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July 28, 2023

Permits and Conservation Division  
NMFS Office of Protected Resources  
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and

Greg Balogh  
NMFS Alaska Region  
Protected Resources Division  
222 W. 7<sup>th</sup> Ave. #43  
Anchorage, AK 99513

**Re: Hilcorp Cook Inlet Annual Report for LOA under promulgated Incidental Take Regulations 85 FR 83451**

Dear NMFS Office of Protected Resources and Mr. Balogh:

Hilcorp Alaska, LLC (Hilcorp) respectfully submits this annual end-of-season report of ringed seal (*Phoca [Pusa] hispida*) observations during the winter 2022/2023 ice trail season. Submittal of this report fulfills the annual end-of-season reporting requirement in Section 5(e) of the Hilcorp Letter of Authorization (LOA) issued on 22 December 2020, for the period of 22 December 2020 through 30 November 2025, for takes of marine mammals incidental to sea ice road and sea ice trail construction, maintenance, and operation on the North Slope of Alaska.

The ice trail was open for travel 18 January 2023 and closed for the season on 19 May 2023. During the winter 2022/2023 season, 502 one-way trips were made across the ice trail primarily for the purposes of personnel transport and resupply; averaging 4.18 one-way trips on the ice trail per day. Hilcorp began ice trail travel via hovercraft on 20 May 2023 and ended on 22 June 2023. An ice road was not constructed during the season. The general route of the ice trail between West Dock and Northstar is approximately 7.5 miles. The latitude and longitude of each mile, half mile, and any sighting specific mile marker (if between the two) are noted below in Figure 1 and depicted in Table 1.

