

**PLAN OF COOPERATION  
LIBERTY DEVELOPMENT PROJECT, ALASKA**

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**Submitted by**

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**to**

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### **Attachments:**

**Attachment A:** Record of Stakeholder Engagement Meetings

**Attachment B:** Distribution List



## **1.0 Introduction and Purpose**

Hilcorp Alaska, LCC (Hilcorp) is proposing to develop the Liberty Oil Field, located on the Outer Continental Shelf (OCS), in Foggy Island Bay in the Beaufort Sea (Figure 1). Activities related to the Liberty Development project will occur in both federal and state waters of Foggy Island Bay during the annual open water season, beginning in 2019. The proposed Liberty Development includes the Liberty Drilling and Production Island (LDPI), which will be constructed of reinforced gravel in 19 feet of water about 5 miles offshore in Foggy Island Bay of the Beaufort Sea OCS. The proposed development involves the construction of the LDPI over the reservoir, facility development, and the installation of a subsea pipeline to transport sales quality crude oil to shore, where an above ground pipeline will transport crude to the existing Badami pipeline.

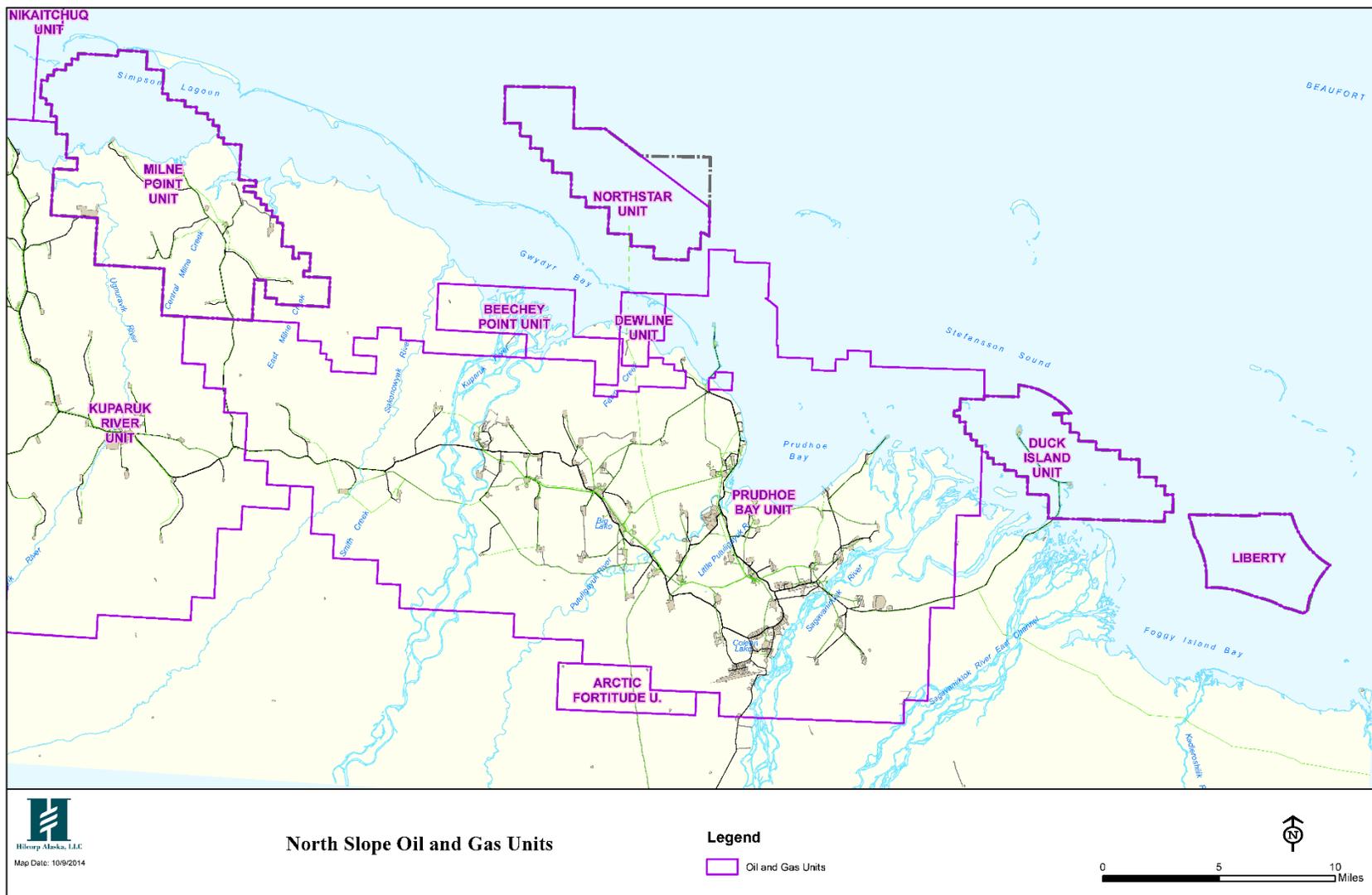
This Plan of Cooperation (POC) was prepared in accordance with the following federal requirements:

