

PUBLIC



Cultural Resources Management Plan

June 25, 2021


3062-CRM-PLN-00001

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REVISION HISTORY

Rev	Date	Description	Originator	Reviewer	Approver
0	6/25/2021	For Use	AGDC	PA Signatories & Consulting Parties	Frank T. Richards
Approver Signature*					

*This signature approves the most recent version of this document.

MODIFICATION HISTORY

Rev	Section	Modification

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ABSTRACT AND MANAGEMENT SUMMARY

Report Title	Cultural Resources Management Plan
Report Date	June 25, 2021
Land Ownership	State of Alaska, Bureau of Land Management, Denali Borough, Denali National Park and Preserve, Fairbanks North Star Borough, City of Nenana, Matanuska-Susitna Borough, North Slope Borough, Kenai Peninsula Borough, Alaska Mental Health Trust Authority, University of Alaska, U.S. Army Corps of Engineers, Ahtna, Inc., Cook Inlet Region, Inc., Toghottthele Corporation, Tyonek Native Corporation, Salamatof Native Association.
Document No.	3062-CRM-PLN-00001
Project Description	Pursuant to Section 3 of the Natural Gas Act, on May 21, 2020, the Alaska Gasline Development Corporation received Authorization from the Federal Energy Regulatory Commission (FERC) to construct, own and operate the following: a Gas Treatment Plant; a 1.0-mile-long, 60-inch-diameter Prudhoe Bay Unit Gas Transmission Line; a 62.5-mile-long, 32-inch-diameter Point Thomson Unit Gas Transmission Line; a 806.9-mile, 42-inch-diameter natural gas pipeline (Mainline Pipeline) and associated aboveground facilities, including eight compressor stations and a heater station; and a 20-million-metric-ton-per-annum liquefaction facility (Liquefaction Facilities), including an LNG Plant and Marine Terminal Facilities. Issuance of the federal permit is a federal action that makes the Project an undertaking subject to review under Section 106 of the National Historic Preservation Act. On June 24, 2020, FERC executed a Programmatic Agreement (PA) to satisfy its Section 106 consultation responsibilities; this document has been prepared to guide and support the implementation of the PA.
Project Location	The Project location spans across the State of Alaska north to south, from Point Thomson to Prudhoe Bay, on the North Slope, to the Matanuska-Susitna Borough, across Cook Inlet to the Kenai Peninsula Borough to Nikiski. The Project area includes lands within the following U.S. Geological Survey map quadrangles: Beechley Point (XBP, A1, A2, A3, B3); Flaxman Island (FLA, A4, A5); Sagavanirktok (SAG, A3, A4, B3, C3, C4, D3, D4); Philip Smith Mountains (PSM, A4, A5, B4, B5, C4, C5, D4); Chandalar (CHN, B6, C6, D6); Wiseman (WIS, A1, B1); Bettles (BET, A1, B1, B2, C2, D1, D2); Tanana (TAN, D1); Livengood (LIV, A4, B3, B4, C4, C5, D5, D6); Fairbanks (FAI, A5, B5, C4, C5, D1, D2, D3, D4); Healy (HEA, A5, A6, B4, B5, C4, D4, D5); Talkeetna Mountains (TLM, D6); Talkeetna (TAL, A1, B1, C1, D1); Tyonek (TYO, A3, A4, B2, B3, B4, C1, C2, D1); Anchorage (ANC, C7); Kenai (KEN, C4, C5, D3, D4).
Summary	This Plan provides an overview of cultural resources identification, consultation, and National Register of Historic Places (NRHP) eligibility evaluation work completed to date for the Project. The Plan identifies actions that will be completed to satisfy the terms of the PA, including strategies for the avoidance, minimization, and mitigation of historic properties that may be adversely affected by the Project. A total of 962 known cultural resources are present in the Project Area of Potential Effects. Of that total, 130 have been determined eligible for NRHP listing, 5 will be treated as eligible, 131 were determined not eligible, 17 have determinations pending, 1 is a National Historic Landmark, 2 are exempt from consideration, and 676 (17 in the direct APE and 659 in the indirect APE) have not been evaluated.

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G:	Parties Invited to Consult in Development of the Programmatic Agreement and CRMP
H:	Contacted/Proposed Stakeholders by Construction Spread and Area of Interest
I:	Monitoring Guidelines
J:	Proposed Resolution Measures
K:	Annual Report Template
L:	Plan for Unanticipated Discovery of Cultural Resources and Human Remains
M:	Revision and Amendment Logs

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ACRONYMS AND ABBREVIATIONS

%.....	percent
ACHP	Advisory Council on Historic Preservation
ADNR	Alaska Department of Natural Resources
AGDC	Alaska Gasline Development Corporation, Applicant
AGPPT.....	Alaska Gas Producer's Pipeline Team
AHPA	Alaska Historic Preservation Act
AHRS.....	Alaska Heritage Resources Survey
ANCSA	Alaska Native Claims Settlement Act
APE	Area of Potential Effect
APP	Alaska Pipeline Project
ARPA.....	Archaeological Resources Protection Act
ARRC.....	Alaska Railroad Corporation
AS	Alaska Statute
ASAP	Alaska Stand Alone Pipeline
ATWS.....	Additional Temporary Work Space
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
CIRI	Cook Inlet Regional, Incorporated
Consulting Parties	Present and Future Consulting Parties to the CRMP
CRMP.....	Cultural Resources Management Plan
Denali Project.....	Denali – the Alaska Gas Pipeline LLC
DNPP	Denali National Park and Preserve
DOE	Determination of Eligibility
DOT&PF.....	Department of Transportation and Public Facilities
FEED.....	Front End Engineering Design
FEIS.....	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FR	Federal Register
GIS	Geographic Information System
GPS	Global Positioning Systems
GTP.....	Gas Treatment Plant
HABS.....	Historic American Building Survey
HAER.....	Historic Architectural Engineering Record
HALS	Historic American Landscape Survey
IHLC	Iñupiat History, Language, and Culture
INHT	Iditarod National Historic Trail
LMR	Land Management Regulations
LNG.....	Liquefied Natural Gas
m	Meters

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MOF.....Material Offloading Facility
 MP.....Pipeline Milepost
 NAGPRA.....Native American Graves Protection and Repatriation Act
 NEPA.....National Environmental Policy Act
 NHPA.....National Historic Preservation Act
 NLUR.....Northern Land Use Research
 NPS.....National Park Service
 NRHP.....National Register of Historic Places
 NSB.....North Slope Borough
 OHA.....Office of History and Archaeology
 PA.....Programmatic Agreement
 PA Signatories..... ACHP, FERC, SHPO, BLM, NPS, and ADNR
 PBTLL.....Prudhoe Bay Transmission Line
 PBU.....Prudhoe Bay Unit
 PLF.....Product Loading Facility
 PMRE.....Port MacKenzie Rail Extension
 Project.....Alaska LNG Project
 PTTL.....Point Thompson Transmission Line
 ROW.....Right-of-Way
 SHPO.....State Historic Preservation Officer
 SOI.....Secretary of the Interior
 SRB&A.....Stephan R. Braund and Associates
 TAPS.....Trans-Alaska Pipeline System
 TCP.....Traditional Cultural Property
 TLUI.....Traditional Land Use Inventory
 USACE.....United States Army Corps of Engineers
 U.S.C.....United States Code

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1. INTRODUCTION

The Alaska Gasline Development Corporation (AGDC) has received an Order from the Federal Energy Regulatory Commission (FERC) granting authorization under Section 3 of the Natural Gas Act for the Alaska LNG Project (Project), consisting of a Gas Treatment Plant (GTP); a 1.0-mile-long, 60-inch-diameter Prudhoe Bay Unit Transmission Line (PBTL); a 62.5-mile-long, 32-inch-diameter Point Thomson Unit Transmission Line (PTTL); a 806.9-mile, 42-inch-diameter natural gas pipeline (Mainline Pipeline) and associated aboveground facilities, including eight compressor stations and a heater station; and a 20-million-metric-ton-per-annum liquefaction facility (Liquefaction Facilities), including an Liquefied Natural Gas (LNG) Plant and Marine Terminal Facilities. On March 6, 2020, FERC issued a Final Environmental Impact Statement (FEIS) for the Project in compliance with the requirements of the National Environmental Policy Act (NEPA). Under Section 15 of the Natural Gas Act, FERC serves as the lead federal agency for compliance with NEPA. Issuance of the federal authorization makes the Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA). On June 24, 2020, an executed Programmatic Agreement (PA) was issued by FERC which outlines responsibilities, requirements, and standards for the Project relative to cultural resources.¹ The purpose of this Cultural Resources Management Plan (CRMP) is to support and guide compliance with the stipulations of the PA.

Section 106, as amended, and its implementing regulations at 36 CFR 800, require federal agencies to identify historic properties within the area of potential effects (APE) of an undertaking which may be affected by the undertaking (54 U.S. Code [U.S.C.] 306108). If the undertaking is determined to have adverse effects on identified historic properties, Section 106 requires the federal agency to seek ways to avoid, minimize, or mitigate adverse effects in consultation with participants of the Section 106 process. Historic properties within the APE of the undertaking are identified using the criteria for listing in the National Register of Historic Places (NRHP) at 36 Code of Federal Regulations (CFR) 60.4 and in NRHP guidance (National Park Service [NPS] 1997).

1.1. Project Description and Planning Background

A Liquefaction Facility would be constructed on the eastern shore of Cook Inlet, south of the existing Agrium fertilizer plant, on the Kenai Peninsula, approximately 3 miles southwest of Nikiski and 8.5 miles north of Kenai. The Liquefaction Facility would include the structures, equipment, underlying access rights, and all other associated systems for processing and liquefaction of natural gas, as well as storage and loading of LNG to LNG ships. The Liquefaction Facility would include three liquefaction trains combining to process up to approximately 20 million metric tons per annum of LNG. Two 240,000-cubic-meter tanks would be constructed to store the LNG. The Liquefaction Facility would be capable of accommodating two LNG ships concurrently.

¹ Cultural resources are any prehistoric or historic site, district, object, cultural feature, building or structure, cultural landscape, or traditional cultural property (including artifacts, records, and related material remains). Once cultural resources are identified in the Area of Potential Effects (APE), agencies and Consulting Parties will be consulted to determine if any qualify as historic properties (FERC 2017).

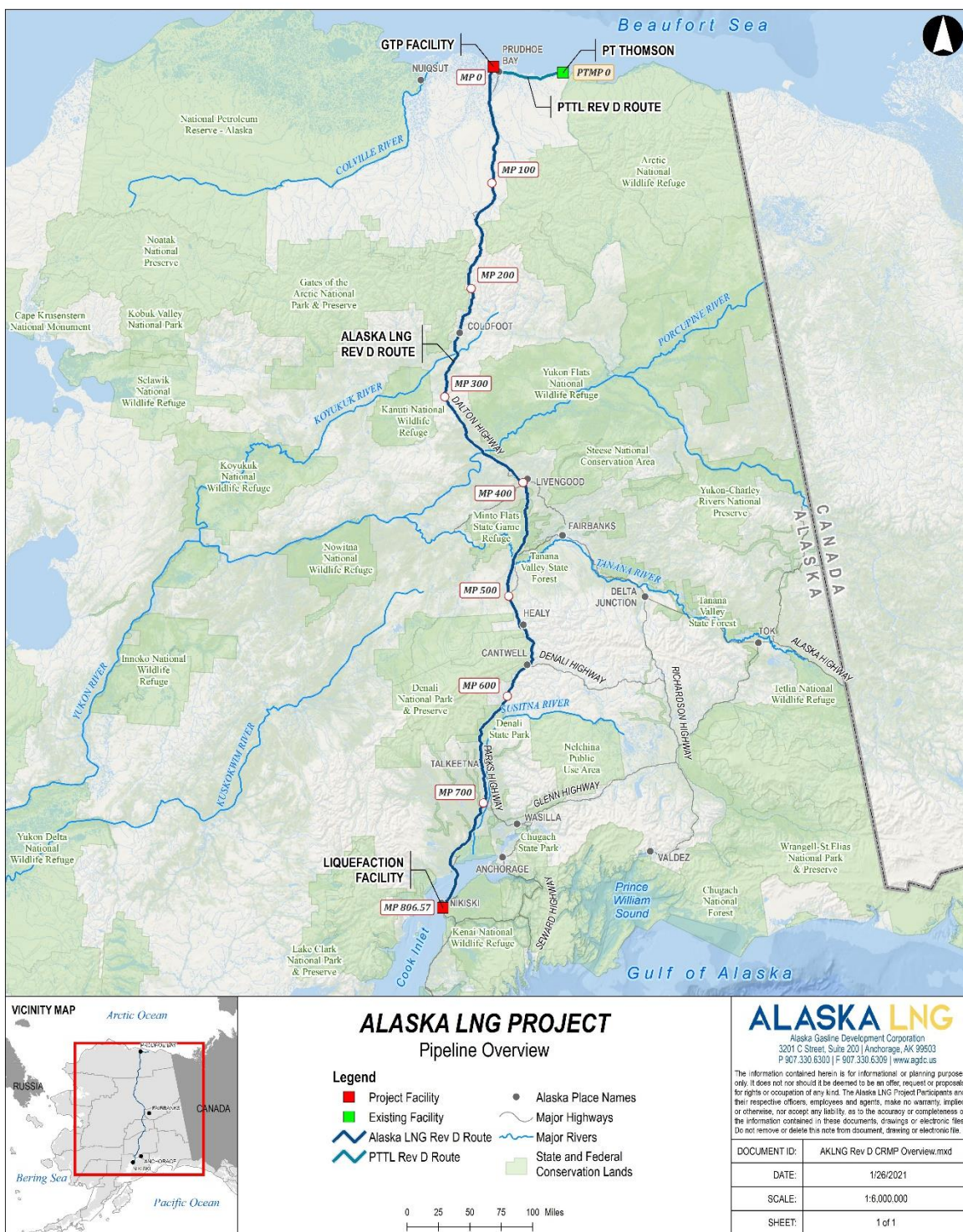
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In addition to the Liquefaction Facility, the Project would include the following interdependent facilities:

- **Mainline Pipeline:** A 42-inch-diameter buried natural gas pipeline approximately 807 miles in length would extend from the Liquefaction Facility to the GTP at the Prudhoe Bay Unit (PBU), including the structures, equipment, and other associated systems. The design anticipates eight compressor stations; one standalone heater station, and six cooling stations associated with six of the compressor stations; four meter stations; 30 mainline block valves; and associated infrastructure facilities. Associated infrastructure facilities include additional temporary workspace (ATWS), access roads, helipads, construction camps, pipe storage areas, material extraction sites, and material disposal sites.
- Along the Mainline Pipeline, the Project may also provide primary interconnection points, allowing for gas delivery to existing gas transmission and distribution systems, as well as secondary interconnection points with the potential to deliver gas to new service areas.
- **GTP:** A new GTP and associated facilities in the PBU would receive natural gas from the PBTL and the PTTL. The GTP would treat/process the natural gas for delivery into the Mainline Pipeline.
- **PBTL:** A new 60-inch natural gas transmission line would extend aboveground for 1 mile from the outlet flange of the PBU gas production facility to the inlet flange of the GTP.
- **PTTL:** A new 32-inch natural gas transmission line would extend aboveground 62.5 miles from the outlet flange of the PTU gas production facility to the inlet flange of the GTP.

Figure 1 provides an overview of the Alaska LNG Project. A complete description of the Project is included in FERC's FEIS (<https://www.ferc.gov/industries-data/natural-gas/final-environmental-impact-statement-0>). As noted in Volume 1, Section 2.3, of the FEIS, project construction and commissioning is estimated to take about 8 years, and work is anticipated to be in phases over that time period (Table 2.3.1-1 of the FEIS outlines the Project Construction Schedule, and Table 2.3.1-2 describes construction activities by year, which are provided as Tables 1 and 2, respectively). Cultural resources work will also be phased and will be done along a timeline that allows for completion of additional survey, evaluation, and on-site mitigation prior to construction activities. Preliminary schedule for remaining survey in the direct APE and mitigation schedules are discussed in Section 6 and Appendix J.

Figure 1. Alaska LNG Project Overview



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Table 1. Extracted FEIS Table 2.3.1-1 Project Construction Schedule

Facility	Duration (Years)
Gas Treatment Facilities	7.5
Mainline Facilities ^a	6.25
Liquefaction Facilities	6.75
^a Includes the Mainline Pipeline and associated aboveground facilities	

Table 2. Extracted FEIS Table 2.3.1-2 Construction Activities by Year

Year	Activities
1	<ul style="list-style-type: none"> • Liquefaction Facilities construction infrastructure development (camps, granular material, access, etc.), site preparation activities, piling, and foundation installation • Marine Terminal site preparation activities, Marine Terminal Material Offloading Facility (MOF) construction and dredging • GTP construction infrastructure development (camps, granular material, access, etc.), site preparation activities, and field-erected equipment installation • Construction infrastructure development (camps, borrow sites, access, and pads) for Mainline Pipeline Spreads 1 to 4; site preparation activities (right-of-way [ROW] construction) for Spreads 2 to 4
2	<ul style="list-style-type: none"> • Liquefaction Facilities construction infrastructure development, site preparation activities, piling, foundation installation • Liquefaction Facilities LNG tank construction • Marine Terminal site preparation activities, Marine Terminal MOF dredging and completion • GTP construction infrastructure development, site preparation activities, and field erected equipment installation • Construction infrastructure development and site preparation activities for Mainline Pipeline Spreads 1 to 4; pipeline construction for Spreads 3 and 4 • Pre-construction sealift offload
3	<ul style="list-style-type: none"> • Liquefaction Facilities construction infrastructure development, site preparation activities, piling, and foundation installation • Liquefaction Facilities LNG tank construction and LNG Train 1 and 2 installation and interconnection • Marine Terminal MOF maintenance dredging and trestle, berth, and quadropod installation • Marine Terminal trestle, berth, Product Loading Facility (PLF) module berth, and mooring dolphin installation • GTP construction infrastructure development, site preparation activities, and field erected equipment installation • PBTL construction • Construction infrastructure development, site preparation activities, and pipeline construction for Mainline Pipeline Spreads 1 to 4; Spreads 3 and 4 hydrostatic testing and final tie-in (summer months only) • Offshore pipeline construction, including hydrostatic testing and tie-in • PTTL Spreads 1 and 2 construction infrastructure development (ice road construction), site preparation activities, and pipeline construction • Pre-construction sealift offload

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Year	Activities
4	<ul style="list-style-type: none"> • Liquefaction Facilities site preparation activities, piling, and foundation installation • Liquefaction Facilities LNG tank construction and LNG Trains 1 and 2 installation and interconnection • Marine Terminal trestle, berth, PLF module berth, and mooring dolphin installation • GTP construction infrastructure development, site preparation activities, and field erected equipment installation • Sealift No. 1 module offload • PBTL construction • Mainline Pipeline Spreads 1 and 4 site preparation activities and Spreads 1 to 4 pipeline construction, hydrostatic testing, and final tie-in (summer months only) • Mainline aboveground facilities construction • Offshore pipeline construction, including hydrostatic testing and tie-in • PTTL Spreads 1 and 2 construction infrastructure development, site preparation, pipeline construction, hydrostatic testing, and final tie-in
5	<ul style="list-style-type: none"> • Liquefaction Facilities LNG tank construction; LNG Train 1 installation and interconnection; LNG product loading trestle mechanical completion, commissioning and start-up; Trains 2 and 3 installation, interconnection, and precommissioning • Marine Terminal PLF installation • Sealift No. 2 module offload • Mainline Pipeline Spreads 1 and 2 pipeline construction, hydrostatic testing, and final tie-in (summer months only) • Mainline aboveground facilities construction • Fill Mainline Pipeline and commissioning/start-up of facilities with GTP gas • Project commissioning: first LNG product, GTP Train 1 start-up
6	<ul style="list-style-type: none"> • Liquefaction Facilities LNG product loading trestle mechanical completion; Trains 1 and 2 installation, interconnection, commissioning and start-up; Train 3 installation, interconnection, pre-commissioning, and mechanical completion • Sealift No. 3 module offload • Mainline aboveground facilities construction • Fill Mainline Pipeline and commissioning/start-up facilities with GTP gas • Project commissioning: first LNG product, GTP Train 1 start-up (continued)
7	<ul style="list-style-type: none"> • Liquefaction Facilities Trains 2 and 3 commissioning and start-up • Marine Terminal MOF maintenance dredging, MOF reclamation/demobilization • Sealift No. 4 module offload • Mainline aboveground facilities construction • Project commissioning: intermediate LNG product, GTP Train 2 start-up
8	<ul style="list-style-type: none"> • Marine Terminal MOF reclamation/demobilization (continued) • Project commissioning: full LNG product, GTP Train 3 start-up

1.2. Purpose of the CRMP

The purpose of this CRMP is to support and guide compliance with the stipulations of the PA. The PA identifies a phased and project-specific path for compliance with Section 106. It includes the stipulations regarding continued consultation, historic property identification, assessment, and dispute resolution to

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ensure the FERC and other federal agencies meet required compliance with Section 106 and its implementing regulations at 36 CFR 800.

FERC is the lead federal agency for the purposes of compliance with Section 106 of the NHPA and, as mandated by federal law for the Section 106 process, contacted and/or consulted with federally recognized tribes and other entities, as outlined in the PA. Signatories of the PA included FERC, Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Bureau of Land Management (BLM), National Park Service (NPS), and Alaska Department of Natural Resources (ADNR). Concurring consulting parties of the PA include AGDC, Cook Inlet Region, Inc. (CIRI), Native Village of Tyonek, and Knik Tribe.

Lead federal agencies are required to work with Consulting Parties to identify historic properties within their project's APE; determine if the project will have an adverse effect; and then resolve any adverse effects through avoidance, minimization, and/or mitigation. In accordance with the PA, the Consulting Parties will be kept informed on the undertaking and on the implementation of the PA as described in Section 3 and according to reporting discussion in Section 8. AGDC has engaged with tribes, village corporations, Alaska Native Claims Settlement Act (ANCSA) regional corporations, historical societies, trail organizations, and borough governments to inform them of the issuance of a PA. AGDC also invited these organizations to provide comment on the draft CRMP. Additional outreach with these stakeholders will continue as revisions are made to the CRMP, updates are made to the contact list and Annual Agreement Reports are issued. Section 3.2 describes continued consultation and stakeholder engagement efforts.

This CRMP summarizes the cultural resources identification and Section 106 consultation efforts completed to date for the Project, and outlines the work that will be completed to support and guide compliance with the PA, including avoidance, minimization, and mitigation measures for the treatment of historic properties that will be adversely affected by the Project.