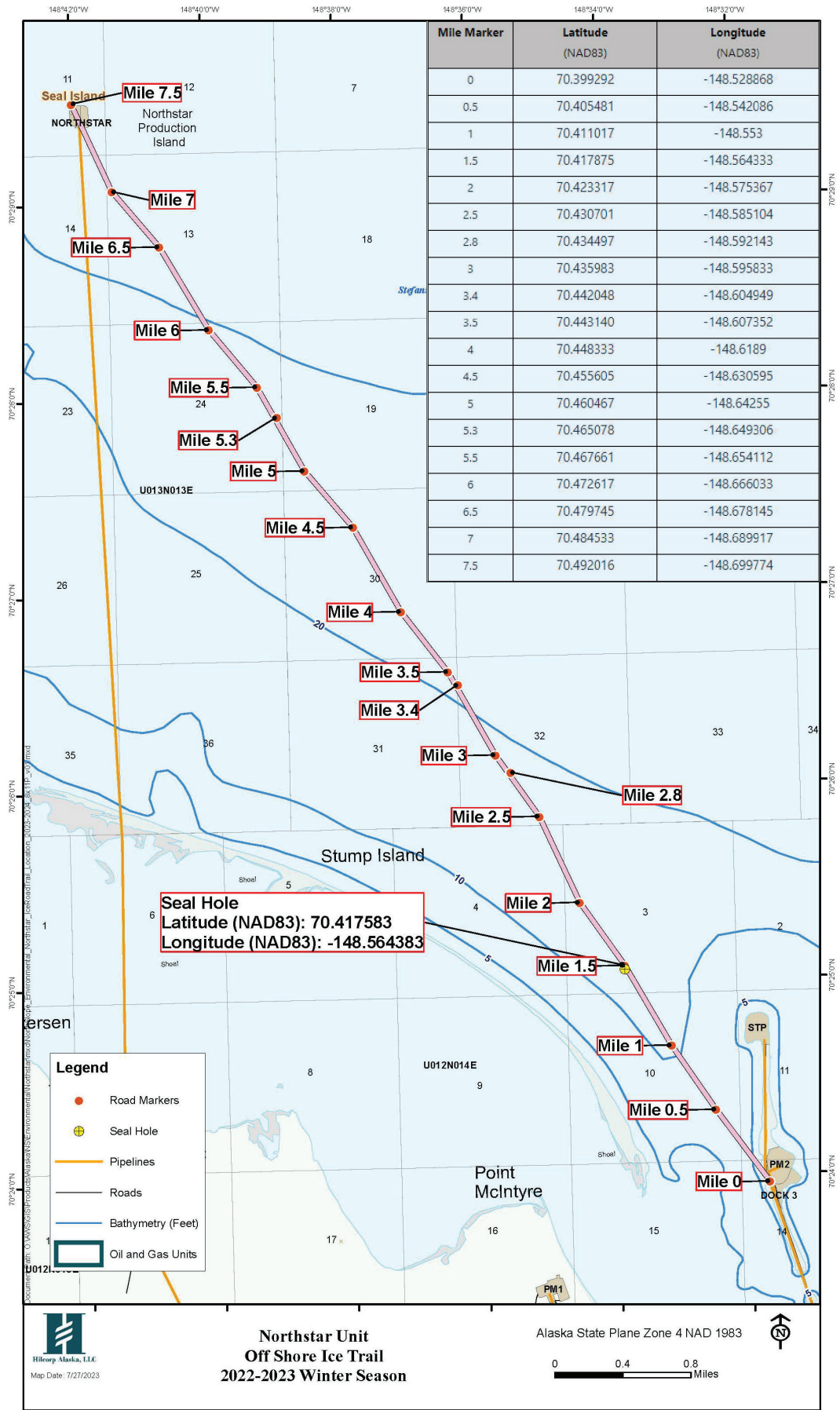


Figure 1. Northstar Unit Offshore Ice Trail 2022-2023 Winter Season

Mitigation and monitoring during ice trail construction, maintenance, and use was conducted in accordance with Hilcorp's Marine Mammal Mitigation and Monitoring Plan (4MP). As required in the Final Rule, Hilcorp also implemented best management practices in accordance with Hilcorp's Best Management Practices (BMP) Plan to minimize impact from ice trail activity on ice seal behaviors such as lairing and pupping. The 4MP and BMP Plan are provided in Attachments 1 and 2, respectively, for reference.

Ice seal surveys were conducted every other day from 1 March through 18 May. A summary table of data collected during these surveys includes the date and time of the survey start, the observer's name, weather at the time of the survey, presence/absence of seals, number and life stage of animals observed (i.e., pup or adult), behavior of observed animals, and activity occurring nearest the sighting (Attachment 3). Per mitigation measure 5(b)(ii) Hilcorp personnel are trained to report all sighting information when a seal is observed within 50 meters (m) of the ice trail. When sightings of seals occur at distances greater than 50 m from the ice trail, observers are asked to capture as much information as possible which is not always the full suite of information described above. Minimum and maximum snow depth measurements at each half mile marker are also provided in Attachment 3. A copy of each individual data log is provided in Attachment 4.

During the season, 38 surveys were conducted. There were 22 sightings wherein a total of 29 ringed seals were observed during 6 of those surveys. On 22 April, a survey was scheduled but was unable to be conducted due to the presence of a polar bear resting on the ice path. A polar bear observation report was completed and submitted to the United States Fish and Wildlife Service. A second scheduled survey could not be conducted due to adverse weather conditions on 8 May.

On May 18<sup>th</sup>, a seal hole was observed by the Tucker driver on the western edge of the ice trail at mile 1.5 around 2:50pm. He had one delineator with him and placed it approximately 10' north of the seal hole (see Figure 1). The ice trail season was scheduled to end on May 19<sup>th</sup>. Hilcorp contacted the Anchorage NMFS ESA office for mitigation guidance for the seal hole and requested one more traverse of the area on May 19<sup>th</sup>. Bonnie Easley-Appleyard asked that the vehicle operators stay as far away from the seal hole as possible, and to reduce speed to 5 mph at a distance of 150 m before and after the seal hole. This mitigation was adhered to on the May 19<sup>th</sup> traverse and no seal was observed at the hole.

All occurrences of seal sightings were greater than 200 meters from the ice trail; therefore, no mitigation measures were enacted during this season for ringed seal observations. The nearest activity during all sightings was vehicle transit associated with the seal survey. Table 1 provides coordinates for each mile marker along the trail, and the sighting specific mile markers (if between the two) and Table 2 summarizes these sightings.

**Table 1. Ice Trail Mile Markers and Corresponding Coordinates**

<b>Mile Marker</b>	<b>Latitude (NAD83)</b>	<b>Longitude (NAD83)</b>
0	70.399292	-148.528868
0.5	70.405481	-148.542086
1	70.411017	-148.553
1.5	70.417875	-148.564333
2	70.423317	-148.575367
2.5	70.430701	-148.585104
2.8	70.434497	-148.592143
3	70.435983	-148.595833
3.4	70.442048	-148.604949
3.5	70.443140	-148.607352
4	70.448333	-148.6189
4.5	70.455605	-148.630595
5	70.460467	-148.64255
5.3	70.465078	-148.649306
5.5	70.467661	-148.654112
6	70.472617	-148.666033
6.5	70.479745	-148.678145
7	70.484533	-148.689917
7.5	70.492016	-148.699774



**Table 2. Ringed Seal Sightings During Ice Seal Surveys 1 March through 18 May 2023**

Sighting No.	Date (mm/dd/yyyy)	Time (00:00)	Location (Lat/Long or Mile Marker)	Weather	Number of Seals	Juvenile or Adult	Behavior	Activity Occurring Near the Sighting	Distance from the Ice Trail
1	5/4/2023	Between 14:30 and 14:40	Mile Marker 1	Overcast	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	~400 m
2	5/4/2023	Between 16:50 and 17:00	Mile Marker 7	Overcast	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	~300 m
3	5/10/2023	Between 11:45 and 14:35	Mile Marker 1.5	Overcast	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>250 m
4	5/10/2023	Between 11:45 and 14:35	Mile Marker 2	Overcast	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	~250 m
5	5/10/2023	Between 11:45 and 14:35	Mile Marker 5.5	Overcast	2	1 Adult, 1 Juvenile	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>250 m
6	5/10/2023	Between 11:45 and 14:35	Mile Marker 6.5	Overcast	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>250 m