- 50 CFR 216.104(a)(12), which requires a POC be submitted in support of a request for an Incidental Harassment Authorization (IHA) from the National Marine Fisheries Service (NMFS); and
- 50 CFR 18.124(c)(4), which requires a record of community consultation to be submitted in support of a request for a Letter of Authorization (LOA) from the U.S. Fish and Wildlife Service (USFWS).

This POC is intended to document Hilcorp's stakeholder engagement and to describe the measures Hilcorp has taken and will take to minimize adverse effects that its proposed Liberty Development project activities may have on the availability of marine mammals for subsistence use. Hilcorp's LOA application, IHA application, and associated Marine Mammal Monitoring and Mitigation Plan (4MP) describe the monitoring and mitigation measures that will be implemented during the Liberty Development project to prevent conflicts with subsistence activities. Hilcorp intends to maintain open communication with all stakeholders throughout the Liberty Development project permitting and development process. A copy of this Plan of Cooperation will be provided to affected communities for their review and comment. Feedback received will be incorporated into the document and into future operations.



Figure 1 –Overview of the eastern Beaufort Sea with the outline of the Liberty Unit.





## 2.0 Project Description

The proposed Liberty Project includes the construction of a gravel island, ice roads, development of a mine-site to supply gravel for the construction of the LDPI, and installation of an undersea pipeline that reaches shore from the LDPI, transitions to an above ground, vertical support member (VSM)-mounted pipeline, and then connects to the existing above-ground Badami pipeline. The LDPI is a self-contained offshore drilling and production facility and will contain infrastructure to support construction and operations including a drill rig and associated equipment, utilities, and living quarters. As stated in the 4MP, the expected timing and dates of project activities that produce noise and have the potential to result in “takes” of marine mammals in the defined Action Area are summarized in Table 1. The following sections generally describe those activities.

**TABLE 1. PROJECT ACTIVITY TIMELINE**

ACTIVITY	TIMING	POTENTIAL FOR TAKE
<b>CONSTRUCTION OPERATIONS</b>		
<i>Summer &amp; Winter Access</i>	Year 1 - Year 3	
Annual Ice Road (#1)	Year 1 - Year 3, January – mid-May	Yes
Support Ice Roads (#2 - #4)	Year 1 – Year 4, December – mid-April	Yes
Sea-going Barges	Year 2 - Year 4, June - November	No
Small Marine Vessels	Year 2 - Year 4, June - November	No
<i>Island Construction<sup>1</sup></i>	Year 2, February – September <sup>2</sup>	
Pile and Pipe Driving and Slope Shaping	Year 2, July – August <sup>2</sup>	Yes
<i>Facilities Construction</i>	Year 2, August - Year 4, May	No
<i>Pipeline Construction</i>	Year 3, January - May	Yes
<b>DRILLING OPERATIONS</b>		
<i>Summer &amp; Winter Access</i>	Year 2 - Year 4	
Annual Ice Road (#1)	Year 2 - Year 4, January – mid-May,	Yes
Sea-going Barges	Year 2 - Year 4, June - November	No
Small Marine Vessels	Year 2 - Year 4, June - November	No
<i>Rig Mobilization and Well Drilling</i>	Year 2 – Year 5	Yes
<i>First Oil/Commissioning</i>	Year 3, December - Year 4, May	No

Source: DRAFT Marine Mammal Monitoring and Mitigation Plan Liberty Development and Production Project (Hilcorp, 2018).

