcoming community appendix reports of fieldwork results). For example, SRB&A will examine the data associated with the baseline indicators of harvest timing (#4) and transportation methods (#9) to inform the analysis of potential impacts from the Project to subsistence impact category of “User Access”. The 12 baseline indicators are:

- | | |
|--------------------------|--------------------------------|
| 1. Subsistence Use Area | 7. Harvest Sharing |
| 2. Harvest Amount | 8. Harvest Diversity |
| 3. Harvest Effort | 9. Transportation Methods |
| 4. Harvest Timing | 10. Duration of Harvest Trips |
| 5. Harvest Participation | 11. Frequency of Harvest Trips |
| 6. Harvest Success | 12. Resource Status |


5.5 APPLY IMPACT CRITERIA

The Project entity will work to develop impact criteria based on NEPA guidance. These impact criteria will be provided for FERC’s consideration in a subsequent version of Resource Report No. 5.

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6.0 ACRONYMS AND TERMS

ADF&G	Alaska Department of Fish and Game
APP	Alaska Pipeline Project
FERC	Federal Energy Regulatory Commission
SRB&A	Stephen R. Braund & Associates

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7.0 References

Braund, Stephen R. & Associates (SRB&A). 2014. Alaska LNG Subsistence and Traditional Knowledge. Data Gap Report. Prepared for URS. May 28, 2014.

United States Army Corps of Engineers (USACE). 2012. Point Thomson Project EIS. Final Environmental Impact Statement. July 2012.