1.3. Organization of the CRMP

Section 1 of this CRMP presents an introduction to the Project and the purpose of the CRMP, as well as a brief Project description. Section 2 presents the regulatory context for cultural resources, including descriptions of applicable federal, state, and local cultural resource laws, regulations, policies, and permit requirements. Section 3 discusses the status of Section 106 consultation for the Project and the PA, and then concludes with a description of the APE.

Section 4 presents an overview of the cultural resources work completed to date, including summaries of previous Project-related surveys as well as other field and literature review investigations that have taken place in the APE. Section 5 identifies the cultural resources documented within the APE, and their eligibility for listing in the NRHP. Section 6 presents a discussion of the status of survey within the APE and the procedures for identification of historic properties in accordance with the PA, including field survey, site evaluations, and assessments of Project effects to historic properties within the APE. Section 7 identifies strategies that AGDC will implement to avoid, minimize, and mitigate effects to historic properties within the APE.

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Section 8 presents a summary of the actions, reports, and plans AGDC will complete to satisfy its responsibilities as defined in the PA. Section 9 provides an overview of the Plan for Inadvertent Discovery of Cultural Resources and Human Remains, which is attached in its entirety as Appendix L. Section 10 describes the processes for making changes to the CRMP, including substantive modifications.

The appendices included with this CRMP contain tables and mapbooks with more detailed information on the location of cultural resource investigations within the APE, and the location of documented cultural resource sites within the APE. Additionally, an environmental and cultural overview of the Project area is included.

2. REGULATORY BACKGROUND

Under Section 15 of the Natural Gas Act, FERC serves as the lead federal agency for compliance with NEPA, as well as compliance with and consultation under Section 106 of the NHPA. Additionally, sizeable portions of the Project will be constructed on federal land managed by the BLM, and to a lesser degree, the NPS. Other federal laws and regulations govern the management of cultural resources and human remains located on federal land. These laws include the Archaeological Resources Protection Act (ARPA) and the Native American Graves Protection and Repatriation Act (NAGPRA). The Project is subject to compliance with Alaska Statute (AS) 41.35.070 under the Alaska Historic Preservation Act (AHPA). Portions of the Project are located within the North Slope Borough (NSB), which maintains a permitting process that requires cultural resources to be considered for projects within its jurisdiction. These regulations are described in more detail below.

2.1. Section 106 of the National Historic Preservation Act (NHPA)

54 U.S.C. 306108; Regulations at 36 CFR 800

Section 106 of the NHPA, as amended, and implementing regulations at 36 CFR 800, as amended, mandate that federal agencies must consider the effects of undertakings they sponsor, authorize, or assist on historic properties. The NHPA defines an undertaking as, “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including...those requiring a Federal permit, license, or approval” (36 CFR 800.16[y]). Per 36 CFR 800.16 (l)(1) a “historic property” is defined as:

“...any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.”

The Section 106 implementing regulations lay out a process which seeks to balance historic preservation concerns with the requirements of the undertaking through consultation among the lead federal agency and other interested parties, including the ACHP, SHPO, other federal land-managing agencies, federally recognized tribes, and other Alaska Native groups, representatives of local government, and other

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interested parties. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess the effects of the undertaking, and seek measures to avoid, minimize, or mitigate adverse effects to historic properties.

Section 3 describes Section 106 consultation undertaken for the Project to date, and the PA defines further Section 106 implementation, including responsibilities, requirements, and standards.

2.2. Archaeological Resources Protection Act (ARPA)

16 U.S.C. 470aa-470mm; Regulations at 43 CFR 7

ARPA provides for the protection of archaeological resources on federal and Indian lands and requires federal land managers to issue permits for the excavation or removal of archaeological resources from lands under their jurisdiction. ARPA stipulates that appropriate tribes be notified prior to permit issuance to determine if significant religious or cultural sites may be affected. ARPA prohibits the sale or trafficking of artifacts removed from federal lands across interstate or international boundaries and levies both civil and criminal penalties for the illegal excavation, damage, or defacement of archaeological sites, and for the sale or trafficking of cultural materials illegally removed from federal lands.

Archaeological resources, as defined by ARPA, consist of any material remains of past human life or activities which are of archaeological interest and are at least 100 years in age and the physical site, location, or context in which they are found. A resource is of archaeological interest if, through its scientific study and analysis, information or knowledge can be obtained concerning human life or activities. Paleontological specimens, deposits, and remains are not considered archaeological resources under ARPA, unless they are located in an archaeological context.

ARPA stipulates information concerning the nature and location of any archaeological resource on federal or Indian lands may not be made available to the public, unless it is determined that such disclosure would further the purposes of the Act and not create a risk of harm to the resources or to the site where such resources are located.

AGDC will comply with ARPA by requiring persons conducting or supervising cultural resources work on their behalf to meet appropriate professional standards and hold appropriate federal or state permits and/or authorizations (PA Stipulations II.C and VI.A). AGDC will also require that any Project personnel found vandalizing, moving, or taking cultural materials, or violating any portion of ARPA (or AS 41.35.200) be subject to appropriate disciplinary action, including termination and involvement of appropriate law enforcement authority, where warranted (PA Stipulation II.D).

2.3. Native American Graves Protection and Repatriation Act (NAGPRA)

25 U.S.C. 3001 et seq.; Regulations at 43 CFR 10

NAGPRA requires federal agencies and museums receiving federal funds to inventory collections of human remains and associated funerary objects as well as consult with Indian tribes and Native Hawaiian organizations on the repatriation or disposition of these remains and objects. NAGPRA further requires that Indian tribes or Native Hawaiian organizations be consulted whenever archaeological investigations

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encounter, or are expected to encounter, Native American cultural items or when such items are unexpectedly discovered on federal or tribal lands.

NAGPRA contains provisions for both the intentional and inadvertent discovery of Native American cultural items on federal and tribal lands. Section 4 of NAGPRA establishes that illegal trafficking in human remains and cultural items may result in criminal penalties.

2.4. The Alaska Historic Preservation Act (AHPA)

AHPA (AS 41.35) regulates the treatment of historic, prehistoric, and archaeological resources on State of Alaska land or lands threatened by public (state) construction. The statute establishes that it is state policy to, “preserve and protect the historic, prehistoric, and archaeological resources of Alaska from loss, desecration, and destruction so that the scientific, historic, and cultural heritage embodied in these resources may pass undiminished to future generations” (AS 41.35.010) and establishes state title to all historic, prehistoric, and archaeological resources located on state-owned or state-controlled land. By definition this includes, “deposits, structures, ruins, sites, buildings, graves, artifacts, fossils, or other subjects of antiquity which provide information pertaining to the historical or prehistorical culture of people in the state as well as to the natural history of the state” (AS 41.35.230).

The statute compels the ADNRR to identify historic, prehistoric, and archaeological resources (AS 41.35.070(a)) and to determine if public construction projects will have any adverse impacts on these resources in advance of an undertaking (AS 41.35.070(b-c)).

The statute prohibits removal or destruction of the historic and archaeological resources located on state-owned or state-controlled lands, including tidelands and submerged lands, without a state permit. Additionally, the statute prohibits the possession, selling, buying, or transport of these resources without a state permit.

2.5. North Slope Borough (NSB) Regulations

The Land Management Regulation (LMR) Division of the NSB reviews land use permits and monitors compliance with applicable regulations. The NSB’s Iñupiat History, Language, and Culture (IHLC) Division has oversight of the historic, archaeological, and cultural sites within the boundaries of the NSB, which are recorded in the Traditional Land Use Inventory (TLUI) database. The IHLC is tasked with ensuring that development activities do not impact cultural sites, activities, or social/cultural practices and values. To that end, land use permits processed by LMR require the completion of a Certificate of IHLC/TLUI Clearance Application (Form 500). The TLUI clearance process also requires that cultural resource studies be conducted in project areas, and that consultation with affected village tribal presidents and city mayors occur before permits are granted.

3. SECTION 106 CONSULTATION

During the Section 106 process, federal agencies work with Consulting Parties to identify historic properties within their project’s APE. They determine if projects will have an adverse effect on those

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properties and then resolve adverse effects through avoidance, minimization, or mitigation. FERC is the lead federal agency for the purposes of compliance with Section 106 for this Project.

The remainder of this section discusses consultation between 2014 and finalization of the CRMP. An overview of the PA is provided in the following Section 3.1. Guidance for future consultation is provided in Sections 3.2 and 6.2 and consultation work will be documented in the annual PA reports. Consultation began on the Project in October of 2014, in the ‘pre-filing’ phase of the Project. FERC has conducted consultation (as required by 36 CFR 800.2) with federal, state, and local land-managing agencies as well as ANCSA corporations that own lands within the Project area. Additionally, FERC consulted with tribes, and other organizations and individuals with a demonstrated interest in the Project.

FERC’s Section 106 work to date, including a summary of the cultural resource surveys and consultations completed for each major facility, is described in Volume 3, Section 4.13 of the FEIS (FERC 2020). Section 4.14 of that same volume summarizes FERC’s evaluation of the Project relative to customary and traditional use of wildlife resources for subsistence. Traditional knowledge is relevant in a number of contexts, not least of which is its capacity to help identify places of traditional cultural significance and other ethnographic information important in the consideration of effects to cultural resources. Section 1.4 of the FEIS, Volume 1 (FERC 2020) describes FERC’s outreach on traditional knowledge. Table 1.4-1 in that section identifies issues and concerns raised during traditional knowledge workshops and identifies where information can be found in the FEIS to address each issue.

Since the issuance of the initial draft CRMP, AGDC has conducted extensive outreach with the stakeholders identified in Appendix H. The purpose of the outreach was to inform stakeholders about the execution of the PA and ensure stakeholders had and continue to have access to copies of the executed PA and a redacted version of the CRMP hosted on AGDC’s Project website.

Outreach to date has included engaging with federally recognized tribes, village corporations, ANCSA regional corporations, associations, borough governments, historical societies, and trail groups. Contact was made by phone followed by an email, phone calls, and additional follow-up emails. During the summer and early fall of 2020, it was often difficult to reach contacts by phone; therefore, some stakeholders only received emails. Additionally, the COVID-19 pandemic placed additional strain on communication with some of the smaller communities.

In addition to direct outreach to individual stakeholder groups, AGDC also held virtual meetings with organizations, including Alaska Tribal Unity, Tanana Chiefs, and Tikahtnu Forum. The Alaska Tribal Unity’s August 2020 Executive Director’s report, which is distributed to more than 150 federally recognized tribes in Alaska, included discussion about the draft CRMP with the public website address and contact information for AGDC. Tribal outreach for purposes of identifying cultural resources of ethnographic, cultural, spiritual, or religious significance for evaluation under Section 106 are described further in Section 6.2.

3.1. Programmatic Agreement (PA)

Because of the scale of the Project, as well as the phased nature of design, engineering, and construction, FERC prepared a PA for compliance with Section 106. Signatories of the PA include FERC, SHPO, and ACHP

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as well as Invited Signatories BLM, NPS, and ADNR (hereafter referred to as “PA Signatories”). Several other parties participated in development including AGDC, Knik Tribe, Native Village of Tyonek, and CIRI, who signed the PA as Concurring Consulting Parties.

As defined in the PA, AGDC is responsible for assisting FERC in meeting its obligations under Section 106. AGDC’s responsibilities include developing the CRMP (PA Stipulation V), historic property identification (PA Stipulation IV.B), facilitating consultation (PA Stipulation IV.B.ii, IV.C.iv.), gathering information to recommend evaluations for identified cultural resources within the APE (PA Stipulation IV.C), making recommendations for eligibility of cultural resource sites for the NRHP within the APE (PA Stipulation IV.C.ii), submitting proposed assessments of effect (PA Stipulation IV.C.iii), avoiding adverse effects to historic properties when possible, and working with FERC in consultation with other Consulting Parties to resolve adverse effects when they cannot be avoided (PA Stipulation IV.D).

Should any Signatory, Invited Signatory or Consulting Party to the PA (together, PA Parties) object at any time to any actions proposed or the manner in which the terms of the PA are implemented, the FERC staff shall consult with such parties to resolve the objection (PA Stipulation XI). If an interested party wishes to be added as a Consulting Party to the PA, FERC will consider such a request (PA Stipulation III.E).

3.2. Future Consultation

As required by 36 CFR 800, FERC, with the assistance of AGDC, will continue consultation and coordination efforts among the Consulting Parties, and other interested parties. In addition, FERC, with the assistance of AGDC, shall keep the Consulting Parties informed on the undertaking and implementation of the PA (PA Stipulation III.A). These updates will occur primarily via the Annual Agreement Report. Parties who were contacted for or participated in consultation for the FEIS or PA are listed in Appendix G. Appendix H identifies the Consulting Parties, and potential interested/consulting parties, as identified at this time, and their primary point of contact for the Project. AGDC will maintain and update the contact information in Appendix H annually, and include updates as part of the Annual Agreement Report. Additional information about annual meetings and other reporting requirements are discussed further in Section 8.

AGDC will facilitate consultation with other interested parties, as appropriate, using input from the Consulting Parties and stakeholder engagement. This will include further consultation with tribes² to identify places of traditional religious or cultural significance (see Section 5.3 and 6.2). AGDC recognizes that other interested parties, particularly tribes, may not seek to participate as Consulting Parties until Project activities approach areas to which they ascribe particular significance. As such, AGDC has preliminarily identified groups associated with each Construction Spread (Appendix H). Parties and organizations that may have an interest in future participation are also listed in Appendix H.

Once a decision is made to enter into Front End Engineering Design (FEED), AGDC will notify the PA Signatories, Invited Signatories and Consulting Parties and will also begin an outreach program to the

² The term “tribe” or “tribes” is consistent with the definition found at 36 CFR 800.16(m) and refers to a tribe, band, nation, or other organized group or community, including a native village, regional corporation or village corporation, formed pursuant to Section 3 of the Alaska Native Claims Settlement Act (43 USC 1602).

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villages and communities within the project footprint. Community meetings will include stations that provide information about different components of the project for that village/community. Stations can include, but are not limited to, subsistence, cultural resources, workforce needs, contracting opportunities, construction schedule, fisheries, traffic, land acquisition, and local impacts. The community meetings will be advertised as appropriate for the community – posters at local businesses, schools, post office; flyer sent to residents and/or post office boxes; radio and newspaper ads. During the community meetings, AGDC will ask for comments and input.

The methods used to engage with each community will vary and include but are not limited to: in-person meetings, phone calls, emails, and letters.

Tribal outreach for purposes of identifying cultural resources of ethnographic, cultural, spiritual, or religious significance for evaluation under Section 106 are described further in Section 6.2.

3.2.1. Document Distribution and Comments

AGDC will post documents produced to comply with the terms of the PA and CRMP to the Project website no later than 30 days after they have been finalized. The comment period for documents posted to the Project website may not be less than 30 days from the day it was posted. Publicly available documents will be redacted as necessary. In addition, AGDC will distribute these documents to stakeholders identified in Appendix H via email or hard copy as requested (with confidential information redacted as necessary). AGDC will also note the availability of these documents in the Annual Report, along with contact information and directions for submitting comments and questions, in any newsletters or similar forms of communication that are distributed to the public. Throughout implementation of the CRMP AGDC will collect comments from Consulting Parties and other interested parties on submitted documents using e-mail, hard copies and/or input from meetings. AGDC will also post the CRMP on the Alaska LNG Project website, which is accessible by the general public. AGDC will file collected comments with FERC for consideration.

3.3. Standards

As outlined in the PA in Stipulation VI, all work carried out under the requirements of the PA and CRMP must meet professional standards for qualifications and reporting requirements.

Identification and evaluation studies and any required treatment plans will be developed by and carried out by or under the direct supervision of a cultural resources professional(s) who meets, at a minimum, the Secretary of the Interior's (SOI) "Qualifications Standards" for Archeology and Historic Preservation (48 Federal Register [FR] 44738-9, September 29, 1983). During fieldwork efforts subject to discretionary shovel testing (see Section 6.2.1.3), the goal will be to have an SOI qualified field crew lead who has at least six months of Alaska-specific archaeological experience. If SOI qualified personnel with Alaska experience are not available, AGDC will work with SHPO to determine how best to address shovel testing decisions. It is recognized in the PA that tribes or other groups may have special expertise regarding places of traditional religious, spiritual, or cultural significance, or Traditional Cultural Properties (TCPs), but these individuals or groups may not meet the SOI Qualification Standards. The FERC indicated it will

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equally consider and incorporate, if appropriate, special expertise into decisions regarding the implementation of the PA, consistent with 36 CFR 800.2(c)(2).

Reporting requirements, identification, and evaluation studies, any required treatment plans, and the resulting reports are required to be consistent with the SHPO's state guidelines, the SOI's "Standards and Guidelines" (48 FR 44716-42, September 29, 1983), the ACHP's publication, "Treatment of Archaeological Properties," and the FERC's Office of Energy Projects' "Guidelines for Reporting on Cultural Resources Investigations for Natural Gas Projects" (FERC 2017).

3.4. Area of Potential Effects (APE)

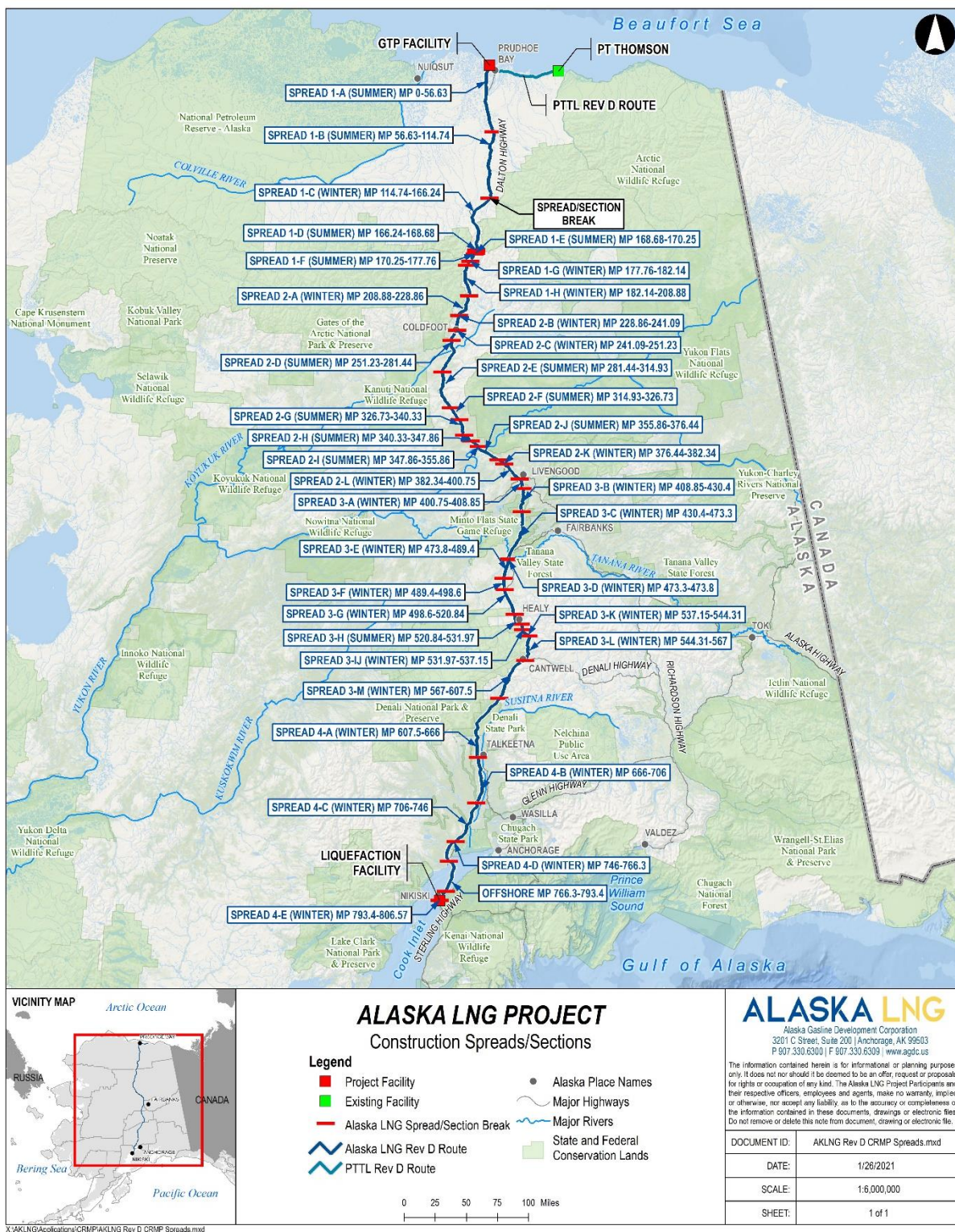
Under 36 CFR 800.16(d), the APE is defined as, "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historical properties, if any such properties exist."

FERC, as the lead federal agency and in consultation with PA Signatories, has established the undertaking's APE, as defined in 36 CFR 800.16(d), which encompasses direct and indirect effects on historic properties for agency-permitted alternatives.

The APE considered for direct effects includes the ROWs for construction of the PTTL, PBTL, and Mainline Pipeline, and the footprint of off-corridor facilities, ATWS, permanent and temporary access roads, and the GTP and Liquefaction Facilities, including submerged lands in the Beaufort Sea and Cook Inlet. The area considered for indirect effects is a 1-mile buffer around Project components, as described in the FEIS.

Figure 2 depicts a high-level map of the route and construction spreads. A map of the APE for the Project is provided in Appendix B.

Figure 2. Alaska LNG Proposed Construction Spreads



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4. PREVIOUS CULTURAL RESOURCE INVESTIGATIONS IN THE PROJECT AREA

Multiple cultural resource investigations have been conducted in the APE. Much of the direct APE north of Livengood was surveyed in the 1970s by archaeologists working on the Trans-Alaska Pipeline System (TAPS). Other cultural resource investigations completed within the vicinity of the APE include surveys of sections of the Parks Highway (DePew and Pendleton 2003; Thompson 2011), surveys conducted for the Alaska Railroad Corporation (ARRC), surveys for the Point MacKenzie Rail Extension (Pipkin 2006; Stephen R. Braund and Associates [SRB&A] 2009, 2010), and surveys conducted in the greater Fairbanks area for various municipal and borough projects (Matheson and Haldeman 1981; Dixon 1993). Robust surveys for proprietary oil and gas pipeline projects, including the Alaska LNG Project and the Alaska Pipeline Project (APP), have been completed within or in the vicinity of the direct APE as well as some off-ROW component areas (Alaska LNG 2016; Northern Land Use Research [NLUR n.d.]). A table of previous survey investigations conducted in the APE through the close of 2019 is provided in Appendix C.