<sup>1</sup>No takes are being requested for mine site development.

<sup>2</sup>Would occur in Year 3 only if island construction occurs over two winter seasons as ice conditions allow.

### 2.1 Access to Project Area

The LDPI is separated from existing North Slope infrastructure by water; the nearest gravel pad and road is the Endicott Satellite Drilling Island (SDI) and causeway, about 7.3 miles west-northwest of the site. Transportation and re-supply needs include the ability to safely transport personnel, supplies, and equipment to and from the site at any time of year. The following



describe the basic features and limitations of each mode of transportation. Permanent access roads, airstrips, float plane facilities or storage sites are not planned for construction to support the Liberty Development.

***Road System***

Road vehicle traffic will use the Alaska Highway System to transport material and equipment from supply points in Fairbanks, Anchorage, or outside of Alaska to the supply hub of Deadhorse. North Slope gravel roads will be used for transport from Deadhorse to the SDI. Existing gravel roads within the Endicott field between the Main Production Island (MPI) and the SDI will also be used to support the project. No new gravel roads will be constructed.

***Ice Roads***

During winter, ice roads will be built to support island and pipeline construction activities, and will be used in subsequent years to support drilling and production operations. During the first five years of construction, there would be an increased number of ice roads and traffic which would diminish after Year 5. An ice road connecting SDI to LDPI is expected to be constructed annually to resupply the island and transport personnel. Ice roads are commonly used on the North Slope for winter tundra travel typically from January through mid-April, and for offshore access typically from February through mid-May. All ice roads will be permitted by the State of Alaska, Department of Natural Resources (ADNR), Division of Mining, Land and Water (DMLW) and the North Slope Borough (NSB). Approximate ice road routes during island and pipeline construction are shown in Figure 3. The ice road route to support ongoing re-supply and production operations is shown in Figure 4.



Figure 2 – Ice Road Locations for Island and Pipeline Construction

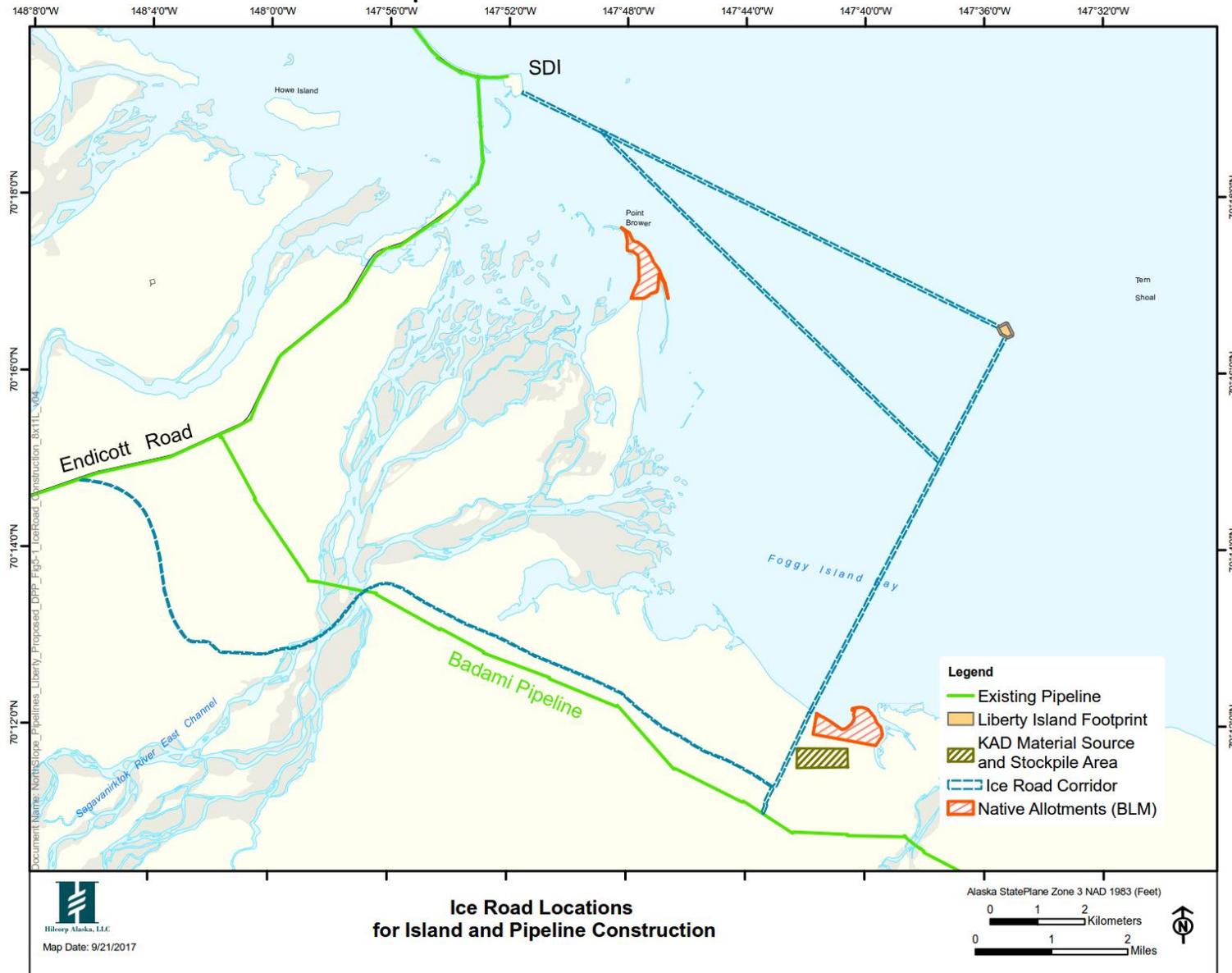
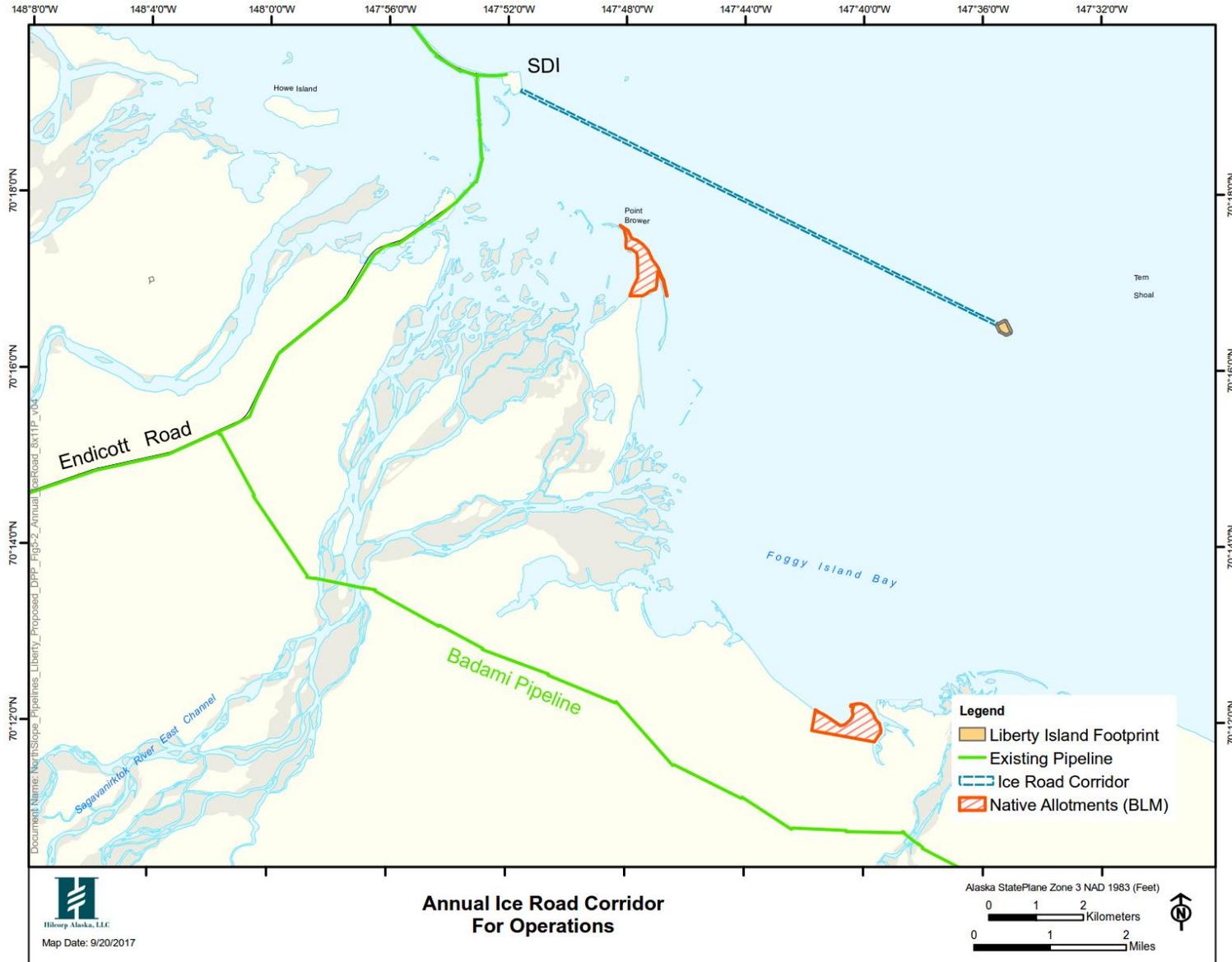