4.1. Oil and Gas-Related Cultural Resource Surveys

There have been a number of linear surveys within the vicinity of the Project APE, associated with oil and gas-related work. TAPS was one of the first projects to complete systematic cultural resource surveys before its construction in the 1970s. More than 370 archaeological sites were documented during the TAPS surveys between 1969 and 1975 (Cook 1977). These field studies, which coincide in part with the Project APE, were conducted by personnel from the University of Alaska Fairbanks and what is now Alaska Pacific University. Another project that undertook cultural resource field investigations in the 1970s was the Northwest Alaska Pipeline Project. This project, which sought to construct a pipeline from Prudhoe Bay to the United States–Canada border, coincided in part with the APE between Prudhoe Bay and Livengood, before turning east toward the border (Aigner and Gannon 1981).

In 2001, investigations for the Alaska Gas Producer’s Pipeline Team (AGPPT) pipeline were conducted along a corridor from Prudhoe Bay and the United States-Canada border at Port Alcan (Potter et al. 2001). The northern portion of the AGPPT route is similar to the northern portion of the APE. A proprietary sensitivity model, which used geomorphic variables to identify portions of the proposed route as either low potential for containing cultural resources, moderate potential for containing cultural resources, or two separate types of high potential for containing cultural resources, was used to structure the field investigations. Low potential areas generally received spot checks by helicopter survey. Moderate and high potential areas generally received pedestrian surveys and some level of shovel testing. Approximately 624 linear miles of the AGPPT route were surveyed and 122 cultural resource sites were identified and recorded during the surveys.

In 2008, Denali – the Alaska Gas Pipeline LLC (Denali Project) proposed to construct a gas pipeline from Prudhoe Bay to Alberta, Canada. The northern portion of the Denali Project route followed the northern portion of the AGPPT route, and coincides with much of the northern portion of the APE for the Project. Cultural resource field investigations completed for the Denali Project focused primarily on the portions of the route between Delta Junction and the Canadian border, and thus, do not overlap the APE. However,

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a pedestrian survey with discretionary subsurface shovel testing was conducted at the Denali Project's proposed GTP at Prudhoe Bay in 2009 (NLUR n.d.) in the vicinity of the APE.

Between 2010 and 2012, the APP team applied a refined version of the proprietary sensitivity model developed for the AGPPT project to identify areas of cultural resource sensitivity for pedestrian survey and shovel testing. This project had two proposed corridors: one which ran from Prudhoe Bay to Valdez, the other which ran from Prudhoe Bay to Alberta. Similar to TAPS, AGPPT, and the Denali Project, portions of the APP project corridor coincided with the Project APE.

4.1.1. Alaska LNG Surveys

AGDC (through cultural resource contractors) conducted extensive cultural resource surveys in the APE for the Project. Below is a list of reports submitted to FERC, Alaska SHPO, BLM, and/or NPS that provided the results of the cultural resource studies conducted between 2013 and 2019.

1. Alaska LNG 2010, 2011, and 2013 Phase I Cultural Resource Summary Report: Archaeological Survey and Site Documentation (USAKE-UR-SRZZZ-00-0017, AKLNG-5000-HSE-RTA-DOC-00320)
2. Alaska LNG 2013 Phase I Cultural Resource Report: Archaeological Survey and Site Documentation on Bureau of Land Management Lands (USAKE-UR-SRZZZ-00-0020, AKLNG-5000-HSE-RTA-DOC-00323)
3. Alaska LNG 2013 Phase I Cultural Resource Report: Archaeological Survey and Site Documentation (USAKE-UR-SRZZZ-00-0021, AKLNG-5000-HSE-RTA-DOC-00325)
4. Alaska LNG 2013 Phase I State Report Errata Sheet_071416 (USAKE-UR-SRZZZ-00-0021, AKLNG-5000-HSE-RTA-DOC-00545)
5. Alaska LNG 2014 Phase I Cultural Resources Inventory Report for the Proposed Liquefaction Facility Component of the Alaska LNG Project, Nikiski, Alaska (USAI-UR-SRZZZ-00-000014-000, AKLNG-5000-HSE-RTA-DOC-00092)
6. Alaska LNG 2014 Phase I Cultural Resource Report Federal Lands, Archaeological Survey and Site Documentation (USAI-UR-SRZZZ-00-000022-000, AKLNG-5000-HSE-RTA-DOC-00105)
7. Alaska LNG 2014 Phase I Cultural Resource Report, Archaeological Survey and Site Documentation (USAI-UR-SRZZZ-00-000023-000, AKLNG-5000-HSE-RTA-DOC-00106)
8. Alaska LNG 2014 Cultural Resources Data Gap Analysis and Sensitivity Model (USAKE-UR-SRZZZ-00-0033, AKLNG-5000-HSE-RTA-DOC-00542)
9. URS 2015 Interim Ethnographic Report – Iñupiat (USAI-UR-BRZZZ-00-000003-000, AKLNG-5000-HSE-RTA-DOC-00208)
10. EXP 2015 Cultural Resource Advisor Summary Report, Alaska LNG (AKLNG-5000-HSE-RTA-DOC-00546)
11. Alaska LNG 2015 Phase I Cultural Resource Report: Archaeological Survey and Site Documentation (USAI-P1-SRZZZ-00-000008-000, AKLNG-5000-HSE-RTA-DOC-00531)

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12. Alaska LNG 2015 Phase I Cultural Resource Report: Archaeological Survey and Site Documentation. Bureau of Land Management Lands (USAI-P1-SRZZZ-00-000009-000, AKLNG-5000-HSE-RTA-DOC-00532)
13. Alaska LNG 2015 Cultural Resource Evaluation Report (USAI-P1-SRZZZ-00-000007-000, AKLNG-5000-HSE-RTA-DOC-00044)
14. Alaska LNG 2015 Phase II Cultural Resource Report: Site Evaluations (USAI-P1-SRZZZ-00-000005-000, AKLNG-5000-HSE-RTA-DOC-00042)
15. Alaska LNG 2015 Phase II Cultural Resource Report: Site Evaluations. Bureau of Land Management Lands (USAI-P1-SRZZZ-00-000004-000, AKLNG-5000-HSE-RTA-DOC-00041)
16. Alaska LNG 2015 Phase I Cultural Resources Inventory and Monitoring Report for the Proposed Liquefaction Facility Component of Alaska LNG, Nikiski, Alaska (USAI-UR-SRZZZ-00-000071-000, AKLNG-5000-HSE-RTA-DOC-00547)
17. Alaska LNG Submerged Cultural Resources Review and Assessment, Cook Inlet, Alaska (USAI-PI-SRZZZ-90-000001-000, AKLNG-5000-HSE-RTA-DOC-00521).
18. URS 2016 Ethnographic Report (USAI-UR-SRZZZ-00-000093-000, AKLNG-5000-HSE-RTA-DOC-000270)
19. Alaska LNG July 2016 Phase II Cultural Resource Report: Site Evaluations of BET-00081, BET-00139, BET-00201, BET-00213, CHN-00021, CHN-00076, CHN-00124, CHN-00125, FAI-02390, PSM-00188, PSM-00588, PSM-00600, TAL-00208, WIS-00436, and WIS-00437 (USAI-UR-SRZZZ-00-000089-000, AKLNG-5000-HSE-RTA-DOC-00266)
20. Alaska LNG 2016 Phase I Cultural Resource Report: Archaeological Survey and Site Documentation on BLM Lands (ARPA) (USAI-P1-SRZZZ-00-000017-000, AKLNG-5000-HSE-RTA-DOC-00051)
21. Alaska LNG 2016 Phase I Cultural Resource Report: Archaeological Survey and Site Documentation (USAI-P1-SRZZZ-00-000019-000, AKLNG-5000-HSE-RTA-DOC-00053)
22. Alaska LNG 2016 Phase II Cultural Resource Report: Site Evaluations (USAI-P1-SRZZZ-00-000020-000, AKLNG-5000-HSE-RTA-DOC-00534)
23. Alaska LNG 2016 Phase II Cultural Resource Report: Site Evaluations on Bureau of Land Management Lands (USAI-P1-SRZZZ-00-000018-000, AKLNG-5000-HSE-RTA-DOC-00533)
24. AGDC 2018 Phase II Cultural Resource Report for Alaska LNG DNPP Alt 2: Survey, Site Documentation, and Site Evaluation (AKLNG-6010-CRM-RTA-DOC-00002)
25. AGDC 2019 Submerged Cultural Resources Review and Assessment Cook Inlet, Alaska (AKLNG-6010-CRM-RTA-DOC-00003)

To aid in depicting the status of surveys completed within the current APE, and the specific survey method used, a mapbook displaying identified surveys within the Project footprint is provided in Appendix B. The

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mapbook also displays surveys completed for the APP (discussed above) and the Alaska Stand Alone Pipeline (ASAP) projects (Section 4.1.2, below), which have similar project footprints and activities.

Cultural resource field investigations for the Project were designed based on mapped sensitivity or the archaeological potential of areas along the Project corridor. Pre-survey helicopter overflights were conducted to demarcate generally high or low potential survey segments and note any visible historic buildings or structures. A desktop review of the corridor, which applied a proprietary sensitivity model, identified areas with very low to no potential for cultural resources and those areas were eliminated from field surveys. The remaining areas were segregated into low potential (Type A) and high potential (Type B) areas, taking into account consideration of known site locations, land cover, slope, surface geology, soils, distance to water, distance to trails, and wildlife distributions. For Type A areas, helicopter or vehicular surveys of segments not previously surveyed were used to identify isolated higher-potential areas for targeted field survey. For Type B areas, field investigations were implemented, including pedestrian transect surveys with systematic shovel testing of previously un-surveyed areas, as well as targeted surveys where the previous surveys (e.g., Denali Project, AGPPT, APP, or ASAP) were considered inadequate.

The field investigations included a combination of walkover, surface inspection, and shovel testing. Of these techniques, walkover transects or vehicular/aerial surveys were used most frequently in Type A survey areas. Surveys included visual inspection of areas where previous surveys were conducted or where topography and vegetation cover suggested a lower potential for cultural resources. These areas comprised wetlands or inundated areas, previously disturbed locations, and areas where the slope exceeded 15 percent (%). Shovel testing was employed along with these methods for Type B areas. Shovel tests were placed at a maximum interval of 15 meters (m) and assigned a unique identification number. Location data were collected using handheld Global Positioning Systems (GPS) units; both location data and survey results were recorded on survey forms. The shovel tests were excavated to a depth below which cultural materials might be expected, as little as 10 centimeters below surface in some areas, and more than 100 centimeters below surface in others such as alluvial and colluvial settings. To investigate strata below the base of standard shovel tests, 1-inch-diameter cores were used.

Select prehistoric and historic period artifacts were collected from the surface and in shovel tests. Non-diagnostic prehistoric artifacts were recorded in the field using GPS, documented in field notes, and photographed. Diagnostic items and tools were collected for further analysis. Unique diagnostic historic artifacts were retained for analysis; however, non-diagnostic or mass-produced items were recorded and left at the site. For surveys conducted on state and federal lands, a provisional artifact curation agreement was obtained with the University of Alaska, Museum of the North in Fairbanks for eventual disposition of the collected artifacts. The disposition of artifacts collected from surveys on private lands was done in accordance with landowner requirements.

Investigations to determine the potential for deeply buried cultural deposits within the APE for the Project footprint were initiated during the 2015 field season (Proue et al. 2016); excluding the Denali Route. Recent studies documented stratified Late Pleistocene and Holocene sites in dune fields of the Tanana Valley. Project representatives sought to investigate similar eolian landforms where deeply stratified

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cultural materials were recorded. Dune deposits in the lower Nenana River and the loess deposit mantling the lower foothills bordering the east side of the Tolovana River were selected for deep testing (Proue et al. 2016). Field investigations included excavation of 1-m x 1-m test units to a depth of at least 1.2 m into dune and loess deposits to search for cultural materials and to collect charcoal and sediment samples. Sediments were excavated with shovels and trowels, and then passed through 1/8-inch mesh screens. Deposits below 1.2 m were examined using a 1-inch soil probe with extensions to permit sampling to 5 m below ground surface (Proue et al. 2016).

Cultural resource surveys conducted in 2015 focused not only on the pipeline corridor, but also off-ROW facilities and previously documented cultural resources sites. In 2016, surveys focused primarily on the pipeline centerline of the PTTL, access routes, and off-ROW facilities. By the close of the 2016 field season, approximately 33,828 acres (comprising just over 50% of the Alaska LNG Project area) had been surveyed. Intensive Phase II surveys were completed for the Project between 2015 and 2016, which resulted in the NRHP eligibility evaluation of more than 150 cultural resources (Alaska LNG 2016). Surveys of the Denali National Park and Preserve (DNPP) were conducted in late summer 2018 (AGDC 2018) and in 2019, submerged cultural resources in Cook Inlet were evaluated along the pipeline and pipelay corridors, bringing the total surveyed area to over 90% for the Alaska LNG Project (AGDC 2019).

4.1.2. ASAP Surveys

AGDC (through cultural resource contractors) conducted aerial and pedestrian archaeological surveys in the APE of the ASAP Project route between 2009 and 2014. The surveys for that project were useful for the Alaska LNG Project as well, as much of the footprint for the ASAP Project aligns with the Project APE.

Results of the ASAP survey efforts are reported in the following AGDC reports, which have been submitted to the Alaska Office of History and Archaeology (OHA):

- Alaska Stand Alone Gas Pipeline Project/ASAP Cultural Resource Report for the 2010 and 2011 Field Seasons (AGDC 2012);
- Alaska Stand Alone Gas Pipeline Project/ASAP Cultural Resource Report for the 2013 Field Season (AGDC 2014a);
- Alaska Stand Alone Gas Pipeline Project/ASAP Cultural Resource Report for the 2013 Field Season North of Livengood (AGDC 2014b);
- Alaska Stand Alone Gas Pipeline Project/ASAP Cultural Resource Report for the 2014 Field Season (AGDC 2015d); and
- Letter Report from Marko Radonich to Earle Williams (BLM 2012).

In 2009, AGDC conducted aerial and vehicular (windshield) reconnaissance surveys for the entire then-Mainline alignment, at the time referred to as the ASAP ENSTAR Bullet Line; however, no pedestrian survey was conducted at that time. The goal of the 2009 surveys was to identify pedestrian survey target areas for future years and to understand the general topography of the Project as a whole (AGDC 2012).

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In 2010, AGDC instituted pedestrian survey methods and completed a pedestrian reconnaissance survey within a 300-foot corridor along 75 miles of the then-Mainline alignment. The 2010 survey occurred at 10 locations between the North Slope, Happy Valley, and the Trapper Creek area. The survey was conducted in parallel transects, spaced 50 feet apart; systematic shovel testing occurred at 1,000-foot intervals in areas considered to have high potential for cultural resources. The 2010 pedestrian reconnaissance survey resulted in the identification of 10 new cultural resource sites (AGDC 2013).

Pedestrian surveys continued in 2011, when AGDC conducted pedestrian reconnaissance survey with discretionary subsurface (shovel) testing within a 200-foot corridor along approximately 243 miles of the then-Mainline alignment and Fairbanks Lateral alignment. The Mainline alignment survey was focused on the portion of the Mainline south of Fairbanks. AGDC also completed 50 miles of aerial reconnaissance and limited pedestrian survey in the Minto Flats area (AGDC 2013). In addition to the alignment survey, AGDC conducted archaeological testing at proposed borehole locations between Healy and Willow. The tested boreholes were located both within and outside of the 2011 alignment survey targets.

In 2012, pedestrian survey and shovel testing was completed at three proposed borehole locations at the Mainline alignment's crossing at the Yukon River. No cultural resources were identified as a result of this testing (BLM 2012).

In 2013, AGDC conducted pedestrian reconnaissance surveys with discretionary subsurface (shovel) testing along a 200-foot-wide corridor centered along 88 miles of the then-Mainline alignment. A survey was completed at various places from Livengood south, and in a 5-mile section north of Livengood, near Grayling Lake. No new cultural resources were identified at Grayling Lake, 13 new cultural resources were documented south of Livengood, and 12 previously recorded Alaska Heritage Resources Survey (AHRS) sites were revisited (AGDC 2014a).

In 2014, SHPO and federal land managing agencies expressed concern regarding the number of intensive surveys occurring for oil and gas projects, and the potential impacts these surveys were having on cultural resources. Consequently, AGDC refined survey methods to create as little an impact as possible and still collect enough information about the location and nature of cultural resources along the Mainline alignment. These methods, including Levels II and III survey methods, were employed for surveys conducted in 2014.

The overall intent of the 2014 field surveys was to identify the location, nature, and extent of cultural resources along the Mainline alignment for the purpose of better project consultation and planning. Because the survey area spanned a large part of the state and crossed many diverse natural settings, the methods and strategies of cultural resource surveys varied from place to place. Areas were judged as having high, medium, or low potential for cultural resources based on several factors, including landform, proximity to other known cultural resources, and proximity to natural resources such as waterbodies, or concentrations of subsistence fish, plants, and wildlife species.

Intensive survey and subsurface testing was not conducted in areas with high concentrations of previously documented sites (e.g., Galbraith Lake, Gallagher Flint Station, etc.), as numerous sites had already been

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identified at these locations and additional intensive survey methods presented the potential to adversely affect the sites.

Survey methods included a variety of Level II reconnaissance, and Level III pedestrian intensive survey strategies. Pedestrian survey was conducted by crews of three to five people. Aerial survey was conducted with a crew of three archaeologists. Windshield survey was conducted by a group of four archaeologists riding together in a car.

Level II reconnaissance survey involved a general visual inspection of an area by means of helicopter, automobile (windshield), and non-systematic pedestrian access. Reconnaissance-level surveys involved gathering general information about an area of low to moderately low potential, or in areas of moderate potential that were not readily accessible by foot. When done by air, surveyors flew in a helicopter traveling low and slow enough to visually inspect the survey area terrain for indications of cultural resources. Windshield reconnaissance was also done slowly in low potential areas where the survey area was visible from the roadside. Windshield and aerial reconnaissance survey provided a basis for identification of higher potential areas for pedestrian survey.

Level III pedestrian-intensive survey involved a systematic mode of visual inspection where, whenever possible, the crew walked 15-m parallel transects. Where parallel transects were not possible, adapted survey strategies were used to take advantage of exposed ground, areas with good ground visibility and access. Pedestrian survey methods were used for areas of medium to high potential that could be accessed on foot. Pedestrian-intensive survey involved the discretionary, non-systematic excavation of subsurface shovel tests in areas of high potential or to define the boundaries of a site.

During both reconnaissance and pedestrian intensive surveys, if potential for finding cultural resources appeared to increase, methods for investigation and testing were intensified at the discretion of the field crew chief. Subsurface testing also occurred at the discretion of the crew chief, primarily as a means to intensively investigate areas of high potential or define the boundaries of a site.

Survey areas and efforts were documented with digital photographs, Garmin GPS, GPS-enabled tablets, hand-drawn maps using compass and measuring tape, and in the notes handwritten daily by each field crew member. Observed cultural resources and subsurface testing were described in field notes, photographed, and geo-located using GPS.

A total of 404.5 miles of the ASAP Mainline alignment were surveyed in 2014, including 252 miles of Level II aerial reconnaissance, 77.5 miles of Level II windshield reconnaissance, and 76 miles of Level III pedestrian intensive. A total of 24 new cultural resource sites were documented.

4.2. Other Notable Surveys

4.2.1. Northern Region

In addition to the aforementioned oil and gas-related surveys, a number of cultural resource investigations have been conducted along the Dalton Highway in association with highway maintenance and improvements, including proposed material sources (DePew 2001; DePew and Pendleton 2003;

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Gerlach et al. 2001; Thompson 2002, 2013a, 2013b). Many of these surveys covered portions of off-ROW Project components located adjacent to the Dalton Highway, and employed similar survey methods as those used during the ASAP and Alaska LNG Project cultural resources surveys. In addition, BLM has conducted numerous discrete surveys in the APE in association with mining permits and other assessments (Adkins 2000a-g; Mills 2003; Smith 2004).

4.2.2. Interior Region

Notable cultural resource investigations that have occurred within the APE in the Interior Region, and which have employed methods similar to the ASAP and Alaska LNG projects, include the Tower Hill Mines surveys near Livengood (Proue et al. 2014, 2013), surveys associated with maintenance and operation of the ARRC (Cultural Resource Consultants, LLC 2005; Kriz 2003; Reuther et al. 2003; Potter et al. 2001; Williams and Ream 2005; Yarborough 2005), and surveys associated with electric distribution lines (Potter and Bowers 2004).

4.2.3. Southcentral Region

The Southcentral Region has been the focus of several surveys associated with Parks Highway improvement projects (Thompson 2011) as well as Matanuska-Susitna Borough-sponsored cultural resource investigations. Surveys associated with the Port MacKenzie Rail Extension (PMRE) project, however, are one of the largest and most noteworthy investigations overlapping the APE. Surveys for PMRE were conducted primarily in 2008 (SRB&A 2010) and resulted in the identification of 42 cultural resources.

5. CULTURAL RESOURCES IN THE APE

This section identifies and describes the cultural resources in the Project APE. Appendix A lists identified cultural resources in the direct APE, including the approximate route milepost, the site's AHRS number, NRHP eligibility status, a site description, and an estimated period for start of construction. In addition, a mapbook displaying the location of each cultural resource in relation to the APE is attached in Appendix B.

5.1. AHRS Resources

The OHA maintains a central data repository of cultural resources, the AHRS that have been documented within the state and includes more than 45,000 reported resources, including archaeological sites, buildings, structures, objects, and districts (OHA 2018). The database is an inventory of the cultural resources documented in the state, and is used in research, project planning, resource management and Section 106 and AS 41.35.070 consultation.

Sites recorded in the AHRS tend to be either archaeological in nature or related to the built environment, and include objects, structures, buildings, sites, districts, and travel ways. The AHRS has a general stipulation that sites must be at least 50 years old, though age exceptions can be made. AHRS sites are maintained in the database as points, lines, or polygons, depending on the nature of the site. The overwhelming majority of sites, however, are represented as points. Linear data represent features such

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as historic roads or trails. Polygons are used for sites encompassing large areas, as well as historic and archaeological districts. Sites are documented in the AHRS regardless of their eligibility for the NRHP.