Figure 3 – Annual Ice Road Corridor for Operations



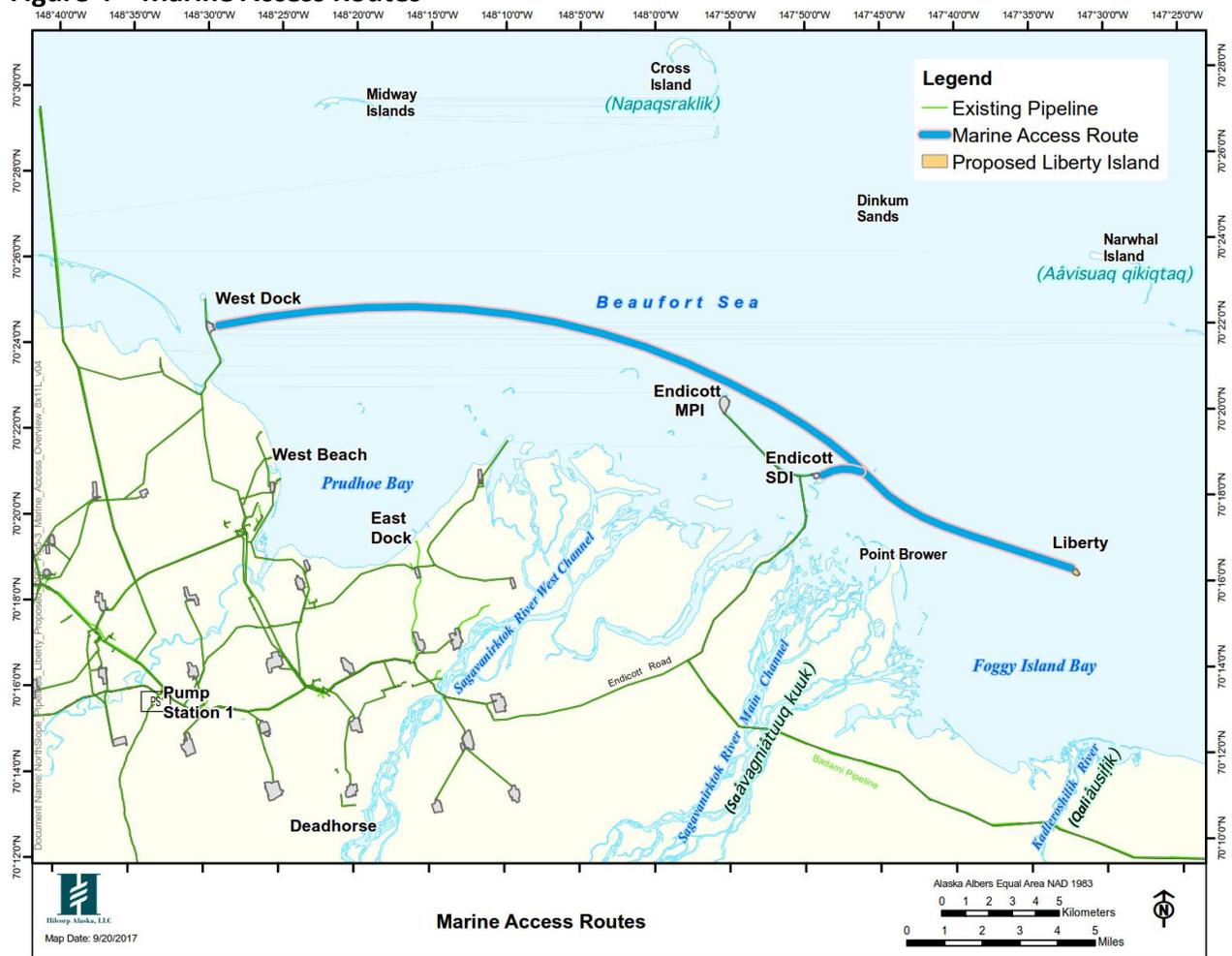


**Marine Access**

During the open-water season, barges, hovercraft, and other vessels will be used to transport equipment, personnel, and supplies to LDPI. Large vessels can winter in the Prudhoe Bay area and travel to the LDPI in the open-water season, and will be generally chartered on a seasonal basis or long-term contract. Vessels will include barges and tugs to move large modules and equipment. Barges may originate from West Dock, SDI, or Deadhorse, as well as from Southern Alaska or the Lower-48. Smaller vessels will be used to move personnel, supplies, tools, and smaller equipment. Hovercraft will transport personnel and small loads during shoulder seasons when ice roads and open-water vessel support are not available. Arktos™ all-terrain machines will be used for emergency evacuation.

The marine routes to move equipment from West Dock (Prudhoe Bay) to LDPI, and to support operations from SDI are shown in Figure 5. Additional information regarding estimated traffic and access to the Liberty project area is provided in the DPP Section 5.

**Figure 4 – Marine Access Routes**





### ***Air Access***

Year-round helicopter access to the LDPI is planned, and a helicopter landing site will be constructed on LDPI near the living quarters. A permanent heliport facility will be developed at the end of the pipeline, to provide access to the Badami Tie-In Pad for maintenance purposes. Air operations are often limited by weather conditions and visibility. In general, air access will be used for movement of personnel and foodstuffs, and for movement of supplies or equipment when necessary. Helicopter use is also planned for pipeline surveillance, personnel transport, re-supply during the broken ice seasons, and access for maintenance and inspection of the onshore pipeline system. Typically air traffic routing is as direct as possible from departure locations such as the SDI, West Dock or Deadhorse to the LDPI, with routes and altitude adjusted to accommodate weather, other air traffic, and subsistence activities. If safe to do so, aircraft will use an established corridor to the extent practicable and to minimize potential impacts to marine mammals or subsistence activities. Fixed wing aircraft are not planned for use under normal operations; fixed wing aircraft would only be used at Liberty on an occasional, as-needed basis for purposes of spill response (spill delineation) and aerial reconnaissance of anomalous conditions, or unless otherwise required by regulatory authority..

Fixed-wing aircraft would only be used at Liberty on an occasional, as-needed basis for purposes of spill response (spill delineation) and aerial reconnaissance of anomalous conditions, or unless otherwise required by a regulatory authority.

## **2.2 Island Construction**

The LDPI is an artificial island to be constructed in 19 feet of water in Foggy Island Bay in the Beaufort Sea OCS. Construction of the artificial island includes the placement of approximately 929,900 cubic yards of gravel, secured with sheet piling, and armored with linked concrete mats. The surface of the island is designed to be 15 feet above sea level with a working surface of approximately 9.3 acres and a design seabed footprint of approximately 24 acres. The island will be constructed of gravel from the proposed mine site west of the Kadleroshilik River.

## **2.3 Pipeline Construction**

Sales oil will be exported from the LDPI through a subsea 12-inch x 16-inch pipe-in-pipe (PIP) system that is bundled to a nominal 4-inch coiled utility line, along with an armored fiber optic cable. The utility line will be installed as a contingency for possible future use as a fuel gas delivery line or to allow for a circulation loop with the 12-inch export line for upset conditions. The export line and the utility line will be a U.S. Department of Transportation (DOT) regulated pipelines. A detailed description of the Liberty pipeline system is provided in BOEMs Liberty EIS.

## **2.4 Drilling**

The Liberty reservoir depletion plan is based on five producers and four injectors. The well row arrangement on the island is designed to accommodate up to 16 wells in case additional wells are required to increase reserves recovery or account for wells that need replacement. The rock



and fluid properties are excellent. This fact allows for conventional wells to be drilled from an artificial island that is optimally located over the reservoir. Once the drilling unit is commissioned, drilling operations will continue uninterrupted for approximately 2 years.

A detailed drilling schedule is shown in Figure 8-1 of the DPP. The drilling unit will be mobilized during open-water barge season of Year 2, after the island is constructed and the well row is prepped for installation of the drilling unit. Re-assembly of the drilling unit with moving system and functional testing will continue through year end of Year 2. Much of the drilling support equipment unit will also be delivered during open-water season of Year 2. Remaining equipment to commission the drilling facilities will be delivered as soon as the ice road is operational in first quarter (1Q) of Year 3. Subsurface drilling operations are scheduled to begin in the 1Q of Year 3.

Drilling will continue as either year-round batch drilling down to and including the intermediate casing above the reservoir, or with reservoir drilling during the open-water and frozen ice seasons. Drilling through the reservoir section will be limited to the open-water season (~July 15 through ~October 1) or during frozen ice season, which begins with 18 inches of ice (~November 15) and ends June 1 as prescribed in the Oil Spill Response Plan (OSRP). All wells would be completed by end of 2Q Year 5.

A detailed description of the proposed drilling activities, support modules, and equipment on LDPI is provided in Section 8 of the DPP.

### **3.0 Cooperation and Coordination**

In late 2014, Hilcorp began the community outreach process with a series of meetings with North Slope stakeholders. These meetings have continued into 2018 and served multiple purposes:

- As a new operator on the North Slope, meetings were an opportunity to introduce Hilcorp to North Slope stakeholders.
- To present the Liberty Development project plans to local communities and provide updates on project development.
- To gather feedback on the proposed operations and to incorporate this feedback into project planning.

In addition, Hilcorp has coordinated with federal, state and local regulatory agencies for the same purposes. In preparation for the Liberty Development project activities, Hilcorp has had the opportunity to engage with a number of North Slope stakeholder groups. Attachment A of this POC contains a record of stakeholder engagement meetings held in support of the Liberty Development project to date.