While much of the APE has received some level of previous cultural resource survey, only a portion of Alaska in general has been surveyed for cultural resources. Consequently, when reviewing the AHRS inventory, a lack of reported sites in any given area in the state may not indicate the area is devoid of cultural resources. Furthermore, as technology for cultural resource surveys and mapping has changed, precision of site location mapping has improved. Resources documented prior to the advent of GPS may not be mapped in the AHRS at their actual locations, and resources documented as discrete points in the AHRS may cover larger areas.

Paleontological resources are considered natural resources and are not subject to Section 106 consideration. However, paleontological specimens, deposits, and remains are considered archaeological resources under ARPA, if they are located in an archaeological context. Further, the State of Alaska includes fossils and resources important to the natural history of the state in its definition of “historic, prehistoric, and archaeological resources” (AS 41.35.230), thus they are included in the AHRS inventory and shown in Appendix A.

Examination of AHRS records revealed that a total of 962 documented AHRS sites are located within the APE for the Project. Of the AHRS sites, 141 are within the direct APE, and the remaining 821 are within the indirect APE. NRHP eligibility status for the sites within the direct APE are summarized in Table 3. NRHP eligibility status for all sites within the APE is shown in Appendix A. Sites with insufficient data and sites that have not yet been evaluated will be addressed as defined under the terms of the PA and CRMP.

Table 3. Number of AHRS Sites in the Direct APE

NRHP Status	Total Number of Sites in Direct APE	Percentage of Total
Determined Eligible and/or Listed	58	41
Treated as Eligible	5	3.5
National Historic Landmark	1	< 1
Eligibility Pending with SHPO	6	4
Not Eligible	52	37
Unevaluated (Paleontological)	0	0
Insufficient Data or Unevaluated	19	13.5
TOTALS	141	100

Documented linear cultural resources, such as trails and roads, are designated with a different AHRS number for each map quadrangle through which they cross. Some of these linear resources cross the direct APE multiple times, and have multiple AHRS designations, but represent a single resource. Similarly, some AHRS sites and districts are polygons that may be present in both the direct and indirect APE.

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5.2. Select Notable Sites and Sites Concentrations

5.2.1. *Gallagher Flint Station*

Near the Gallagher Flint Station is a concentration of approximately 75 densely clustered prehistoric sites, many of which are located within the direct or indirect APE for the Project. Prehistoric features in the area are recorded in AHRS as individual points with a single locus, or as individual points with multiple loci. The concentration of sites, including Gallagher Flint Station NHL, suggests the area could be an archaeological district; however, no formal district boundary demarcation is documented in the AHRS database.

The Gallagher Flint Station itself (PSM-00050) is a National Historic Landmark, determined nationally significant for its age (one of the oldest sites reported north of the Brooks Range, dates to 10,500 Before Present [B.P.]) and for its evidence of repeated use over time by different cultural groups. Gallagher Flint Station was first documented during cultural resource surveys for the TAPS project. Materials recovered at the site included lithics, wood, bone, pottery, and charcoal, and are associated with American Paleoarctic, Northern Archaic, and Arctic Small Tool traditions (OHA 2017; Morton 1985). Many of the sites in the vicinity of Gallagher Flint Station contain both surface and sub-surface components and have been damaged over the years from archaeological testing and excavation, along with TAPS and Dalton Highway construction and maintenance.

AHRS records indicate Gallagher Flint Station was excavated in the 1970s; however, estimates by the BLM (Bowers 1983) suggest only 30 to 40% of the site has been excavated. The previous excavation was concentrated on the south side of the site, and to a lesser extent, the east side of the site. A 1997 assessment (Ferguson 1997), as well as photos taken by NPS in 2014, suggest the portion of the site through which the proposed pipeline route passes (north and west sides of the NHL) are in good condition and relatively undisturbed by testing or excavation.

A number of other documented multi-loci surface lithic scatters and multi-component sites are located within the direct APE, in vicinity of Gallagher Flint Station. These are PSM-00197, PSM-00601, PSM-00056, and PSM-00573. Most of these sites received intensive field testing consisting of excavation of up to 10 individual 50-cm-square excavation units per site, during survey for the Alaska LNG Project.

5.2.2. *Galbraith Lake*

The area around Galbraith Lake is rich in prehistory, with more than 150 concentrated prehistoric sites, again, many of which are within the APE. Similar to the Gallagher Flint Station Concentration, sites at Galbraith Lake were first documented during surveys for the TAPS project and are recorded both as individual sites, and as single sites with multiple loci. Also similar to Gallagher Flint Station, no formal district boundary demarcation is documented in AHRS. Notable sites within the Galbraith Lake Concentration include Mosquito Lake (PSM-00049), which is associated with the Denbigh Complex, and Atigun III (PSM-00075), which is associated with late prehistoric Kavik phase. Atigun III is noted as being part of the Atigun Archaeological District (PSM-00204); however, the boundaries of this district are not clearly demarcated in AHRS. As with Gallagher Flint Station, many of the sites within the Galbraith Lake concentration area express both surface and subsurface components, and sites in proximity to TAPS and

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the Dalton Highway have been damaged over the years from archaeological testing and excavation, as well as pipeline and highway construction and maintenance activities.

Galbraith Lake hosts sites ranging from ephemeral Northern Archaic hunting camps to long-term protohistoric Nunamiut village sites. One of these sites, PSM-00075, is located within the direct APE. The most extensively tested and excavated site in the area is Mosquito Lake (PSM-00049), though both BLM and Alaska LNG surveys at Mosquito Lake observed cultural materials on the surface of the site, suggesting undisturbed areas of the site may still remain.

5.2.3. Rosebud Knob

The direct APE bisects the Rosebud Knob Archaeological District (LIV-00284) near the community of Livengood. The district was recently determined to be NRHP-eligible, for its ability to contribute to an understanding of land and resource use. It includes a concentration of 17 documented prehistoric sites ranging from lookouts and flaking stations to complex, multi-component camps. Naturally occurring outcrops of chert, a material commonly used in the manufacture of lithic tools, are located throughout the Rosebud Knob area. There is one NRHP-eligible site associated with the District within the direct APE (LIV-00047).

5.2.4. Bonanza Tors and Kanuti River

A small cluster of prehistoric archaeological sites is located near Bonanza Creek. Field investigations for the Alaska LNG Project have evaluated a number of these sites, which consist primarily of isolated or small concentrations of surface and/or subsurface lithic artifacts. Two of these sites (BET-00081 and BET-00255) are located within the direct APE and have been determined eligible for listing in the NRHP.

As at Bonanza Creek, a small concentration of prehistoric archaeological sites are located near the Direct APE's intersection with the Kanuti River. The sites appear to be primarily surface lithic scatters representing reduction sequences, and with the exception of NRHP-eligible BET-00250, are largely outside the direct APE.

At Bonanza Tors, two of these sites (BET-00255 and BET-00081) are in the direct APE and have been determined to be eligible for the NRHP, while at the Kanuti River, one site (BET-00250) is located within the APE and has been determined to be eligible. Each of these sites received intensive shovel testing during survey for Alaska LNG.

5.2.5. Dena'ina Historic Properties

West of Kroto Creek are three eligible sites that are likely of Dena'ina origin and are located within the larger Kroto Creek Dena'ina Village subsistence use area. Eligible Dena'ina sites are also located adjacent to Anderson and Alexander Creeks. Several unevaluated Dena'ina related sites are within the direct APE and based on discussions with the Knik Tribe there are likely undocumented sites within the indirect APE.

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5.2.6. Iditarod National Historic Trail

The Iditarod National Historic Trail (INHT) is a congressionally designated historic trail and the only National Historic Trail in Alaska. The INHT was designated in 1978 for its rich diversity of climate, terrain, scenery, wildlife, recreation, and resources in a largely unchanged environment (BLM 2018). The Direct APE crosses three trails associated with the INHT (TYO-00084, TYO-00086, and TYO-00228), one of which (TYO-00228) is also a contributing resource to the Iditarod Dog Sledding Historic District and Vernacular Landscape (TYO-00203).

Near MP 703 the Direct APE crosses TYO-00228, the U.S. Geological Survey (USGS) Base Map Winter Trail 1. Near MP 721 the Direct APE crosses TYO-00086, the Susitna River-Old Skwentna Connecting Trail, an eligible historic trail that connects to the INHT. The Direct APE crosses the Knik-Rainy Pass Trail (TYO-00084), a segment of the primary INHT near MP 726. Also, near this location, but outside of the direct APE, is TYO-00224, the Iditarod Sled Dog Race Trail which is also a contributing resource to the Iditarod Dog Sledding Historic District. The INHT is of national significance and the experience of passing through the Iditarod landscape is one of the character-defining features of the trail.

5.2.7. Denali Park Road Historic District

A good overview of the Denali Park Road Historic District (also known as the Mount McKinley National Park Road Historic District) is provided in the National Register of Historic Places Registration Form filed by the National Park Service. It indicates,

“The Mount McKinley National Park Road Historic District (the District) is a 90.7-mile-long, approximately 300-foot-wide, curvilinear scenic corridor that features the majority of the Park Road (the road), the main thoroughfare of Denali National Park and Preserve. Between 1922 and 1938, the road was constructed under a collaborative effort by the Alaska Road Commission (ARC) and the National Park Service (NPS) to support tourism at the then newly established Mount McKinley National Park (signed into legislation on February 26, 1917) while simultaneously facilitating access to mining operations in the Kantishna Hills. Situated in the northeast quadrant of the park unit, the District is oriented east to west, stretching from Miles 1.8 to 92.5 of the road. The District Boundary excludes the road’s re-routed and newly constructed easternmost and westernmost termini, comprised of the 1.8-mile-long entrance segment (Miles 0 to 1.8), rerouted in 2001, and the 0.5-mile-long segment paralleling the Kantishna Airstrip (Miles 92.5 to 93), constructed in 2002. The District is divided into four distinct road segments that vary in topography, road width, road materials, and accessibility. Features of each segment range from paved to gravel roadbeds, one- to two-lane routes, limited to expansive views, and front- to back-country areas. The District encompasses a total of 18 contributing resources: 11 structures, 5 sites, and 2 buildings. The four segments that compose the road are counted as structures. For the purpose of this Registration Form, berms, ditches, and pullouts are considered part of the road structure. The 5 resources counted as sites are the East Fork Coal Mine, the archeological site of an early twentieth-century ARC mining operation, and four gravel pits associated with the construction and maintenance of the

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road during its period of significance. The contributing buildings are the Savage River Check Station which was built in 1972 to coincide with the new shuttle bus system and the Upper Savage River Cabin. The “Patrol Cabins,” constructed by ARC, contribute to the historic character of the Park Road; however, 4 of the 5 roadside Cabins were added to the National Register in 1986 so only the previously unlisted Upper Savage River Cabin is added to the resource count. This nomination identifies 9 non-contributing resources including the Dean Cabin building constructed in 1975, after the period of significance, 4 bridges constructed in the 1980s after the period of significance, and 4 other types of structures consisting of late-twentieth- to early twenty-first-century culverts, signs, and fords that lack association with the identified areas of significance related to the District.”

Although outside the APE, the Denali Park Road Historic District may be indirectly affected by the LNG Project through the introduction of a visible break in vegetation along the Direct APE. The potential visible impact, and other potential impacts of construction and project implementation will be evaluated.

5.3. Ethnographic Resources

Ethnographic resources are cultural or landscape features of a region to which traditionally associated cultures have formed significant connections and which are closely linked with the communities’ sense of purpose, existence as a community, development as ethnically distinctive people, and survival of their lifeways. Ethnographic resources are held as traditionally meaningful, and may be sites, landscapes, structures, objects, or natural resources such as plants, fish/wildlife, minerals, or water bodies that have legendary, religious, subsistence, or other significance in the cultural system of the group traditionally associated with them. These types of resources include places of traditional religious or cultural importance to tribes, cultural landscapes or districts, and TCPs.

5.3.1. Traditional Cultural Properties (TCPs)

A TCP is a property that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community (NPS 1998:1). A TCP’s eligibility is based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. The identification and documentation of TCPs are provided in NRB 38 *Guidelines for Evaluating and Documenting Traditional Cultural Properties* (NPS 1998). NRB 38 lists four criteria that a cultural resource should meet to be considered a TCP:

- Must be a physical location on the landscape
- Maintains the cultural identity and sense of self for a living group/community
- Rooted in a community’s history and religious beliefs or perspective of the natural world
- The location has been used for more than 50 years

No TCPs have been designated within the APE to date, although AGDC recognizes that such sites might be present, based on the long history of traditional use in Alaska.

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5.3.2. Traditional Knowledge

Traditional knowledge incorporates knowledge of ecosystem relationships and a code of ethics governing appropriate use of the environment. This code includes rules and conventions promoting desirable ecosystem relations, human-animal interactions, and even social relationships, since the latter continues to be established and reaffirmed through hunting and other activities on the land. Traditional knowledge articulates with non-traditional knowledge to form a rich and distinctive understanding of life and the world (Alaska Native Science Commission, 2018). The Director General of the United Nations Educational, Scientific and Cultural Organization has defined traditional knowledge as follows:

The indigenous people of the world possess an immense knowledge of their environments, based on centuries of living close to nature. Living in and from the richness and variety of complex ecosystems, they have an understanding of the properties of plants and animals, the functioning of ecosystems and the techniques for using and managing them that is particular and often detailed. In rural communities in developing countries, locally occurring species are relied on for many - sometimes all - foods, medicines, fuel, building materials and other products. Equally, people's knowledge and perceptions of the environment, and their relationships with it, are often important elements of cultural identity...(Mayor, 1994)

Traditional knowledge is information concerning the characteristics of Alaskan natural resources including vegetation, wildlife, and subsistence; and about use or management practices that are passed down from generation to generation and contribute to the cultural, social, and spiritual identity of Alaska Native communities. Traditional knowledge is accrued through observation and experience and shared among members of a cultural group over time, often through oral traditions. Traditional knowledge is valued in many Alaskan communities and can inform resource management actions and decisions. The depth of traditional knowledge comes from inhabiting a location for a long time. It includes detailed knowledge of animals, plants, and the use of appropriate technologies for hunting, trapping, and fishing (Inglis, 1993) that is integrated into a system of practices and beliefs.

5.3.3. Nuiqsut Cultural Landscape

A large portion of the North Slope area has been documented as the Nuiqsut Cultural Landscape (Brown 1979, 2001; SRB&A 2013). The NPS defines cultural landscapes as “a geographic area, including both cultural and natural resources and wildlife or domestic animals therein, associated with a historic event, activity, or person, or that exhibit other cultural or aesthetic values” (Page et al. 1998:12). The Nuiqsut Cultural Landscape is centered largely on the area west of the APE for the Project, but its eastern boundary does include the direct and indirect APE, from the proposed West Dock area down along the Mainline Alignment for approximately 112 miles. Though not documented in AHRS, the Nuiqsut Cultural Landscape represents cultural site locations, cultural traditions, and land use and circulation patterns. Cultural patterns and traditions are reflected in the cultural and natural features of the landscape. Natural features, such as rivers, bluffs, pingos and wildlife, provide the setting in which cultural activities take place and heavily influence the characteristics of the cultural landscape, while cultural sites consist of

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locations defined by archaeological, ancestral, historic, traditional, sacred, camp, cabin, birthplace, harvest, and subsistence uses (U.S. Army Corps of Engineers [USACE] 2018).

The cultural resource locations that comprise the Nuiqsut Cultural Landscape are primarily located west of the APE; however, a primary characteristic of the cultural landscape within the Project's APE is the Sagavanirktok River Valley. The valley is one of the major circulation features of the cultural landscape and has been a year-round travel route and ancestral hunting and trapping area for multiple generations. The Iñupiat and their ancestors have used the Sagavanirktok River since time immemorial, and continuity of this customary use and the practices associated with it help maintain the Iñupiaq cultural identity and ties to the cultural landscape (USACE 2018).

6. HISTORIC PROPERTY IDENTIFICATION AND ASSESSMENT OF EFFECT

6.1. Survey Progress

To date, approximately 96% of the direct APE has been surveyed, 68.12% of which was surveyed at the pedestrian level. Approximately 50% of the direct APE for off-ROW components, including but not limited to, temporary workspaces, camps, material sites, and HDD entry and exit pads, has also been surveyed using pedestrian, windshield, aerial, and marine methodology. Table 4 delineates the amount and type of survey that has been completed along the Mainline ROW footprint. Table 5 delineates the amount and type of survey that has been completed for off-ROW project components. Table 5 includes 'alternate' material sites, some of which will be deleted from the project footprint and the direct APE during final design. In total, unsurveyed 'alternate' material sites represent 36% (889.5 acres) of the total unsurveyed acreage in Table 5.

The amount and type of survey that has occurred within the direct APE for each type of Project component, including off-ROW components, is delineated in Appendix E. Remaining inventory and assessment requirements are discussed in Section 6.2. In particular, inventory and evaluation of cultural landscapes and properties of religious or cultural significance which may be present is ongoing throughout the APE.

Table 4. Percentage of Survey by Construction Spread of ROW Components through December 31, 2019

Construction Spread/Section				Pedestrian Survey		Vehicle Survey		Aerial Survey		Marine Survey		Desktop Survey		Unsurveyed		Total Acres	Total Percentage
Spread/Section	Milepost Range	Start of Construction	Pipe Lay Season	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage		
1-A	MP 0 - 56.63	2nd Year (S-0.5)	W1	139.6	13.4%	3.4	0.3%	842.8	80.8%	--	0.0%	56.9	5.5%	0.6	0.1%	1,043.3	100.0%
1-B	MP 56.63 - 114.74	2nd Year (S-0.5)	S1.5	651.3	66.7%	--	0.0%	323.5	33.2%	--	0.0%	0.9	0.1%	0.1	0.0%	975.8	100.0%
1-C	MP 114.74 - 166.24	1st Year (W-1)	W2	878.7	96.4%	0.9	0.1%	27.2	3.0%	--	0.0%	4.5	0.5%	0.3	0.0%	911.5	100.0%
1-D	MP 166.24 - 168.68	4th Year (Early S1.5)	W2	33.4	87.0%	--	0.0%	5.0	13.0%	--	0.0%	--	0.0%	--	0.0%	38.5	100.0%
1-E	MP 168.68 - 170.25	3rd Year (S0.5)	S2.5	19.4	67.5%	9.3	32.3%	--	0.0%	--	0.0%	0.0	0.1%	--	0.0%	28.8	100.0%
1-F	MP 170.25 - 177.76	3rd Year (S0.5)	S2.5	137.7	95.8%	--	0.0%	--	0.0%	--	0.0%	4.3	3.0%	1.8	1.2%	143.7	100.0%
1-G	MP 177.76 - 182.14	2nd Year (W0)	W2	75.5	95.0%	--	0.0%	2.8	3.6%	--	0.0%	1.0	1.2%	0.2	0.2%	79.5	100.0%
1-H	MP 182.14 - 208.88	2nd Year (W0)	S2.5	458.9	94.9%	0.0	0.0%	--	0.0%	--	0.0%	21.9	4.5%	2.6	0.5%	483.3	100.0%
2-A	MP 208.88 - 228.86	1st Year (W-1)	W1	247.8	70.1%	58.4	16.5%	37.8	10.7%	--	0.0%	7.9	2.2%	1.4	0.4%	353.2	100.0%
2-B	MP 228.86 - 241.09	1st Year (W-1)	W1	226.5	100.0%	--	0.0%	--	0.0%	--	0.0%	--	0.0%	0.1	0.0%	226.5	100.0%
2-C	MP 241.09 - 251.23	1st Year (W-1)	W1	169.0	98.4%	2.6	1.5%	--	0.0%	--	0.0%	--	0.0%	0.1	0.1%	171.7	100.0%
2-D	MP 251.23 - 281.44	2nd Year (S-0.5)	S1.5	518.3	98.9%	3.8	0.7%	--	0.0%	--	0.0%	1.7	0.3%	0.4	0.1%	524.3	100.0%
2-E	MP 281.44 - 314.93	2nd Year (S-0.5)	S1.5	548.5	94.3%	3.8	0.6%	15.9	2.7%	--	0.0%	12.8	2.2%	0.5	0.1%	581.4	100.0%
2-F	MP 314.93 - 326.73	2nd Year (S-0.5)	S1.5	171.5	84.8%	6.8	3.3%	--	0.0%	--	0.0%	24.0	11.9%	0.0	0.0%	202.2	100.0%
2-G	MP 326.73 - 340.33	2nd Year (S-0.5)	S1.5	212.8	90.8%	4.1	1.7%	5.3	2.2%	--	0.0%	12.2	5.2%	0.0	0.0%	234.4	100.0%
2-H	MP 340.33 - 347.86	2nd Year (S-0.5)	S1.5	133.5	97.2%	--	0.0%	0.0	0.0%	--	0.0%	3.8	2.8%	0.1	0.0%	137.4	100.0%
2-I	MP 347.86 - 355.86	2nd Year (S-0.5)	W2	122.7	97.4%	--	0.0%	2.0	1.6%	--	0.0%	1.3	1.0%	0.0	0.0%	126.0	100.0%
2-J	MP 355.86 - 376.44	2nd Year (S-0.5)	S2.5	339.0	97.4%	0.6	0.2%	3.2	0.9%	--	0.0%	4.5	1.3%	0.6	0.2%	348.0	100.0%
2-K	MP 376.44 - 382.34	2nd Year (W0)	W2	99.8	98.5%	0.2	0.2%	--	0.0%	--	0.0%	1.3	1.3%	0.0	0.0%	101.3	100.0%
2-L	MP 382.34 - 400.75	2nd Year (W0)	S2.5	275.3	82.5%	0.3	0.1%	33.3	10.0%	--	0.0%	24.9	7.4%	0.1	0.0%	333.8	100.0%
3-A	MP 400.75 - 408.85	1st Year (W-1)	W0	27.0	16.2%	--	0.0%	132.2	79.5%	--	0.0%	7.2	4.3%	--	0.0%	166.3	100.0%
3-B	MP 408.85 - 430.4	1st Year (W-1)	W0	241.4	57.9%	--	0.0%	175.7	42.1%	--	0.0%	0.0	0.0%	0.2	0.0%	417.3	100.0%
3-C	MP 430.4 - 473.3	1st Year (W-1)	W0	606.1	74.2%	--	0.0%	168.8	20.7%	--	0.0%	13.6	1.7%	28.6	3.5%	817.2	100.0%
3-D	MP 473.3 - 473.8	1st Year (W-1)	W1	8.1	96.7%	--	0.0%	--	0.0%	--	0.0%	--	0.0%	0.3	3.3%	8.4	100.0%
3-E	MP 473.8 - 489.4	1st Year (W-1)	W1	293.5	99.2%	--	0.0%	--	0.0%	--	0.0%	1.8	0.6%	0.6	0.2%	295.9	100.0%

Construction Spread/Section				Pedestrian Survey		Vehicle Survey		Aerial Survey		Marine Survey		Desktop Survey		Unsurveyed		Total Acres	Total Percentage
Spread/Section	Milepost Range	Start of Construction	Pipe Lay Season	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage		
3-F	MP 489.4 - 498.6	1st Year (W-1)	W1	173.6	100.0%	--	0.0%	--	0.0%	--	0.0%	--	0.0%	--	0.0%	173.6	100.0%
3-G	MP 498.6 - 520.84	1st Year (W-1)	W1	263.0	63.9%	133.9	32.5%	6.1	1.5%	--	0.0%	8.1	2.0%	0.5	0.1%	411.5	100.0%
3-H	MP 520.84 - 531.97	1st Year (S-1.5)	S0.5	100.9	48.9%	90.4	43.8%	--	0.0%	--	0.0%	0.1	0.0%	15.0	7.3%	206.3	100.0%
3-IJ	MP 531.97 - 537.15	1st Year (W-1)	W-1	117.5	70.9%	0.2	0.1%	10.2	6.2%	--	0.0%	0.3	0.2%	37.6	22.7%	165.8	100.0%
3-K	MP 537.15 - 544.31	1st Year (W-1)	W-1	101.4	77.9%	--	0.0%	--	0.0%	--	0.0%	--	0.0%	28.7	22.1%	130.1	100.0%
3-L	MP 544.31 - 567	1st Year (W-1)	S0.5	149.7	33.7%	62.3	14.0%	147.6	33.2%	--	0.0%	0.1	0.0%	84.7	19.1%	444.4	100.0%
3-M	MP 567 - 607.5	2nd Year (W0)	S1.5	325.5	40.0%	211.1	26.0%	191.7	23.6%	--	0.0%	11.3	1.4%	73.8	9.1%	813.3	100.0%
4-A	MP 607.5 - 666	1st Year (W-1)	S0.5	741.4	67.6%	302.1	27.6%	34.9	3.2%	--	0.0%	8.7	0.8%	9.1	0.8%	1,096.2	100.0%
4-B	MP 666 - 706	1st Year (W-1)	W0	141.2	20.7%	69.3	10.2%	462.3	67.8%	--	0.0%	3.2	0.5%	5.7	0.8%	681.7	100.0%
4-C	MP 706 - 746	1st Year (W-1)	W1	744.1	89.1%	--	0.0%	69.9	8.4%	--	0.0%	6.9	0.8%	14.1	1.7%	835.0	100.0%
4-D	MP 746 - 766.3	2nd Year (W0)	S1.5	347.3	86.0%	--	0.0%	9.0	2.2%	--	0.0%	0.2	0.0%	47.2	11.7%	403.7	100.0%
Offshore	MP 766.3 - 793.4	4th Year (Offshore)	S	5.6	0.0%	--	0.0%	0.0	0.0%	8,813.1	23.1%	29,313.1	76.9%	--	0.0%	38,131.8	100.0%
4-E	MP 793.4 - 806.57	2nd Year (W0)	S1.5	146.7	55.3%	4.3	1.6%	0.0	0.0%	--	0.0%	0.4	0.2%	114.0	43.0%	265.5	100.0%
PTTL	PTTL	3rd Year (W)	W	18.8	1.1%	--	0.0%	1,491.0	86.9%	--	0.0%	0.0	0.0%	205.8	12.0%	1,715.7	100.0%
Grand Total				10,012.1	18.5%	967.6	1.8%	4,197.9	7.7%	8,813.1	16.3%	29,558.9	54.5%	674.8	1.2%	54,224.2	100.0%

Notes:
ROW Facilities include the pipeline Construction and Operational ROW, Additional Temporary Workspace (ATWS), Compressor Stations, Meter Stations, Mainline Block Valves and Helipads.
Based on Alaska LNG project footprint, Mainline Rev D and PTTL Rev D, includes all acreage required for construction.
Acreage for Mainline Meter Stations within the GTP and LNG Facilities, and for Block Valves and Compressor Station Camps within Compressor Station Facilities is set to 0.00 acres.
Numbers are rounded to one decimal place.

Table 5. Percentage of Survey by Construction Spread of Off-ROW Components through December 31, 2019

Construction Spread/Section				Pedestrian Survey		Vehicle Survey		Aerial Survey		Marine Survey		Desktop Survey		Unsurveyed		Total Acres	Total Percentage
Spread/Section	Milepost Range	Start of Construction	Pipe Lay Season	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage		
GTP	GTP	Pre-Mainline	N/A	--	0.0%	--	0.0%	873.4	96.1%	--	0.0%	0.2	0.0%	35.7	3.9%	909.3	100.0%
PBTL	PBTL	Pre-Mainline	N/A	--	0.0%	--	0.0%	7.3	100.0%	--	0.0%	--	0.0%	--	0.0%	7.3	100.0%
LNG	LNG	Pre-Mainline	N/A	534.8	34.7%	46.4	3.0%	62.9	4.1%	87.7	5.7%	459.3	29.8%	350.1	22.7%	1,541.3	100.0%
1-A	MP 0 - 56.63	2nd Year (S-0.5)	W1	84.6	10.2%	38.3	4.6%	330.8	39.7%	--	0.0%	325.2	39.0%	54.4	6.5%	833.3	100.0%
1-B	MP 56.63 - 114.74	2nd Year (S-0.5)	S1.5	186.3	28.2%	6.9	1.0%	394.9	59.8%	--	0.0%	48.1	7.3%	24.2	3.7%	660.4	100.0%
1-C	MP 114.74 - 166.24	1st Year (W-1)	W2	613.6	84.6%	19.4	2.7%	7.1	1.0%	--	0.0%	14.9	2.1%	70.4	9.7%	725.5	100.0%
1-D	MP 166.24 - 168.68	4th Year (Early S1.5)	W2	1.6	23.3%	--	0.0%	--	0.0%	--	0.0%	0.6	8.4%	4.6	68.3%	6.8	100.0%
1-E	MP 168.68 - 170.25	3rd Year (S0.5)	S2.5	0.7	29.2%	1.6	70.8%	--	0.0%	--	0.0%	--	0.0%	--	0.0%	2.3	100.0%
1-F	MP 170.25 - 177.76	3rd Year (S0.5)	S2.5	52.6	90.5%	--	0.0%	--	0.0%	--	0.0%	3.5	5.9%	2.1	3.6%	58.2	100.0%
1-G	MP 177.76 - 182.14	2nd Year (W0)	W2	40.2	97.4%	--	0.0%	0.1	0.3%	--	0.0%	0.0	0.1%	0.9	2.2%	41.2	100.0%
1-H	MP 182.14 - 208.88	2nd Year (W0)	S2.5	274.5	96.5%	--	0.0%	--	0.0%	--	0.0%	7.7	2.7%	2.2	0.8%	284.4	100.0%
2-A	MP 208.88 - 228.86	1st Year (W-1)	W1	117.4	91.4%	6.1	4.7%	0.0	0.0%	--	0.0%	1.3	1.0%	3.6	2.8%	128.4	100.0%
2-B	MP 228.86 - 241.09	1st Year (W-1)	W1	179.6	93.7%	0.1	0.0%	--	0.0%	--	0.0%	0.1	0.1%	11.8	6.2%	191.6	100.0%
2-C	MP 241.09 - 251.23	1st Year (W-1)	W1	139.7	92.9%	2.3	1.5%	3.3	2.2%	--	0.0%	0.3	0.2%	4.7	3.1%	150.3	100.0%
2-D	MP 251.23 - 281.44	2nd Year (S-0.5)	S1.5	235.6	88.8%	12.1	4.6%	--	0.0%	--	0.0%	2.3	0.9%	15.3	5.8%	265.3	100.0%
2-E	MP 281.44 - 314.93	2nd Year (S-0.5)	S1.5	309.4	71.9%	99.4	23.1%	2.7	0.6%	--	0.0%	13.9	3.2%	4.8	1.1%	430.2	100.0%
2-F	MP 314.93 - 326.73	2nd Year (S-0.5)	S1.5	88.0	94.2%	4.3	4.6%	--	0.0%	--	0.0%	0.9	1.0%	0.2	0.2%	93.4	100.0%
2-G	MP 326.73 - 340.33	2nd Year (S-0.5)	S1.5	122.0	83.0%	23.4	16.0%	0.1	0.1%	--	0.0%	0.7	0.5%	0.7	0.5%	146.9	100.0%
2-H	MP 340.33 - 347.86	2nd Year (S-0.5)	S1.5	37.2	85.0%	6.3	14.4%	--	0.0%	--	0.0%	0.3	0.6%	--	0.0%	43.8	100.0%
2-I	MP 347.86 - 355.86	2nd Year (S-0.5)	W2	167.9	81.7%	11.9	5.8%	0.2	0.1%	--	0.0%	1.0	0.5%	24.6	12.0%	205.5	100.0%
2-J	MP 355.86 - 376.44	2nd Year (S-0.5)	S2.5	159.6	88.9%	4.6	2.6%	--	0.0%	--	0.0%	0.2	0.1%	15.1	8.4%	179.6	100.0%
2-K	MP 376.44 - 382.34	2nd Year (W0)	W2	121.7	66.1%	12.9	7.0%	29.7	16.1%	--	0.0%	4.2	2.3%	15.5	8.4%	184.0	100.0%
2-L	MP 382.34 - 400.75	2nd Year (W0)	S2.5	198.2	86.1%	25.0	10.9%	0.6	0.3%	--	0.0%	0.0	0.0%	6.2	2.7%	230.1	100.0%
3-A	MP 400.75 - 408.85	1st Year (W-1)	W0	276.5	85.1%	35.1	10.8%	2.9	0.9%	--	0.0%	0.7	0.2%	9.8	3.0%	325.0	100.0%
3-B	MP 408.85 - 430.4	1st Year (W-1)	W0	345.7	71.6%	--	0.0%	36.9	7.7%	--	0.0%	1.2	0.2%	98.9	20.5%	482.7	100.0%
3-C	MP 430.4 - 473.3	1st Year (W-1)	W0	724.9	63.9%	--	0.0%	18.3	1.6%	--	0.0%	15.3	1.4%	375.3	33.1%	1,133.8	100.0%
3-D	MP 473.3 - 473.8	1st Year (W-1)	W1	12.0	65.6%	--	0.0%	--	0.0%	--	0.0%	0.1	0.3%	6.2	34.1%	18.3	100.0%
3-E	MP 473.8 - 489.4	1st Year (W-1)	W1	9.9	88.3%	--	0.0%	--	0.0%	--	0.0%	0.5	4.8%	0.8	6.9%	11.2	100.0%

Construction Spread/Section				Pedestrian Survey		Vehicle Survey		Aerial Survey		Marine Survey		Desktop Survey		Unsurveyed		Total Acres	Total Percentage
Spread/Section	Milepost Range	Start of Construction	Pipe Lay Season	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage	Acres	Percentage		
3-F	MP 489.4 - 498.6	1st Year (W-1)	W1	143.4	62.3%	--	0.0%	2.6	1.1%	--	0.0%	2.0	0.8%	82.3	35.7%	230.2	100.0%
3-G	MP 498.6 - 520.84	1st Year (W-1)	W1	89.9	33.7%	3.6	1.4%	12.8	4.8%	--	0.0%	0.7	0.3%	159.9	59.9%	266.9	100.0%
3-H	MP 520.84 - 531.97	1st Year (S-1.5)	S0.5	48.5	17.2%	29.4	10.4%	--	0.0%	--	0.0%	1.2	0.4%	202.8	72.0%	281.9	100.0%
3-K	MP 537.15 - 544.31	1st Year (W-1)	W-1	--	0.0%	--	0.0%	--	0.0%	--	0.0%	--	0.0%	1.8	100.0%	1.8	100.0%
3-L	MP 544.31 - 567	1st Year (W-1)	S0.5	30.1	11.7%	8.6	3.3%	3.5	1.4%	--	0.0%	4.4	1.7%	211.2	81.9%	257.8	100.0%
3-M	MP 567 - 607.5	2nd Year (W0)	S1.5	131.5	32.3%	6.5	1.6%	24.4	6.0%	--	0.0%	2.7	0.7%	242.5	59.5%	407.6	100.0%
4-A	MP 607.5 - 666	1st Year (W-1)	S0.5	241.6	48.3%	9.9	2.0%	16.9	3.4%	--	0.0%	5.3	1.1%	226.0	45.2%	499.8	100.0%
4-B	MP 666 - 706	1st Year (W-1)	W0	261.0	45.5%	5.5	0.9%	154.8	27.0%	--	0.0%	23.6	4.1%	129.3	22.5%	574.1	100.0%
4-C	MP 706 - 746	1st Year (W-1)	W1	240.6	45.5%	--	0.0%	49.5	9.4%	--	0.0%	0.5	0.1%	238.1	45.0%	528.7	100.0%
4-D	MP 746 - 766.3	2nd Year (W0)	S1.5	105.0	34.9%	--	0.0%	2.2	0.7%	--	0.0%	8.3	2.8%	185.8	61.7%	301.2	100.0%
4-E	MP 793.4 - 806.57	2nd Year (W0)	S1.5	0.3	0.6%	--	0.0%	--	0.0%	--	0.0%	0.0	0.0%	44.7	99.4%	45.0	100.0%
PTTL	PTTL	3rd Year (W)	W	0.3	0.1%	--	0.0%	317.1	96.4%	--	0.0%	--	0.0%	11.4	3.5%	328.8	100.0%
Grand Total				6,326.4	48.6%	419.6	3.2%	2,355.0	18.1%	87.7	0.7%	951.2	7.3%	2,874.0	22.1%	13,014.0	100.0%

Notes:
Off-ROW Components include Gas Treatment Plant (GTP), Liquefaction Facility, Access Roads, Camps, Pipe Storage Yards, Borrow Sources, Disposal Sites, Mainline MOF, DJ Yards and Railroad Pads/Sidings.
Based on Alaska LNG project footprint, Mainline Rev D and PTTL Rev D, includes all acreage required for construction.
Acreage for Mainline Meter Stations within the GTP and LNG Facilities, and for Block Valves and Compressor Station Camps within Compressor Station Facilities is set to 0.00 acres.
Numbers in this Off-ROW table include both alternate and primary material sites, some of which are expected to be deleted from the project footprint and the direct APE during final design.
Numbers are rounded to one decimal place.

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6.2. Inventory Completion

6.2.1. *Level of Effort*

The implementing regulations for Section 106 require federal agencies to make a reasonable and good faith effort to identify historic properties within the APE that may be affected by undertakings they sponsor, assist, or authorize. The federal agency must consider certain factors to ensure the inventory effort is both reasonable (in terms of intensity and scale) and carried out in good faith through development and execution (ACHP 2011). The CRMP includes protocols intended to meet the reasonable and good faith standard for the identification of multiple resource categories, including: historic, protohistoric, ethnographic (including TCPs), and archaeological resources. Inventory methods for these resource types vary but will be consistent with the SOI's Standards for Identification (48 FR 44716-42, September 29, 1983). Information on the likely presence and locations of these resources will be compiled to inform the data gap analysis and sensitivity model, which will guide the location and intensity of inventory activities within the APE.

6.2.1.1. Sensitivity Model

The objective of the site sensitivity model is to assist in the development of survey strategies by helping identify areas of high potential for cultural resource sites within the Project area. This is best achieved by implementing a model approach that is:

1. Based on the site sample locational data as recorded in the AHRS database;
2. Designed to operate at the level of resolution available with the ability to add model iteration and testing post-survey;
3. Applicable to both protohistoric and prehistoric cultural resources;
4. Indicative of high-, medium-, and low-potential areas for the presence or absence of cultural resources;
5. Able to account for under-reported areas, as well as areas typically assumed to contain sites; and
6. Able to provide planning information for areas of sensitivity for site occurrence.

The sensitivity model divides the survey area into areas of generally high, medium, and low potential. The model does not predict site location but establishes different field survey methods based on archaeological potential. Use of a model provides an efficient way to survey large project areas by focusing survey efforts in the most critical environments and obtaining a high rate of site identification while obviating the need for a 100 percent ground survey of the entire Project area.

The Alaska LNG sensitivity modeling uses environmental variables to assess site location potential. The model inputs include independent variables in the form of geographic information systems (GIS) thematic layers and geomorphic and other derivative variables along with dependent variables in the form of known site locations and site type distributions, as well as a comparative data set of random points. The model outputs are experimental vector data which are translated into physical maps of areas showing

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high-, medium-, and low-potential areas for the discovery of cultural resources within the Alaska LNG study area.

GIS software was used to develop the model for projecting high-, medium-, and low-potential areas for the location of prehistoric to pre-Gold Rush era (before 1880 A.D.) cultural resource sites in the project study area. More recent sites, Gold Rush era and post-Gold Rush era (1880 to 1960 A.D.) resource sites, typically have ethnographic and/or historic data pertaining to probable site locations.

6.2.1.2. Direct APE

Remaining unsurveyed acreage in the direct APE will be surveyed based on the sensitivity analysis, as determined by recent cultural resources sensitivity modelling (AKLNG 2014, AGDC 2018b), including surveys of:

- 100% of high-potential areas;
- 50% of moderate-potential areas; and
- 10% of low-potential areas.

Previously identified subsurface sites for which site boundaries have yet to be delineated (as identified through data gap analysis) will undergo site delineation. Section 6.2.3, Inventory and Survey Methods, summarizes the standards for documentation, collection and curation, and in-field artifact analyses during implementation of the inventory.

6.2.1.3. Indirect APE

Reasonable and good faith effort for identification of historic properties within the indirect APE will focus on those cultural resource types which may be adversely impacted by indirect project effects. Potential adverse effects in the indirect APE may result from (but are not limited to) changes to vegetation, vibration, increased access, or visual and audible factors. It is unlikely that subsurface cultural resources will suffer the adverse impacts anticipated within the indirect APE. Areas identified for ground-disturbing activities (including site preparation activities such as vegetation clearing, grading, and placement of fill) have been included in the direct APE. AGDC or its contractors will conduct inventory survey within 500' of the direct APE (this corresponds to the avoidance buffer discussed in Section 7.1) as described below.

For areas within 500' of the direct APE AGDC or its contractors will conduct survey for surface sites/resources, delineation of previously-documented sites, and limited subsurface testing based on results of the sensitivity model. Pedestrian survey for surface resources will include 100% of high-potential and 50% of moderate -potential areas. Previously identified subsurface sites for which site boundaries have yet to be delineated (as identified through data gap analysis) will undergo site delineation to ensure the sites do not extend into areas of expected ground-disturbing activities. Decisions to conduct subsurface survey within 500' of the direct APE will be left to the discretion of the Project archaeologist and described in the Annual Fieldwork Report. Discretionary subsurface survey is primarily recommended in high-potential areas situated very close to the direct APE, including high-potential landforms in survey areas otherwise considered to be low-potential. AGDC recognizes that Alaska-specific archaeological

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experience is an important factor in allowing the crew to make informed judgements regarding discretionary subsurface testing. In the event that the field crew lead responsible for making such decisions does not have at least six months of Alaska-specific archaeological experience, AGDC will work with SHPO to determine how best to address shovel testing decisions during pedestrian survey.

Within the indirect APE, AGDC or its contractors will conduct pedestrian survey of high probability areas within 500' of project components (this corresponds to the avoidance buffer discussed in Section 7.1). Historic properties within the direct APE that can be avoided will be given a 500-foot buffer, or a buffer as otherwise agreed with the Consulting Parties through the consultation process for minimization or treatment of historic properties. Inventory and/or monitoring may be required for some aboveground resources such as historic buildings, structures, trails or other transportation features, and ethnographic resources (described below). AGDC will make recommendations for survey within the indirect APE beyond 500' in the Annual Work Plan. Recommendations will be based on the expected nature/extent of indirect and cumulative impacts and guided by information collected as part of consultation and the data gap analysis.

Additionally, further consultation, archival research, and consideration of ethnographic data may result in the need for additional field inventory efforts within portions of the APE to identify and document ethnographic resources.

6.2.1.4. Special Consideration for Inventory of Ethnographic Resources

Tribes have a special expertise in evaluating historic properties that may have religious and/or cultural importance to their communities. AGDC will seek to identify and document ethnographic resources and traditional cultural properties through consultation. Specific methods and level of effort for collecting data on traditional cultural properties and ethnographic resources will be determined through consultation with the tribe(s).

AGDC has identified tribes with a potential interest in the Project area, including tribes that currently or historically have occupied or used parts of the APE. Although AGDC has conducted ongoing outreach to stakeholders, including tribes, efforts to identify properties of cultural or religious importance to tribes will require specific outreach efforts. AGDC will seek to hold at least one meeting with each tribe and recognizes that the inventory of TCPs and ethnographic resources will likely be an iterative process.

AGDC will invite tribes to engage in consultation via letter (which may be delivered electronically and/or in hard copy). These invitations will include the following:

- a Project outline including FERC's role as the lead agency;
- a description of AGDC's role with clarification that FERC has not delegated government-to-government consultations with the tribe(s);
- a description of FERC's role, clarifying that the regulations for implementing Section 106 (36 CFR 800) allow AGDC or contractors to gather information, but FERC would be responsible for all determinations required pursuant to Section 106;

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- a description of the Project, including the project name, a summary of the facilities, a Project map and a map of the area;
- a description of the Project status and schedule;
- a request that the tribe provide comments about the project to AGDC, appropriate survey boundary, identification/survey methodology, information regarding traditional cultural properties in the area, and areas of importance to the tribe (which may include resources that are may not meet the definition of historic properties);
- a request for comments on the research design/survey strategy and the potential for the project to affect historic properties, including religious or cultural properties of importance to the tribes;
- contact information for AGDC should tribes wish to provide comments or accept the meeting invitation; and
- contact information for the FERC project manager and tribal coordinator, should tribes wish to contact FERC directly or request government-to-government consultation.

If no response is received within 30 days, AGDC will follow up with telephone and/or email to ensure that the appropriate tribal representative(s) received the request. These follow-up communications should seek to clarify whether the tribe is interested in providing more information or has no comments at that time.