Meetings with various North Slope stakeholders include the following:

- North Slope Community Visits: This includes public meetings in the communities of Barrow, Nuiqsut and Kaktovik. Also, meetings with local government entities (Native Village Government, Native Corporation representatives, Village Mayor, community



whaling captains, etc.). North Slope community visits typically occur 1-2 times a year, or more frequently as needed.

- Alaska Eskimo Whaling Commission Meetings: Hilcorp attends all AEWC meetings, which occur quarterly. Presentations are given on the Liberty project as needed.
- North Slope Borough Planning and Wildlife Departments: project coordination and pre-application meetings in advance of Rezoning and Master Plan application submittal. Also, ongoing coordination with Wildlife Department on Liberty project, monitoring and mitigation.
- Hilcorp has also coordinated with Native Allotment owners whose property is in the proximity of the project area.

Hilcorp will continue to engage with community members as well as federal, state, and local regulatory agencies to gather and incorporate feedback into the proposed activities. Additional meetings and consultations will continue throughout project execution.

#### **4.0 Measures to Reduce Impacts**

Hilcorp intends to operate in a manner that will minimize impacts to subsistence activities from Liberty Development project activities. Hilcorp has developed a Draft Marine Mammal Monitoring and Mitigation Plan (4MP) to outline measures that will be implemented to reduce the likelihood of impacts on marine mammals or subsistence. The Draft 4MP is a combination of active monitoring of the area of operations and the implementation of mitigation measures designed to minimize project impacts to marine resources.

Hilcorp's Draft 4MP, is included here as Attachment B, and outlines how the mitigation and monitoring objectives will be met by:

- Initiating ice road construction prior to March 1<sup>st</sup> to minimize potential impacts to ringed seals establishing birthing lairs;
- Scheduling the majority of island construction, including pile driving activities, during the ice covered season (similar to Northstar), when cetaceans will not be present;
- The use of PSOs;
- The use of unmanned aerial systems for marine mammal monitoring;
- The use of soft-start techniques;
- Adherence to the existing Conflict Avoidance Agreement (CAA) between North Slope Industry participants and the Alaska Eskimo Whaling Commission (AEWC), for all North Slope oil and gas activities to minimize potential interference with bowhead subsistence hunting;
- Scheduling all non-essential boat, hovercraft, barge, and air traffic to avoid conflicting with the timing of the Cross Island bowhead hunt;
- Cease impact pile driving to avoid the period of Cross Island bowhead whale subsistence hunting, if this activity occurs in open water conditions; and

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- Acoustic monitoring during construction and the first three years of operations, as outlined in the 4MP.

In addition to the measures outlined in the 4MP, Hilcorp has provided ongoing support for subsistence hunters.

- Hosting the Nuiqsut Com-Center at Endicott in support of the Cross Island bowhead whale hunt,
- Installed a VHF Antenna/radio repeater at Milne Point, to provide improved communication for whaling crews traveling from Nuiqsut to Cross Island.
- Providing ongoing support to Michael Galginaitis' Cross Island Whaling Study
- Hilcorp has entered into a Memorandum of Understanding with the Nuiqsut Whaling Captains Association, formalizing a commitment to provide monetary and logistical support to the Nuiqsut whale hunt at Cross Island
- Ratified the Good Neighbor Policy, under which Hilcorp maintains a twenty million dollar bond with Wells Fargo Bank.

**5.0 Future Plan of Cooperation Consultations**

Hilcorp plans to continue to engage with affected subsistence communities regarding its Liberty Development project and ongoing North Slope operations.

Projected outreach activities for 2018 include the following:

- Attendance at AEWC Quarterly Meetings
- Nuiqsut Community Meeting and meeting with Nuiqsut Whaling Captains Association
- Liberty Project Coordination meetings with the North Slope Borough Planning Department and Wildlife Department
- Participation in the NSB-lead Camden Bay/Central Alaska Beaufort Sea Study Meeting

## **Attachment A**

### **Record of Stakeholder Engagement Meetings**

## **Attachment B**

### **Distribution List**