If tribes agree to hold consultation meetings, the meetings may be held in-person and/or electronically/telephonically. AGDC will avoid scheduling meetings where it would be difficult for Tribal members to attend or at times that would conflict with subsistence activities or Tribal events. AGDC will work with the Tribal Administrator or designated point of contact to determine the most appropriate date, time and location to meet with the tribe. Generally, AGDC will facilitate the meetings according to the following guidelines:

- AGDC will prepare and distribute meeting information to tribes in advance of the meeting, factoring in the amount of time for a package to reach the village if sending hard copies;
- AGDC will ask Tribal leadership if they wish to have certain tribal members open and close the meeting (e.g., give a traditional welcome or thank you);
- AGDC will clearly explain what the meeting is about and why, including which laws and regulations must be considered, and the decisions Consulting Parties must make regarding cultural resources;
- AGDC will ask for permission to take any photos or voice recordings;
- AGDC will ask whether any information the tribe has chosen to share is confidential, and ensure it is kept confidential to the extent possible within the regulations; and
- AGDC will identify any notes taken and share completed notes (or transcripts, if the meeting is transcribed), with the meeting participants to ensure that Tribal views or concerns were accurately captured.

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AGDC will be sensitive to tribal communication protocols for sharing information about properties of traditional religious and cultural importance. Moreover, AGDC recognizes that tribes may not be willing to share sensitive information outside of a government-to-government consultation. If AGDC learns that a tribe wishes to conduct government-to-government consultation with FERC, AGDC will share FERC contact information with the tribe, and notify the FERC Project Manager or Tribal Coordinator so FERC staff know to contact the tribe. Alternatively, the tribe may directly request government-to-government consultation with FERC by emailing TribalRelations@ferc.gov.³ Tribes may also file comments/letters in the Docket.

If tribes do not wish to provide information or express concerns pertaining to culturally sensitive areas or locations and/or do not wish to participate as Consulting Parties or ethnographic sources for implementation of the CRMP, AGDC will thoroughly document efforts made to consult with tribes. Records including copies of correspondence, records of telephone communications, contact details, dates of attempted communications, and supporting documentation from background research will help to document the good faith effort undertaken by AGDC, on behalf of FERC, with regards to inventory of ethnographic resources in the direct and the indirect APE.

AGDC will report progress on this work in the annual PA report, and results of the inventory will be included in the Annual Fieldwork Report. AGDC will submit documentation to the Consulting Parties and tribes following implementation and completion of any on-site mitigation efforts (see Sections 7 and 8 for mitigation discussion and reporting requirements, respectively). If ethnographic resources are identified, they will be treated to the same process of evaluation and assessment of effects as other cultural resources. If no ethnographic resources have been identified, AGDC will submit documentation of efforts to consult with tribes, and any supporting background research, as part of the Annual Fieldwork Report(s).

Continued consultation efforts will be ongoing and concerns may be raised at any time. If no concerns are raised by tribes prior to the start of ground-disturbing activities, FERC may consider this requirement fulfilled for a particular spread.

6.2.2. Data Gap Analysis

As noted in Tables 4 and 5, archaeological survey has been completed for the majority of the direct APE. The application of specialized survey methods, such as deep-testing and metal detecting, will be further examined in the data gap analysis. Known remaining archaeological survey to be done in the direct APE is generally in small, distributed parcels. Areas within the direct APE which have yet to be surveyed are shown in red in Appendix B.

For the direct APE, unsurveyed areas have already been subject to sensitivity analysis (AKLNG 2014b, AGDC 2018b). These sensitivity analyses (described in more detail in Section 4.1.1 and 6.2.1) considered known site locations, land cover, slope, surface geology, soils, distance to water, distance to trails, and wildlife distributions. AGDC will employ these sensitivity analyses to conduct field investigation of

³ Tribes may also contact FERC Tribal Liaison Liz Molloy (202-502-8771 or elizabeth.molloy@ferc.gov) or Gas Tribal Outreach Coordinator Eric Howard (202-502-6263 or eric.howard@ferc.gov).

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remaining high-potential areas within the direct APE (including pedestrian transect surveys with systematic shovel testing of previously un-surveyed areas).

Known archaeological survey requirements within the direct APE include roughly 3,500 acres. A sketch of survey and inventory targets for each construction spread is presented in Table 6.⁴ Note that the project footprint for direct APE acreage represented in Table 6 includes both primary and alternate material sites, and it is expected a number of those sites will be dropped from project plans during final design. This schedule allows for survey completion at least one year prior to start of construction in a given construction spread (including ROW clearance and preparation, and installation of work pads, as necessary).

⁴ This schedule is preliminary and subject to change.

Table 6. Survey Targets for Direct APE by Landowner

				Unsurveyed (Acres), By Landowner									Latest Proposed Survey Start
Rev D Spread-Section	Location	Start of Construction	Pipe Lay Season	Federal	State of Alaska	Municipal / Borough	Mental Health Trust	Native Allotment	ANCSA Conveyance	University of Alaska	Private/ Private Corp.	ARRC	
GTP	GTP	Pre-Mainline	N/A	--	35.50	--	--	0.24	--	--	--	--	S-2.5
PBTL	PBTL	Pre-Mainline	N/A	--	--	--	--	--	--	--	--	--	N/A
LNG	LNG	Pre-Mainline	N/A	--	10.42	49.77	--	--	--	--	289.88	--	S-2.5
1-A	MP 0 - 56.63	2nd Year (S-0.5)	W1	--	53.85	--	--	--	--	--	1.13	--	S-2.5
1-B	MP 56.63 - 114.74	2nd Year (S-0.5)	S1.5	--	24.29	--	--	--	--	--	--	--	S-2.5
1-C	MP 114.74 - 166.24	1st Year (W-1)	W2	51.27	19.38	--	--	--	--	--	--	--	S-2.5
1-D	MP 166.24 - 168.68	4th Year (Early S1.5)	W2	4.64	--	--	--	--	--	--	--	--	S-0.5
1-E	MP 168.68 - 170.25	3rd Year (S0.5)	S2.5	--	--	--	--	--	--	--	--	--	S-1.5
1-F	MP 170.25 - 177.76	3rd Year (S0.5)	S2.5	3.86	--	--	--	--	--	--	--	--	S-1.5
1-G	MP 177.76 - 182.14	2nd Year (W0)	W2	1.07	--	--	--	--	--	--	--	--	S-1.5
1-H	MP 182.14 - 208.88	2nd Year (W0)	S2.5	4.73	--	--	--	--	--	--	--	--	S-1.5
2-A	MP 208.88 - 228.86	1st Year (W-1)	W1	5.09	--	--	--	--	--	--	--	--	S-2.5
2-B	MP 228.86 - 241.09	1st Year (W-1)	W1	1.42	10.48	--	--	--	--	--	--	--	S-1.5
2-C	MP 241.09 - 251.23	1st Year (W-1)	W1	0.96	3.91	--	--	--	--	--	--	--	S-2.5
2-D	MP 251.23 - 281.44	2nd Year (S-0.5)	S1.5	15.69	--	--	--	--	--	--	--	--	S-2.5
2-E	MP 281.44 - 314.93	2nd Year (S-0.5)	S1.5	5.25	--	--	--	--	--	--	--	--	S-2.5
2-F	MP 314.93 - 326.73	2nd Year (S-0.5)	S1.5	0.19	--	--	--	--	--	--	--	--	S-2.5
2-G	MP 326.73 - 340.33	2nd Year (S-0.5)	S1.5	0.71	--	--	--	--	--	--	--	--	S-2.5
2-H	MP 340.33 - 347.86	2nd Year (S-0.5)	S1.5	0.07	--	--	--	--	--	--	--	--	S-2.5
2-I	MP 347.86 - 355.86	2nd Year (S-0.5)	W2	24.59	--	--	--	--	--	--	--	--	S-2.5
2-J	MP 355.86 - 376.44	2nd Year (S-0.5)	S2.5	--	15.77	--	--	--	--	--	--	--	S-2.5
2-K	MP 376.44 - 382.34	2nd Year (W0)	W2	--	15.53	--	--	--	--	--	--	--	S-1.5
2-L	MP 382.34 - 400.75	2nd Year (W0)	S2.5	--	6.34	--	--	--	--	--	--	--	S-1.5
3-A	MP 400.75 - 408.85	1st Year (W-1)	W0	--	9.80	--	--	--	--	--	0.02	--	S-2.5
3-B	MP 408.85 - 430.4	1st Year (W-1)	W0	--	99.07	--	--	--	--	--	--	--	S-2.5
3-C	MP 430.4 - 473.3	1st Year (W-1)	W0	0.00	324.99	0.60	30.16	--	2.21	--	33.76	12.17	S-2.5
3-D	MP 473.3 - 473.8	1st Year (W-1)	W1	--	0.93	3.43	0.80	--	1.36	--	0.00	--	S-2.5
3-E	MP 473.8 - 489.4	1st Year (W-1)	W1	--	1.37	--	0.00	--	--	--	--	--	S-2.5
3-F	MP 489.4 - 498.6	1st Year (W-1)	W1	--	67.11	1.30	--	--	--	--	--	13.88	S-2.5
3-G	MP 498.6 - 520.84	1st Year (W-1)	W1	--	62.87	73.20	--	--	--	6.42	17.88	--	S-2.5
3-H	MP 520.84 - 531.97	1st Year (S-1.5)	S0.5	--	41.13	28.38	--	--	--	--	8.21	140.08	S-2.5
3-IJ	MP 531.97 - 537.15	1st Year (W-1)	W-1	0.03	36.87	--	--	--	--	--	0.13	0.54	S-2.5

				Unsurveyed (Acres), By Landowner									Latest Proposed Survey Start
Rev D Spread-Section	Location	Start of Construction	Pipe Lay Season	Federal	State of Alaska	Municipal / Borough	Mental Health Trust	Native Allotment	ANCSA Conveyance	University of Alaska	Private/ Private Corp.	ARRC	
3-K	MP 537.15 - 544.31	1st Year (W-1)	W-1	15.11	7.19	6.97	--	--	--	--	--	1.27	S-2.5
3-L	MP 544.31 - 567	1st Year (W-1)	S0.5	3.86	1.07	--	--	--	290.24	--	0.77	--	S-2.5
3-M	MP 567 - 607.5	2nd Year (W0)	S1.5	23.84	50.36	--	--	--	128.25	4.22	11.67	97.93	S-1.5
4-A	MP 607.5 - 666	1st Year (W-1)	S0.5	0.81	207.65	21.13	--	--	--	--	0.62	4.96	S-2.5
4-B	MP 666 - 706	1st Year (W-1)	W0	--	118.80	1.42	--	--	--	2.24	10.70	1.89	S-2.5
4-C	MP 706 - 746	1st Year (W-1)	W1	--	107.35	0.03	--	--	--	--	144.80	--	S-2.5
4-D	MP 746 - 766.3	2nd Year (W0)	S1.5	--	71.79	20.53	8.03	--	132.57	--	0.00	--	S-1.5
Offshore	MP 766.3 - 793.4	4th Year (Offshore)	S	--	--	--	--	--	--	--	--	--	S0.5
4-E	MP 793.4 - 806.57	2nd Year (W0)	S1.5	--	0.25	5.98	--	--	38.94	--	113.58	--	S-1.5
PTTL	PTTL	3rd Year (W)	W	--	214.19	1.62	--	--	--	--	1.45	--	S-0.5
Grand Total				163.19	1,618.27	214.34	38.99	0.24	593.55	12.88	634.59	272.73	3,548.78
<div>a - Start of ROW Construction Season = Construction season when ROW clearing and preparation activities begin. This may include the installation of work pads, if applicable. ROW Construction activities will be continuous through the Pipe Lay Season.</div> <div>b - Pipe lay season = Construction season when pipe laying activities take place.</div> <div>W0 = “winter zero” – the first winter of pipe lay;</div> <div>W1 = “winter one” – the second winter of pipe lay;</div> <div>W2 = “winter two” – the third winter of pipe lay;</div> <div>S0.5 = “summer zero point five” – the summer between W0 and W1;</div> <div>S1.5 = “summer one point five” – the summer between W1 and W2;</div> <div>S2.5 = “summer two point five” – the summer after W2</div>													

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6.2.2.1. Targets for Remaining Survey and Ongoing Outreach

In indirect APE areas not previously surveyed and not previously included in a sensitivity analysis, AGDC will complete an updated data gap and sensitivity analysis to determine locations and priorities for additional survey. This analysis will also focus on AGDC's ongoing efforts to identify cultural landscapes and properties of traditional and cultural importance to tribes. The resulting data gap analysis will include:

- Discussion of key cultural resource data sources and assessment of their reliability, suitability, adequacy, applicability, and completeness with respect to the Project, such as:
 - Databases of known prehistoric, protohistoric, and historic sites
 - Databases for shipwrecks
 - Pleistocene/Holocene geology
 - Documented geomorphic features
 - Review of archival materials and previous ethnographic, traditional knowledge, and historic studies
- Discussion of the nature, scale, and location of areas where data gaps exist and priorities for data acquisition in these areas
- Recommendations for outstanding field, archival, and ethnographic data acquisition and analysis
 - Survey methods including but not limited to field survey and traditional knowledge interviews (as agreed to in consultation with tribes)
 - Survey targets based on most current Project schedule/timeline

AGDC will either prepare one overall data gap analysis for the project or will complete the data gap analysis by Construction Spread (in each case, within six months of FEED for each Construction Spread), depending on project timing and funding. Consulting Parties will have 30 calendar days to review and provide comment on each data gap analysis. AGDC will consider and address comments as necessary and make revisions within 30 calendar days of the closure of the comment period and submit to FERC and the Consulting Parties for final approval within 15 days. If no comments are received within the 30-calendar day review period, the data gap analysis will be considered complete. Once complete, the text of the data gap analysis will be incorporated into the CRMP as an appendix to guide inventory targets for that construction spread.

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6.2.3. Inventory and Survey Methods

This section describes the minimum standards for field methods that will be used to document cultural resources during future identification efforts in the APE, per the requirements set forth in the PA in Stipulation VI. This section describes testing and documentation standards, in-field artifact analyses and protocols, and artifact collection and curation requirements.

6.2.3.1. Field Survey

Field methods will follow federal and state standards and guidelines for conducting and reporting field surveys (48 FR 44716-42, September 29, 1983; OHA 2018). Crews will record field data on standardized field forms, in notebooks, with photographs, and collect geospatial data with mapping-grade GPS units. Field methods will include aerial/vehicular survey (low intensity) and pedestrian survey (high intensity).

Aerial/vehicular survey consists of inspection of an area using aerial (fixed-wing or rotary-wing) or vehicular (truck or ATV) methods and is most applicable in areas where topography and/or vegetation cover suggest the area has a low or medium likelihood of containing cultural resources. Areas of the APE with a low likelihood of containing cultural resources include wetlands or perennially inundated areas, previously disturbed locations, and areas where the slope exceeds 15 percent. Survey documentation for aerial/vehicular investigations will consist of photographs of the conditions of the areas, GPS data which details the areas investigated by method type, and field notes that describe the overall conditions and cultural resource potential of the area. If, during aerial or vehicular survey, an area of high potential for containing cultural resources is identified, that location will be investigated via pedestrian survey (e.g., high intensity) methods.

Pedestrian survey consists of visual surface inspection and shovel testing, where topography, vegetation cover, viewshed, or other factors suggest high potential for the occurrence of cultural resources. These areas may include elevated/overlook areas, high site density areas, areas of stable geomorphic conditions, relict river and stream terraces, and areas where the slope is less than 15 percent. If archaeological sites and/or historic resources are identified during initial pedestrian survey and shovel testing of an area, further investigation and data collection may be required at the location to collect sufficient information to make a recommendation regarding NRHP eligibility (e.g., excavation units, intensive subsurface sampling). Site recordation includes but is not limited to: site description and characteristics captured on hard copy forms and electronic forms, sample/artifact collection, documentation of subsurface testing and results, and photographic documentation. GPS units will be used to record geospatial site data, such as: preliminary site boundaries, shovel test results and locations, test unit results and locations, surface artifact locations, and prominent environmental features (as applicable).

6.2.3.2. Historic Resources

Inventory of historic resources during fieldwork will include identification and documentation of diagnostic or potentially diagnostic artifacts; horizontal stratigraphy documentation for large surface sites; identification of container shapes, sizes, lithography, embossing, or other key dating/manufacturing information; identification of artifacts that provide information on a site's primary function and/or periods

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of occupation; and notes/documentation of the physical condition and integrity of each resource. For buildings or structures, sufficient information will be sought to complete the AHRS Building Inventory form. If the building or structure is a ruin, it will be recorded on a standard AHRS site form. Documentation will include site boundary delineation.

GPS points will be collected at discrete features of buildings or structures, and polygons around the footprint (if larger than 2 meters in diameter). GPS lines will be recorded along roads, ditches, fences, or other linear features.

Field crews will use the Alaska Historic Buildings Survey Manual and Style Guide (OHA 2016) to document buildings and structures. The Alaska Architectural Study Guide will be used as a tool for identifying and evaluating architectural styles. Documentation of mining properties will follow the NRB 42 *Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties* (NPS 1997b). Other guidance or NRB will be used as applicable.

6.2.3.3. Ethnographic Resources and TCPs

Potentially undocumented places that are significant to Alaska Native heritage but lack physical expressions of land use are best identified and assessed through consultation with local and regional tribal and municipal governments and Alaska Native corporations, as well as other community members. AGDC's efforts thus far to consult with these entities (see Appendix H) have not resulted in expressed concerns for impacts to specific cultural resources within the Project APE.

Information for ethnographic cultural resources and TCPs will primarily be collected through outreach and consultation as described in Sections 3.2 and 6.2.1.4. Background research into previous studies may assist the compilation of place names, but the primary resource for ethnographic information should be the communities and traditional knowledge holders for whom sites, viewsheds, or landscapes hold particular value. Once the decision is made to enter into FEED for a particular spread, AGDC will proceed with tribal outreach as described in Section 6.2.1.4.

Tribes may provide sufficient information about TCPs or ethnographic resources to evaluate their significance and determine effects through the consultation process, without the need for additional studies. If this is the case, AGDC will complete the documentation necessary to complete the inventory and evaluation. If additional research is required, AGDC will consult with tribes to determine the types of ethnographic properties or TCPs that may be present within the APE and the appropriate documentation methods to record them. Methods for collecting ethnographic information may include, but are not limited to, archival research, oral interviews, field visits and GIS mapping of placenames or use areas. AGDC, and consultants working on their behalf, will be sensitive to the communication protocols in the various communities. As mentioned in Section 3.2s and 6.2.1.4, consultation with tribes is a collaborative process, and it is therefore beneficial to work with each village/community to determine the best method(s) for interaction.

Tribes and traditional knowledge holders may not wish, or may not be able, to provide details sufficient to evaluate a site's significance. If this is the case, supplemental research may be required to consider and evaluate ethnographic sites and TCPs.

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6.2.3.3.1. Traditional Land Use Inventory

A subset of the NSB's TLUI within the Project vicinity is being requested from the NSB Department of Iñupiat History, Language and Culture to identify ethnographic resources and TCPs on the North Slope. The TLUI is the primary source of information regarding Iñupiat traditional use areas. In addition, AGDC will pursue information through consultation with the local and regional tribal and municipal governments and Alaska Native corporations as described in Section 3.2.

6.2.3.4. Collection and Curation

Any materials collected as a result of implementing this CRMP, and not subject to NAGPRA, are the property of the applicable state or federal land-managing agency, or landowner if collected from privately owned property. On federal lands, any human remains, funerary objects, sacred objects, or objects of cultural patrimony, as defined in 43 CFR 10.2(d), will follow disposition to lineal descendants or tribe(s), following the procedures set forth in 43 CFR 10, Subpart B.

Pursuant to 36 CFR 79.7(b) and applicable permit(s), AGDC will assume costs associated with the curation of any federal, state, or privately-owned materials collected under work conducted as part of the Project. Curation costs may include, but are not limited to, curation fees charged by approved institutions, acquisition of archival materials, shipping, cleaning, rehousing, and other conservation actions determined necessary by the repository or considered common/ethical practice by cultural resources professionals.

AGDC will curate materials collected from federal lands, not subject to the provisions of the NAGPRA, in accordance with 36 CFR 79. AGDC will submit all materials from BLM lands for curation at the University of Alaska Museum of the North (UAM) in Fairbanks, Alaska. During the permitting process, AGDC will establish a provisional curation agreement with the UAM for collections, which AGDC will finalize prior to submission of collections to the UAM. Artifacts recovered from Denali National Park and Preserve will be curated in the Park's collection.

Collections made on state land will comply with AS 41.35.020. AGDC will submit materials from state lands for curation at the UAM. During the State permitting process, AGDC will establish a provisional curation agreement with the UAM for collections, which AGDC will finalize prior to submission of collections to the UAM.

AGDC, and any contractors hired on their behalf, will be responsible for submitting materials recovered from state and/or federal lands to the UAM or Denali National Park and Preserve, as appropriate, within one year following completion of the fieldwork that generated the collection. All collections will be curation-ready, as determined by UAM or Denali National Park and Preserve requirements. Prior to disposition, AGDC, and contractors hired on their behalf, will safeguard all materials from theft or damage by providing appropriate interim storage facilities and conservation actions, consistent with the requirements in 36 CFR 79.9. AGDC shall consult with UAM and Denali National Park and Preserve staff regarding interim storage facilities and necessary conservation actions to be consistent with 36 CFR 79.9 (b)(4). Within 30 days following disposition, AGDC will provide the BLM, NPS, and SHPO with accession records and documentation associated with the transfer and curation of materials.

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For collections recovered from private lands, AGDC will work with private landowners to arrange for the disposition of materials. AGDC will provide private landowners with information on the value of curation and will assume costs of curating the materials at UAM consistent with 36 CFR 79 should a private landowner wish to donate the materials collected from their land.

AGDC will provide written documentation to the FERC staff and the SHPO if the landowner will not relinquish control through donation. In the event that the landowner will not relinquish control of materials, extra documentation (e.g., additional photography, more detailed measurements) may be requested. Curation and/or reburial support can be provided to private landowners consistent with and not to exceed the standards set at 36 CFR 79.

6.3. NRHP Evaluations

Evaluating cultural resources for eligibility for listing in the NRHP is a key part of the Section 106 process. Resources that are determined to be eligible for listing in the NRHP by meeting the criteria set forth at 36 CFR 60.4 are considered “historic properties” and therefore any adverse effects to those properties that could result from Project activities must be resolved through avoidance, minimization, or mitigation. Cultural resources that are not determined eligible for listing in NRHP are no longer considered in the Section 106 process. Per 36 CFR 800.4(c) and 36 CFR 60.4, FERC will ensure that AGDC, or contractors hired on their behalf, evaluate all identified cultural resources within the direct APE and make recommendations regarding their eligibility for listing in the NRHP via a determination of eligibility (DOE). Evaluation of resources in the indirect APE will be undertaken as described in Section 6.3.2.

6.3.1. Evaluation Criteria

NRHP evaluations will follow 36 CFR 60.4 and NPS guidance (NPS 1997a, 1998) or other National Register guidance as appropriate. For a property to be eligible for listing on the NRHP, it must meet one or more of the Criteria for Evaluation by being associated with an important historic context *and* retaining historic integrity of those features necessary to convey its significance. Typically, a property must be at least 50 years old, and sites can be considered eligible for local and regional significance, as well as national significance. The Criteria for Evaluation are described in NPS guidance (1997a) and are outlined below:

- Criterion A: Association with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: Association with the lives of persons significant in our past; or
- Criterion C: Embodiment of the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the four Criteria, a historic property must also possess one or more aspects of integrity: location, design, setting, materials, workmanship, feeling, or association.

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6.3.2. Determinations of Eligibility (DOE)

AGDC will consider both individual and district-level eligibility. Resources of a similar nature may be evaluated as a multiple property listing or as a district to create more efficiencies in the process. When considering DOE recommendations for these resource types, it is also important to consider their cumulative significance as historic districts.

AGDC will conduct desktop evaluations of previously documented sites in the direct APE and indirect APE within 500' avoidance buffer for which there has been no DOE. When data is sufficient for a recommendation, AGDC will provide an evaluation report with eligibility recommendations to FERC and SHPO (and other land managing agencies for sites within their jurisdiction) for documented sites in the direct APE and indirect APE within the 500' avoidance buffer. The evaluation report will include updated site forms outlining recommendations of eligibility to the NRHP with existing data to support such a recommendation. The objective of the report is to facilitate timely FERC, SHPO, BLM, and NPS review of sites where there is currently sufficient data for deriving sound eligibility recommendations. This process will also highlight those sites requiring further field evaluation prior to recommendation of eligibility, AGDC shall incorporate recommendations on the need to complete additional fieldwork for DOEs on sites within the 500' avoidance buffer in the indirect APE into the annual work plan, which will be informed by the nature of the property, nearby project activities, and reasonably foreseeable events that may result from the project.

AGDC will evaluate unevaluated and DOE-pending sites within the direct APE and within the 500' avoidance buffer. Evaluations will include those discovered during completion of inventory. To date, this includes 17 unevaluated and 6 DOE-pending sites in the direct APE and 137 unevaluated and 9 DOE-pending sites in the indirect APE within the 500' avoidance buffer. Within the indirect APE, sites outside of the established 500' avoidance buffer will be treated as eligible for the NRHP for purposes of evaluating potential Project effects as noted below. The exception to this will be sites and/or locations that may be sensitive to the broader range of adverse effects including atmospheric or audible disturbances, or changes in landscape feeling, access, or use due to long-term Project activities. These sites will be identified through continued consultation as discussed in Section 6.2.1.4.

In order to assess effects on known resources outside of the 500' avoidance buffer, AGDC will assume that the properties are eligible for listing in the NRHP for the purposes of Section 106. If effects analysis indicates that adverse effects are possible to sites treated as eligible, then AGDC will follow the DOE process outlined in this section for properties within the direct APE and within the 500' buffer.

Evaluation status for all known sites within the Project APE is summarized in Table 7.

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Table 7. Count of NRHP Status for AHRs Sites in Direct APE and Indirect APE

Count of NHRP Status for AHRs Sites in Direct APE and Indirect APE				
NHRP Status	Direct APE	Indirect APE <= 500'	Indirect APE > 500'	Total Count
Determined Eligible	58	32	40	130
Determined Not Eligible	52	39	40	131
DOE Status Pending	6	9	2	17
National Historic Landmark	1	-	-	1
Treat as Eligible ¹	5	-	-	5
Unevaluated	17	137	522	676
Unevaluated/Exempt ²	2	-	-	2
Grand Total	141	217	604	962

For sites requiring field evaluation, AGDC will submit recommended NRHP determinations as part of the Annual Fieldwork Report (Section 8.2). If AGDC has not provided enough information to allow FERC to make a determination, FERC may require AGDC to conduct additional research or fieldwork to support determination recommendations. AGDC will submit NRHP recommendations to the FERC staff, the SHPO, the BLM, the NPS, and tribes (and other interested parties as appropriate) for review and comment. The FERC must receive concurrence from the BLM and NPS (for resources under their jurisdiction) on the eligibility recommendations (PA IV.C) in addition to SHPO.

Appendix A of the CRMP will be updated annually to include changes in DOE status and addition/evaluation of newly documented sites.

6.4. Assessment of Effects

AGDC will submit proposed assessments of effect to the FERC staff and the SHPO as well as to applicable landowners (BLM, NPS) and tribes (and other interested parties as appropriate) for known eligible sites in the direct APE and in the indirect APE within the 500' avoidance buffer (PA IV.C.iii). Documented sites outside of the 500' avoidance buffer will be treated as eligible for purposes of assessing project effects in the extended indirect APE. Proposed assessments of effect for known eligible sites and those being treated as eligible may be submitted without conducting fieldwork if sufficient information is available to make such assessments. For adversely effected historic properties, the assessment of effect will include recommended resolution measures. Assessments of effect (and recommended resolution measures) will be submitted following FEED for a given spread, or as noted below, as part of the Annual Fieldwork Report. The FERC will consider all timely comments received before consulting with the SHPO for final determinations of effect for the phased components addressed in the assessment of effect. The SHPO will have 30 days to respond to final effects assessments.

The Annual Fieldwork Report (Section 8.2) will provide a comprehensive description of the inventory, evaluation, assessment of effects and resolution implemented during that field season. Sites requiring further field evaluation will also be identified. Following the review and comment period for the Annual Fieldwork Report, FERC will consider, and AGDC will share with Consulting Parties all timely comments received before AGDC submits to SHPO a final finding of effect for the phased components addressed in that year's fieldwork report. For adversely effected historic properties, the assessment of effects will

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include recommended resolution measures. The SHPO will have 30 days to respond to final effects assessments.

If the project design changes in a way that could expand or alter the project footprint, or change project effects on historic properties, after a phased component completes the PA process, then AGDC/FERC will reassess the APE, identification, and effects finding including consultation with consulting parties and concurrence with SHPO on the finding of effects. If portions of the project are dropped entirely from the project footprint before work begins (for example, when an alternative material site is eliminated from potential project use), and there is no project effect, those portions of the project may be dropped from the APE and not subject to further evaluation or re-evaluation. Updates to the APE will be included as part of the Annual Agreement Report.

7. HISTORIC PROPERTIES TREATMENT AND MITIGATION

Cultural resources within the direct APE have the potential to be affected primarily by ground-disturbing⁵ activities associated with site preparation, Project construction, long-term operation and maintenance, and reclamation activities. Resources in the indirect APE could be affected by long-term visual, audible, and atmospheric changes introduced by the construction of aboveground permanent facilities, changes to vegetation from buried project components, or increased access to areas previously not easily accessed. AGDC shall not proceed on portions of the Project until the applicable provisions of the PA and this CRMP, including development and implementation of on-site measures of required treatment plans to resolve adverse effects, have been carried out for that location and AGDC has received notice to proceed from FERC (PA Stipulation I.D.).

As discussed previously, avoidance will be the preferred approach to identified cultural resources, through the establishment of a 500-foot construction buffer. AGDC will determine the feasibility of site avoidance in consultation with pipeline engineers and include a listing of historic properties proposed for avoidance in the Annual Cultural Resources Work Plan (see Section 8.1).

Until the specific properties that can be avoided are identified, AGDC will plan to implement minimization and mitigation as identified in detailed treatment plans (discussed further at 7.3.3). Recommendations for mitigation will depend largely on the type of historic property (e.g., prehistoric surface lithic scatter) and the nature of project effects to the property. A discussion of some property types, and associated mitigation strategies/actions is presented in Section 7.3.

AGDC will include approved avoidance, minimization, and treatment measures as part of the Annual Cultural Resources Work Plan (Section 8.1). Results of avoidance, minimization, and treatment implementation for each Construction Spread, including documentation of any treatment or other mitigation approaches at individual or groups of sites, will be submitted as part of the Annual Agreement and Annual Fieldwork Reports (Sections 8.4 and 8.2, respectively), unless special reporting requirements are identified as part of detailed mitigation/treatment plans. If special reporting requirements are

⁵ Ground-disturbing activities include activities such as removal of the vegetative mat, grading, trenching, earth-moving, blasting, and driving heavy equipment across a shallowly buried site.

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determined necessary, the treatment plan should include a schedule for completion, deliverables, and reporting timelines. This section of the CRMP describes steps and protocols to be followed to resolve adverse effects, as required by the PA Stipulation IV.D.

Avoidance, minimization, and treatment strategies submitted with the Annual Fieldwork Report and approved by PA Signatories will be documented in Appendix J of the CRMP annually. Appendix J will also document target completion dates/schedules and note where implementation has been completed.

7.1. Avoidance Measures

To the extent practicable, AGDC will implement measures to avoid and minimize adverse effects to historic properties (PA Stipulation IV.D.i). AGDC has sought to avoid impacts to cultural resources throughout project planning, and in some cases, has rerouted or realigned project components, abandoned proposed material sites, and moved the location of Project facilities to do so. Examples include modification of the direct APE to avoid culturally sensitive areas in the vicinity of Montana Creek, and the deletion of Access Road AR-BV-N-718.7, to avoid culturally sensitive areas near Redshirt and Cow lakes.

In general, avoidance will be the preferred treatment. Historic properties within the direct APE that can be avoided will be given a minimum 500-foot buffer, or a buffer as otherwise agreed with the Consulting Parties. The buffer will be placed from the outside edge of the historic property's boundary and marked for avoidance at least 15 calendar days prior to commencement of construction activities. Marking will be either physical flagging or a means of electronically identifying sites and will remain in place until construction activities have ceased in the area. Additionally, professionals meeting the appropriate qualification standards (PA Stipulation VI.A) may be required to conduct periodic site avoidance assessments during construction, through a series of drop-in site visits, to confirm marked areas are being avoided (see Section 7.2.2).

Following FEED, AGDC will determine the feasibility of site avoidance in consultation with pipeline engineers, include a listing of historic properties proposed for avoidance in the Annual PA Report, and update the Site Avoidance, Minimization, and Mitigation documentation in Appendix J of the CRMP.

7.2. Minimization Measures

The purpose of minimization efforts is to reduce adverse effects to historic properties. Minimization can be used to address direct, indirect and cumulative effects. Minimization measures may include, but are not limited to:

- Construction in winter when the ground is frozen and covered with a layer of snow sufficient to reasonably protect certain property types;
- Reconfiguration of workspaces, including staging areas;
- Employing dust control measures during certain times of year or at specific locations;
- Flagging and necking down of construction areas to avoid nearby sites;
- Providing training to contractors about avoidance of cultural resources;

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- Periodic site assessment; and
- Monitoring.

Appropriate minimization measures for properties of traditional religious or cultural significance to tribes will be determined through consultation including the affected tribes.

Minimization efforts to address visual, audible, and atmospheric effects to historic properties in the indirect APE will be included in the Annual Cultural Resources Work Plan and summarized for each Construction Spread. Additionally, AGDC may incorporate periodic site assessment (Section 7.2.2) of a subset of these properties (number and locations determined in consultation with appropriate Consulting Parties for each Construction Spread), to review the minimization measures and assess their efficacy in minimizing effects.

7.2.1. Monitoring

Monitoring is defined as active observation of earth-moving or other work that could adversely affect historic properties within the APE. Typical monitoring procedures, including stop work orders, pre-construction meetings, and cultural resources training, are described in Appendix I. Site-specific monitoring details, such as alterations to the standard monitoring process, addition of tribal observers (to be determined through consultation with tribes), locations wherein construction must be monitored by an SOI-qualified professional, and the type(s) of cultural material that may be encountered will be submitted as part of the Annual Cultural Resources Work Plan. A summary of monitoring results will be included in the Annual Fieldwork Report and Annual Agreement Report.

7.2.1.1. Pre-Construction Meeting

Cultural resource monitors shall attend the pre-construction meeting for each Construction Spread. The meeting shall be held annually prior to the commencement of ground-disturbing project activities with potential to affect historic properties. The pre-construction meeting shall also be attended by the Project Site Manager, crew supervisors, and contractors, as appropriate for the work. AGDC will also invite the corresponding landowner/manager(s) and/or their designated representatives to attend. The Project Site Manager, in cooperation with the Cultural Resource Monitor, will present the boundaries of the area(s) to be monitored, and explain the monitoring procedures and stop work authorities to the meeting attendees. Meetings may be conducted in person or electronically.

7.2.2. Periodic Site Condition Assessment

Some historic properties may be susceptible to disturbance after construction activities have been completed. For example, historic properties within 500' of the Project direct APE have potential to be adversely affected during Project operations, or by increased access or visitation. Historic properties for which potential adverse effects extend beyond Project construction may be considered for periodic site condition assessment during Project operations, maintenance, and/or reclamation activities. Where deemed necessary through consultation, AGDC will conduct periodic site condition assessments to identify disturbance to, or change in, the condition of historic properties. Site condition assessments will

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involve, at a minimum, a schedule of field visits to the historic property to check for signs of disturbance, including from vandalism and looting. The number and locations of periodic site condition assessments will be determined through the consultation process. AGDC will include any proposed periodic site condition assessments in the detailed treatment plans submitted to the Consulting Parties. Periodic site condition assessment activities undertaken in any given year will also be included as part of the Annual Cultural Resources Work Plan. Results of site condition assessments will be included in the Annual Fieldwork and Annual Agreement reports (see Sections 8.2 and 8.4, respectively). If unanticipated effects to historic properties are observed during the site condition assessments, then AGDC will include recommendations for the effect and the implementation of appropriate protection, avoidance, or mitigation measures for consideration by consulting parties consistent with Section 6.4 and Section 7, respectively.

7.2.3. Contractor Cultural Resource Awareness Training Program

AGDC will develop cultural resource awareness training materials, and provide training to applicable Project personnel, contractors, and subcontractors. The training will inform Project personnel of their responsibilities under the law, and clearly list procedures to follow in the event that previously undiscovered cultural resources are encountered. The training program will teach contractors and their employees:

- Legal context for cultural resources protection and applicable federal, state, and local laws;
- Why it is important to protect cultural resources;
- Penalties for disturbing cultural resources and human remains;
- How to recognize cultural resources they may come into contact with and cultural resources likely to be found in Project area(s);
- What to expect when working in the area of cultural resources (both those that are marked off and those that might be being monitored during construction);
- Monitoring procedures, including safety around heavy equipment, buffer areas, and hand signals between monitors and equipment operators; and
- How and when to implement the Inadvertent Discovery procedures found in Appendix L. In particular, training will cover how to recognize and sensitively treat burials and cremated remains.

AGDC will be responsible for developing the cultural resource awareness training, providing train-the-trainer sessions, and making the training materials available to relevant AGDC and construction personnel working on the Project. Training instruction may be in person, electronic, or a combination of methods. Contractors will be required to provide training to field and other relevant personnel, and AGDC will have an assurance process in place to confirm training was provided as planned.

At least 90 calendar days prior to construction initiation, AGDC will provide Consulting Parties a draft copy of the training curriculum and schedule for instruction for review and comment. Consulting Parties will have 45 calendar days to review and provide comment. AGDC will address comments and revise the

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training curriculum within 15 calendar days of the closure of the comment period, or as negotiated. The final training curriculum and schedule for instruction will be sent to Consulting Parties for their awareness. Each year, AGDC may recommend revisions to the training program during the annual PA reporting process for comment by the Consulting Parties.

7.3. Mitigation and Treatment

Mitigation can be undertaken in different ways, more than one of which should be considered while weighing a number of factors, including the significance of the historic property, its importance and to whom, and associated costs and project schedules. Per ACHP guidance, “mitigation” is a way to remedy or offset an adverse effect or a change in a historic property’s qualifying characteristics in such a way as to diminish its integrity, and “treatment” is the act of mitigating those effects or how the agency implements the mitigation measures, agreed upon in consultation (ACHP 2019).

For historic properties that cannot be reasonably avoided, AGDC or contractors hired on their behalf will implement mitigation measures established through consultation, which may include, but are not limited to:

- Oral history interviews, place names studies, GIS mapping, development of media, archival searches, and report preparation and publication (generally associated with properties eligible under Criterion A or B);
- Historic American Building Survey (HABS)/Historic American Engineering Record (HAER)/Historic American Landscape Survey (HALS) documentation or rehabilitation and reporting (generally associated with properties eligible under Criterion C); and/or
- Data recovery and analysis, reporting, and curation of resulting collections and records (generally associated with properties eligible under Criterion D).

7.3.1. Standard Property Mitigation Measures

The following standard treatment mitigation measures are provided for common types of historic properties that are present, or are likely to be present, within the APE. These include prehistoric surface and subsurface sites, historic-era sites (such as cabins, camps, mining sites, etc.), trails and travel routes, and districts. These standard treatment measures are not exhaustive, but rather should be considered starting points for the development of detailed treatment plans and the minimum level of effort necessary to mitigate complete removal or destruction of a historic property due to adverse effects (per Stipulation IV.D.ii of the PA). The treatment measures will be adapted during development of the Treatment Plans to fit each individual site or district so that the actual treatment is commensurate with the significance of the site and the level of adverse effects the Project will have on it. Extensive or unique sites or districts may require further consultation to determine appropriate mitigation measures.

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7.3.1.1. Prehistoric Surface Lithic Scatters

A number of historic properties in the direct APE are prehistoric surface lithic scatters where lithic materials were observed on, and in some cases already entirely collected from, the site's surface or root mat.

The significance of these properties – either individually or when considered as a historic district where appropriate – is in their potential to provide information that contributes to important research questions (NRHP Criterion D); thus, data recovery is the recommended mitigation. Because of the surficial nature of these sites and the previous collection that may have occurred, data recovery potential at the site itself may be limited. Data recovery for these sites should focus on recording the spatial position of any remaining materials, the collection of any remaining surface material, and spatial analysis of the location of these lithic scatters in combination with laboratory analysis of the previously collected materials, if available, and newly collected materials.

Standard treatment for prehistoric historic properties with surface components may include, as appropriate:

1. On-site data recovery

- a. Delineation of site extent based on intensive surface survey and any additional subsurface investigations (such as described below) of site, including establishment of a rebar cap site datum.
- b. Magnetometry surveys to identify possible subsurface features and anomalies
- c. Topographic mapping of site features, artifacts, tests or excavation unit locations, and other pertinent site data using survey-grade instrumentation (e.g., total station⁶)
- d. Photography of site features and landforms (as appropriate, this may necessitate clearing of brush or use of aerial photography to provide for unobstructed views)
- e. Collection of surface artifacts according to the detailed treatment plan developed in accordance with Stipulation IV.D.iii of the Project PA.
- f. Testing for and excavation of subsurface features/components, as necessary based on the results of the magnetometry surveys described above and according to the detailed treatment plan developed in accordance with Stipulation IV.D.iii of the Project PA.

2. Analysis

- g. Analysis of collected artifacts and features that are based on the research questions contained within the detailed treatment plan developed in accordance with Stipulation IV.D.iii of the Project PA.

3. Reporting

- h. Summary of cultural context of site including local/regional significance

⁶ A total station is a topographical survey instrument which can measure both horizontal and vertical position at the same time.

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- i. Summary of previous archaeological survey of the site
- j. Description of field methods
- k. Compilation of analysis results, maps, and photos, and forms consistent with standard industry practices.

Prehistoric Subsurface Properties

Historic properties comprised of subsurface deposits are also significant in their potential to provide information that contributes to important research questions (NRHP Criterion D) and data recovery is the recommended mitigation measure. Because of the surficial and buried nature of these sites and the previous collection that has occurred, data recovery potential at these sites is varied. Data recovery for these sites should consider and be commensurate with the degree to which the project will adversely effect the property, take into account the amount of previous disturbance, and identify an appropriate balance of new surface survey/excavation, spatial analysis, and/or laboratory analysis of newly collected materials.

Standard treatment for subsurface historic properties may include, as appropriate:

1. On-site data recovery

- a. Establishment of site datum
- b. Photography of site features and landforms prior to and following excavation (as appropriate, this may necessitate clearing of brush or use of aerial photography to provide for unobstructed views).
 - i. Includes photographs of in-situ artifacts and site samples
- c. Delineation of site extent based on intensive surface survey and any additional subsurface investigations via shovel tests and/or excavation units, as necessary (see below)
- d. Topographic mapping of site features, artifacts, tests or excavation unit locations, and other pertinent site data using survey-grade instrumentation (e.g., total station)

Data Recovery through excavation in accordance with the detailed treatment plan developed in accordance with PA Stipulation IV.D.iii of the Project PA.

2. Analyses that are based on the research questions contained within the detailed treatment plan developed in accordance with Stipulation IV.D.iii of the Project PA.

- e. Submission of samples for radiocarbon dating and analysis of results (as appropriate)
- f. Laboratory analysis as appropriate (e.g. isotopic analyses, lithic sourcing, radiocarbon dating, etc.)
- g. Spatial analysis of artifacts, features, occupation levels

3. Reporting

- h. Summary of cultural context of site including local/regional significance
- i. Summary of previous archaeological survey of the site
- j. Description of field methods

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- k. Compilation of appropriate appendices and/or attachments (e.g., analysis results, maps, photos, and forms)

7.3.1.2. Previously Excavated or Extensively Tested Properties

A few National Register-eligible properties in the direct APE were excavated in the 1970s and 1980s in association with archaeological investigations that occurred for the construction of TAPS, or were extensively excavated/tested for other purposes. At these types of properties, the data recovery potential may be limited, due to disturbance and destruction associated with previous excavation, testing, and collection. At minimum, previously excavated historic properties will be re-evaluated for integrity. If it is determined that the property has lost integrity, AGDC or its contractors will submit documentation to that effect and no further mitigation measures will be undertaken. If the property retains sufficient integrity to be eligible for or listed on the NRHP, AGDC will prepare a detailed treatment plan (in accordance with PA Stipulation IV.D.ii) which will follow standard measures outlined in 7.3.1.2, and submit it to the Consulting Parties as part of the Annual Cultural Resources Work Plan.

7.3.1.3. Historic Sites

Historic sites can be eligible under multiple Criteria and include above ground remnants of human activities, including shelters, cabins, camp sites, mining operations or other features. Mitigation of these sites is necessarily dependent on the both the applicable NRHP Criteria of significance and the type of adverse effect.

Standard treatment for historic sites may include, as appropriate:

1. Data gathering
 - a. Archival research of publications, letters, diaries, historic photographs, and maps
 - b. Oral history and/or traditional knowledge interviews, where appropriate/possible
2. On-site data recovery
 - c. Establishment of site datum
 - d. Topographic mapping of site
 - e. Photography of site features and landforms prior to and following excavation (this may necessitate clearing of brush or use of aerial photography to provide for unobstructed views).
 - f. Delineation of site extent based on intensive surface survey, metal detection, and any additional subsurface investigations via shovel tests and/or excavation units, as necessary (see below)
 - g. Map of site, including all buildings, structures, ruins, surface artifacts, test pits, excavation units (if conducted), and landscape features and using total station, or other survey-grade technology;
 - h. Excavation of subsurface features according to section 7.3.1.2, above
 - i. Historic artifacts will only be collected if they are of a highly unique nature or are in immaculate condition. Uncollected historic artifacts will be documented and left in the

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field, with special attention being paid to identifying diagnostic marks, production techniques, or other indicators that would provide data regarding the nature and period of occupancy of the site.

- j. Complete as-built drawings and photographs for identified structures and buildings
- 3. Analyses that are based on the research questions contained within the detailed treatment plan developed in accordance with Stipulation IV.D.iii of the Project PA.
 - k. Historic analysis of collected artifacts, as appropriate
 - l. Spatial analysis of buildings, structures, artifacts, features, occupation levels (if excavation identifies multiple occupations of site)
- 4. Reporting
 - m. Summary of cultural context of site including local/regional significance
 - n. Summary of previous historic research archaeological survey of the site
 - o. Description of field methods
 - p. Compilation of analysis results, maps, and photos, and forms consistent with standard industry practices.

7.3.1.4. Historic Roads and Trails

There are two eligible historic roads within the direct APE, the Dalton Highway, and the Denali Highway. Both highways were evaluated for historic significance in 2019.⁷ In addition, the Denali Park Road Historic District is located about 850 feet outside the 1 mile indirect APE. The direct APE for the Mainline alignment also crosses several historic trails, the most notable of which is the Iditarod National Historic Trail (INHT).

Adverse effects to historic trails are most likely to come from temporary access restrictions due to construction, removing the historic fabric of the trail during ground disturbance and construction, or altering the setting of the trail through the removal and maintenance of vegetation along the buried pipeline where it intersects the trails or is otherwise visible from the trails.

Standard treatment measures for historic trails will be based on guidelines of rehabilitation as defined in the *SOI Standards for the Treatment of Historic Properties: Guidelines for the Treatment of Cultural Landscapes*. Key criteria for rehabilitation include:

- A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
- Changes to a property that have acquired historic significance in their own right shall be retained and preserved.

⁷ Two Parks Highway road segments (FAI-02441 and FAI-02439) are within the direct APE, but fall under the Interstate Highway System Section 106 exemption and therefore will not be evaluated.

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- Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- The essential form and integrity of the historic property and its environment would be unimpaired.

Upon completion of construction activities, AGDC will return trail crossings to their original conditions, to the extent practicable. AGDC will also minimize impacts to trail conditions by maintaining vegetation consistent with existing trail characteristics during project construction, with the exception of access roads and the area directly above the pipeline. For reasons related to pipeline integrity and safety, rooted trees will not be allowed to grow within close proximity to the pipeline in the operational right-of-way. Where this clearing is determined to adversely affect a historic trail, missing or altered vegetative features will be documented prior to and after clearing. Documentation will include but is not limited to:

- Recordation of the trail route using high-resolution survey instruments.
- Extensive photography of the trail prior to and following disturbance (as appropriate, this may necessitate clearing of brush or use of aerial photography to ensure unobstructed views).
- Documentation of all features and artifacts associated with the adversely impacted section of trail, including trail markers.

Compilation of a field report including narrative, maps, and photos, and forms consistent with standard industry practices.

7.3.1.4.1. Iditarod National Historic Trail

The Final EIS, Appendix X, states that prior to construction across the Iditarod National Historic Trail, AGDC shall file with the Secretary, for the review and written approval of the Director of the OEP, a revised site-specific crossing plan for the Iditarod National Historic Trail—developed in consultation with the ADNR, BLM, U.S. Fish and Wildlife Service, U.S. Forest Service, and the Iditarod Historic Trail Alliance—that identifies the locations of detours, signs, or alternate access to the trail, and provides for public notice of construction dates and any required trail closures.

Creative mitigation may be proposed by AGDC for this property. In addition to minimization measures discussed above, in consultation with the Consulting Parties, NRHP evaluations for other segments of the INHT within the indirect APE as mitigation, as well as other measures that contribute to the care and well-being of the INHT may be considered.

7.3.2. Nonstandard Property Mitigation Measures

The Consulting Parties may identify the need to employ alternative mitigation measures for certain historic properties. Extensive or unique sites or districts may require further consultation to determine appropriate mitigation measures. Likewise, appropriate treatment for ethnographic sites and TCPs will be determined through consultation with the affected tribe(s), land managers, FERC, and SHPO. Nonstandard treatment measures, when employed, will be tailored to fit each individual site, district, landscape, or other site type so that the actual treatment is commensurate with the significance of the site and the level of adverse effects the Project will have upon it.

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Nonstandard mitigation may include, but is not limited to:

- Assisting in the development of tribal or community historic preservation plans;
- Nominating and listing properties on the NRHP;
- Developing educational materials, programs, or reports;
- Public interpretation or public reports on regional history or prehistory;
- Providing improvements to or maintenance for historic trails;
- Creation of K-12 curriculum related to the history or prehistory of the region; and
- Public presentations or sponsorship of symposiums related to the history or prehistory along the Project area.

7.3.3. Detailed Treatment Plans

Mitigation, whether undertaken on-site (such as data recovery) or off-site (such as development of curricula) requires detailed planning and documentation. Appropriate mitigation measures will be proposed in the Annual Fieldwork Report (see Section 8.2). If proposed standard mitigation measures are approved, AGDC will draft and submit to Consulting Parties detailed treatment plans (in accordance with PA Stipulation IV.D.iii) as part of the Annual Cultural Resources Work Plan. Where the same mitigation is approved for more than one site, detailed methods may be submitted for multiple properties to avoid redundancy. Site-specific components, however, will be tailored to address specific site needs and research questions, as appropriate.

If a nonstandard treatment plan is approved, AGDC will draft standalone detailed treatment plans and submit to the Consulting Parties for review and comment. Consulting Parties will have 30 calendar days to review and provide comment. If timely comments are received, FERC will consider them and, if necessary, require AGDC to incorporate changes to the treatment plan(s). AGDC will revise the treatment plan within 30 calendar days of the closure of the comment period, and submit a revised version(s) for concurrence (PA Stipulation IV.D.iii.b). If no comments are received within the 30-calendar day review period, AGDC will contact FERC, SHPO and appropriate land managing agencies to confirm concurrence for sites within their jurisdiction. AGDC will implement each plan according to the schedule laid out in the plan.

If concurrence cannot be reached through the comment and response process, FERC shall consult with SHPO (and PA signatories for sites within their jurisdiction) to resolve objections. If concurrence cannot be reached, FERC will proceed with dispute resolution measures outlined in PA stipulation XI.

Treatment reporting is instrumental in demonstrating when AGDC has completed on-site treatment (or components of multi-phase treatment) and may therefore request approval from FERC to issue notice to proceed in a given area. As such, AGDC will report (per PA Stipulation IV.D.vi) progress and/or completion of treatment efforts in the Annual Fieldwork Report (Section 8.2). Special reporting requirements established through consultation may require standalone treatment reports as described in Section 8.3.

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8. ANNUAL MEETINGS AND REPORTING REQUIREMENTS

There are a number of technical plans, activities, and reports that must be completed in order to comply with the terms of the PA and Section 106 requirements. In addition to these technical plans, activities, and reports, the PA stipulates annual and other reports in addition to annual meetings, as described below.

8.1. Annual Cultural Resources Work Plan

AGDC will complete an Annual Cultural Resources Work Plan, informed by the data gap analysis (Section 6.2.2), prior reports, DOEs, monitoring plans, and treatment plans. The Annual Cultural Resources Work Plan will detail proposed cultural resource survey and evaluation, methods to be used, the schedule for completion, and field plans for completing the survey and NRHP evaluations for the upcoming year. The Annual Work Plan will also include detailed treatment plans for any on-site avoidance, minimization, and/or treatment efforts being undertaken during the field season (PA Stipulation IV.D.iii). Any continuation of treatment efforts from detailed treatment plans included in and approved as part of previous annual work plans will also be summarized in the Annual Work Plan. The Annual Work Plan will include details and copies of the curation agreement(s) and a description of curation methods for artifacts that may be collected during survey or treatment activities over the course of the field season. The Annual Work plan must be consistent with industry standard practices.

AGDC will develop the Annual Work Plan and submit it to Consulting Parties, who will have 60 calendar days to review and provide comment. AGDC will address comments and revise the Annual Work Plan within 30 calendar days of the closure of the comment period, or as negotiated. If no comments are received within the 60-calendar day review period, the Annual Work Plan will be considered complete and will then be implemented.

8.2. Annual Fieldwork Report

The Annual Fieldwork Report will contain a comprehensive description of all inventory (including inventory of ethnographic resources outlined in section 6.2.1.4), evaluation, and assessment conducted, and resolution measures implemented during that field season. Within 6 months of completion of the field season, AGDC will provide the Annual Fieldwork Report to Consulting Parties for a 60-day review and comment period. This review period is consistent with each of the included elements as defined in the PA: evaluations (PA IV.C.ii), assessments of effect (PA IV.C.ii-iii), and recommended resolutions for adverse effects (PA IV.D.ii). AGDC will address any comments and provide a revised report for concurrence.

8.3. Standalone Treatment Reports

Some mitigation approved through consultation may require more complex treatment plans which may include offsite-only work, special or nonstandard deliverables, multi-year processes, or a combination of on-site and offsite components. These specialized treatment programs may require documentation in a standalone treatment report, to be determined as part of the mitigation consultation. This report will provide specific documentation of the implementation and completion of the treatment program (PA

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Stipulation IV.D.vi). AGDC will also document any on-site implementation of these treatment plan(s)/program(s) in the Annual Fieldwork Report.

AGDC will submit draft standalone treatment reports (see Section 7.3) to the Consulting Parties for review and comment within 6 months of completion of a treatment program. Consulting Parties will have 60 calendar days to review and provide comment. FERC will consider any timely comments and require AGDC to amend the report, as needed. AGDC will address comments and revise the report within 60 calendar days of the closure of the comment period, or as negotiated. If no timely comments are received within the 60-calendar day review period, then the Treatment Report will be considered complete. AGDC will submit copies of the finalized report to Consulting Parties.

8.4. Annual Agreement Reports and Annual Meeting

AGDC will complete an Annual Agreement Report on the progress of implementation of the stipulations of the PA by December 31 of each year (PA Stipulation VIII.B). The Annual Report will be distributed to Consulting Parties for a 45-day review period. FERC may direct AGDC to revise the annual report based on comments received. If so, AGDC will make revisions and submit the final report within 30 days following the review and comment period. A copy of the draft and final report with any sensitive information redacted will be posted to the Project website for public consumption. A preliminary template for Annual Reports is provided in Appendix K.

The content for Annual Reports will include, at minimum:

- A description of the past year's activities, including presentation of and revisions to training materials;
- Any changes to the project APE;
- Proposed revisions to methods based on findings or results from the previous year(s);
- A projection of the upcoming year's activities, including information about possible Project modifications;
- A summary of the past year's and anticipated upcoming efforts to identify, evaluate, and protect historic properties, including references for cultural resource reports and results of DOEs;
- Progress on the inventory of ethnographic resources;
- A summary of any historic properties affected, as well as any testing, remediation, or mitigation efforts;
- A summary of artifacts or other archaeological or historic materials encountered, including representative photographs or drawings, a description of analyses, and other recordation documents, as appropriate;
- A summary of artifacts sent to an approved facility for curation, or returned to the landowner, as appropriate;
- Clear maps of areas surveyed or monitored, cultural resources identified, and alternative routes to be followed to avoid any identified historic properties;

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- A description of the progress of the Undertaking and any known or expected changes to the Undertaking; and
- An updated list of Consulting Parties.

AGDC will facilitate an annual meeting to discuss the previous year's activities and the work scheduled for the coming year. The Annual Report will be distributed to Consulting Parties for review and comment at least 45 days prior to the annual meeting (Stipulation VIII.B), and the Annual Agreement Report is scheduled to be delivered December 31. To simplify this timeline, and to coincide with delivery of Annual Cultural Resources Work Plans, AGDC recommends that annual meetings be scheduled on or around February 15th. AGDC will submit the final Annual Report to the Consulting Parties within 30 days of the closure of the comment period and/or Annual Meeting. Table 8 provides a summarized schedule of the preparation, implementation, and delivery of the technical plans, activities, and reports, and PA-stipulated Annual Reports, annual meetings, and progress reporting. In addition, to facilitate the meeting, AGDC will develop materials to illustrate the status of the project and next steps, which could include a slide package and flow diagram as appropriate for the stage of work.

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Table 8. Summary and Schedule of CRMP-Required Plans and Reports

Plan or Report Title	Schedule for Completion (Calendar Days)	Reviewers/ Comment Period (Calendar Days)	Required Approval/Concurrence Parties	Length of Revision Period (Calendar Days)
Data Gap Analysis - Indirect APE ¹	Within 6 months of FEED for each Construction Spread	Consulting Parties/30	CRMP Signatories	30 Days
Desktop DOEs	Within 1 year of FEED for each Construction Spread	Consulting Parties/30	SHPO; Jurisdictional	30 Days
Assessments of Effect for Previously Documented Historic Properties	Within 1 year of FEED for each Construction Spread	Consulting Parties/30	FERC and SHPO	N/A
Cultural Resource Awareness Training Curriculum	At least 90 days prior to construction initiation	Developed in Consultation with Tribes/45	FERC and SHPO (Not in PA)	15 Days
Annual Cultural Resources Work Plan	First Construction Spread, at least 6 months prior to season (Winter/Summer). Includes: 1) Monitoring Plans 2) Detailed Treatment Plans	Consulting Parties/60	PA Signatories (Not in PA) 1) PA Signatories (Not in PA) 2) PA Signatories (PA IV.D.iii)	30 Days
Annual Cultural Resources Report	Within 6 months of completion of fieldwork season (Winter/Summer). Includes: 1) NRHP Recommendations (for outstanding survey areas, indirect APE, and inadvertent discoveries) 2) Proposed Assessments of Effect (for outstanding survey areas, indirect APE, and inadvertent discoveries) 3) Proposed Avoidance, Minimization, Mitigation Measures (for outstanding survey areas, indirect APE, and inadvertent discoveries) ² 4) Summary of on-site activities undertaken or completed as part of ongoing treatment programs or special studies ³	Consulting Parties/60	PA Signatories (Not in PA) 1) FERC, SHPO, Jurisdictional (PA IV.C.ii) ⁴ 2) FERC, SHPO (PA IV.C.iii) 3) PA Signatories (Not in PA) 4) PA Signatories (Not in PA)	30 Days
Treatment Reports	Within 6 months of completion of treatment program ⁵	Consulting Parties/60	FERC (PA IV.D.IV) ⁶	NA
PA Annual Meeting	On or around February 15th annually, starting from FEED	Consulting Parties/NA	NA	NA
Draft Annual Agreement Report	By December 31 annually (final by March 15th), starting from FEED	Consulting Parties/45	30 Days	30 Days

Notes:

1 - After the CRMP is final, the DGA, once approved, will be amended into CRMP (under amendment approval process described in PA V.E: CRMP Signatories can decide whether “substantive” or not, which will dictate whether new signatory pages are required).

2 - These may adhere to standard property mitigation measures in the CRMP or could include other ideas. Once approved, the mitigation measures (in CRMP) will be updated to include newly agreed-upon mitigation measures (under amendment approval process described in PA V.E CRMP Signatories can decide whether “substantive” or not, which will dictate whether new signatory pages are required).

3 - These activities will be further elaborated on in the completed Treatment Reports (PA IV.D.vi).

4 - PA IV.C.ii mentions required concurrence from NPS and BLM on their land but does not mention DNR.

5 - Treatment Program reports are discussed in PA IV.D.vi but not otherwise mentioned. The PA does not state that they shall be completed annually, although it does state “implementation and completion.” I suggest that these refer to things like data recovery or other specialty reports/studies.

6 - Treatment activities and programs determined to be “complete” by FERC (e.g. FERC signed off and AGDC allowed to commence construction on that portion of project) can be updated in Mitigation Table in CRMP, provided the CRMP Signatories (see note 2) agree that updating this table isn’t a “substantive” amendment.

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9. PLAN FOR THE INADVERTENT DISCOVERY OF CULTURAL RESOURCES AND HUMAN REMAINS

Cultural resources may be encountered during construction of the Project and might include historic or prehistoric materials. In the event that previously unknown cultural resources are discovered during Project activities, or if an unanticipated discovery involves human remains or cultural resources considered funerary objects, sacred objects, or objects of cultural patrimony, the Plan for Inadvertent Discovery of Cultural Resources and Human Remains shall be implemented. This plan is described in more detail in Appendix L.

10. CRMP MODIFICATIONS AND REVISIONS

After initial approval, any PA Signatory may request amending the CRMP (PA Stipulation V.E). Substantive amendments will require approval from PA Signatories. AGDC will distribute proposed revisions to the Consulting Parties and PA Signatories for review and comment. If all PA Signatories agree that the change(s) are substantive, then the revised CRMP will be adopted when the SHPO, the ACHP, the BLM Central Yukon Field Office Manager, and the NPS DNPP Superintendent signs the signature page for the CRMP and the FERC approves the amended CRMP. If all the parties required for approval agree that the change(s) are not substantive (such as updating contact information or correcting an error), then the CRMP will be updated without requiring a new signature page. Changes to the CRMP will be tracked using the revision and amendment logs located in Appendix M.

Changes considered to be non-substantive in nature include updates to contact lists (Appendices F, G, and H), updated contacts for the Inadvertent Discovery Plan (Appendix L), and updates to the documented sites table. As mitigation measures are approved for specific sites (or groupings of sites), or mitigation completed, the mitigation table (Appendix J) may also be updated. These changes are not considered substantive because all parties otherwise required to approve (PA Signatories) will have been involved in consultation, review, and comment throughout the process. As such the CRMP can function as a living document that is continually updated to reflect the progress of CRMP compliance.

The amended CRMP in its entirety can be opened for review, approval, and signature from appropriate parties per the process outlined for substantive comments above.

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12. SIGNATURES

NOTE TO REVIEWERS: Stipulation V.D. defines the exact parties who need to sign the CRMP as the SHPO, the ACHP, the BLM Central Yukon Field Office Manager, and the NPS DNPP Superintendent.

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CULTURAL RESOURCES MANAGEMENT PLAN

FOR THE

ALASKA LNG PROJECT

FERC DOCKET NUMBER CP17-178-000

Signatory

ALASKA STATE HISTORIC PRESERVATION OFFICER


 Judith E. Bittner, State Historic Preservation Officer

Date: June 29, 2021

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CULTURAL RESOURCES MANAGEMENT PLAN

FOR THE

ALASKA LNG PROJECT

FERC DOCKET NUMBER CP17-178-000

Signatory

ADVISORY COUNCIL ON HISTORIC PRESERVATION



Date: June 30, 2021

Jaime Loichinger, Acting Director, Office of Federal Agency Programs

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CULTURAL RESOURCES MANAGEMENT PLAN

FOR THE

ALASKA LNG PROJECT

FERC DOCKET NUMBER CP17-178-000

Invited Signatory

BUREAU OF LAND MANAGEMENT



Date: 06/29/2021

Timothy LaMarr, Central Yukon Field Office Manager

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CULTURAL RESOURCES MANAGEMENT PLAN

FOR THE

ALASKA LNG PROJECT

FERC DOCKET NUMBER CP17-178-000

Invited Signatory

NATIONAL PARK SERVICE

**DONALD
STRIKER**

Digitally signed by DONALD
STRIKER
Date: 2021.06.29 19:50:15 -08'00'

Date: _____

Don Striker, Superintendent, Denali National Park and Preserve

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13. APPENDICES

- A: Documented AHRs Sites and Associated Construction Spread
- B: Areas of Potential Effect and Areas Surveyed Mapbook
- C: Previous Survey Investigations in the APE
- D: Environmental and Cultural Overview
- E: Cultural Resources Survey Completed at Project Components in the Direct APE
- F: Contact Information for Signatories, Invited Signatories, and Concurring Parties to the Programmatic Agreement
- G: Parties Invited to Consult in Development of the Programmatic Agreement and CRMP
- H: Contacted/Proposed Stakeholders by Construction Spread and Area of Interest
- I: Monitoring Guidelines
- J: Proposed Resolution Measures
- K: Annual Report Template
- L: Plan for Unanticipated Discovery of Cultural Resources and Human Remains
- M: Revision and Amendment Logs

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APPENDIX A: DOCUMENTED AHRS SITES AND ASSOCIATED CONSTRUCTION SPREAD

A1. Documented AHRS Sites within Direct APE

A2. Documented AHRS sites within Indirect APE

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APPENDIX B: AREAS OF POTENTIAL EFFECT AND AREAS SURVEYED MAPBOOK

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APPENDIX C: PREVIOUS SURVEY INVESTIGATIONS IN THE APE

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APPENDIX D: ENVIRONMENTAL AND CULTURAL OVERVIEW

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APPENDIX E: CULTURAL RESOURCES SURVEY COMPLETED AT PROJECT COMPONENTS IN THE DIRECT APE

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**APPENDIX F: CONTACT INFORMATION FOR SIGNATORIES, INVITED
SIGNATORIES, AND CONCURRING PARTIES TO THE PROGRAMMATIC
AGREEMENT**

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APPENDIX G: PARTIES INVITED TO CONSULT IN DEVELOPMENT OF THE PROGRAMMATIC AGREEMENT AND CRMP

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APPENDIX H: CONTACTED / PROPOSED STAKEHOLDERS BY CONSTRUCTION SPREAD AND AREA OF INTEREST

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APPENDIX I: MONITORING GUIDELINES

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APPENDIX J: PROPOSED RESOLUTION MEASURES

J1. Proposed Resolution Measures for Properties with Multiple intersections with Project APE

J2. Proposed Resolution Measures for Properties with Single Intersection with Project APE*

*Currently only properties listed are those within 500-foot avoidance buffer.

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APPENDIX K: ANNUAL REPORT TEMPLATE

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APPENDIX L: PLAN FOR UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES AND HUMAN REMAINS

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APPENDIX M: REVISION AND AMENDMENT LOGS