Sighting No.	Date (mm/dd/yyyy)	Time (00:00)	Location (Lat/Long or Mile Marker)	Weather	Number of Seals	Juvenile or Adult	Behavior	Activity Occurring Near the Sighting	Distance from the Ice Trail
7	5/10/2023	Between 11:45 and 14:35	Mile Marker 7.5	Overcast	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>250 m
8	5/12/2023	Between 14:50 and 15:40	Mile Marker 5.3	Overcast	2	2 Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>250 m
9	5/12/2023	Between 14:50 and 15:40	Mile Marker 7.5	Overcast	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>250 m
10	5/14/2023	Between 12:30 and 15:00	Mile Marker 1.5	Partly Cloudy	2	2 Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
11	5/14/2023	Between 12:30 and 15:00	Mile Marker 2.0	Partly Cloudy	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
12	5/14/2023	Between 12:30 and 15:00	Mile Marker 2.8	Partly Cloudy	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m

Sighting No.	Date (mm/dd/yyyy)	Time (00:00)	Location (Lat/Long or Mile Marker)	Weather	Number of Seals	Juvenile or Adult	Behavior	Activity Occurring Near the Sighting	Distance from the Ice Trail
13	5/14/2023	Between 12:30 and 15:00	Mile Marker 3.4	Partly Cloudy	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
14	5/14/2023	Between 12:30 and 15:00	Mile Marker 5.5	Partly Cloudy	2	2 Adults	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
15	5/14/2023	Between 12:30 and 15:00	Mile Marker 7.5	Partly Cloudy	2	2 Adults	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
16	5/16/2023	Between 12:35 and 15:35	Mile Marker 2	Fog	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
17	5/16/2023	Between 12:35 and 15:35	Mile Marker 5.5	Fog	2	2 Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
18	5/18/2023	Between 09:10 and 12:00	Mile Marker 1.5	Clear	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m

Sighting No.	Date (mm/dd/yyyy)	Time (00:00)	Location (Lat/Long or Mile Marker)	Weather	Number of Seals	Juvenile or Adult	Behavior	Activity Occurring Near the Sighting	Distance from the Ice Trail
19	5/18/2023	Between 09:10 and 12:00	Mile Marker 2.0	Clear	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
20	5/18/2023	Between 09:10 and 12:00	Mile Marker 3.4	Clear	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
21	5/18/2023	Between 09:10 and 12:00	Mile Marker 5.5	Clear	2	2 Adults	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m
22	5/18/2023	Between 09:10 and 12:00	Mile Marker 7.5	Clear	1	Adult	Resting	Tucker SnowCat *Vehicle transit associated with the seal survey	>200 m

A total of 38 ringed seal surveys occurred along the ice trail from 1 March through 18 May. Each survey averaged 3.13 hours to complete, for a total of approximately 119 hours of ringed seal vehicle survey effort. Visibility was diminished to 0.25 miles on one day, 8 May, and no survey was conducted. Visibility was diminished to 0.5 miles on two days, 2 May and 6 May, accounting for 5.26 % of the survey effort. During all other survey effort visibility was greater than 0.5 miles, with 10 miles of visibility documented for 73.68 % of all survey effort.

Mitigation measures and best management practices as outlined in the attached 4MP (Attachment 1) and BMP Plan (Attachment 2), particularly the annual training as outlined in LOA Section 4(a)(2) and the every-other-day seal surveys after 1 March 2023, contributed greatly to effectively mitigating potential impacts to ringed seals. Hilcorp does not have any proposed changes to the Wildlife Interaction Plan, 4MP, or BMP Plan for NMFS' consideration at this time.

Please contact Jen Dushane at (907) 777-8549 or [jdushane@hilcorp.com](mailto:jdushane@hilcorp.com) with questions regarding this report.

Respectfully submitted,

Jennifer  
Dushane (5265)



Digitally signed by Jennifer  
Dushane (5265)  
DN: cn=Jennifer Dushane (5265)  
Date: 2023.08.17 16:28:05 -  
08'00'

Jen Dushane  
Sr. Wildlife Specialist  
Hilcorp Alaska, LLC

**Attachments:**

- Attachment 1 – Marine Mammal Mitigation and Monitoring Plan
- Attachment 2 – Best Management Practices Plan
- Attachment 3 – Ice Seal Log Summary Table PDF & Excel
- Attachment 4 – Ice Seal Survey Daily Log

**Attachment 1**

**Marine Mammal Mitigation and Monitoring Plan**

**Attachment 2**

**Best Management Practices Plan**



**Attachment 3**

**Ice Seal Log Summary Table**

**Attachment 4**

**Ice Seal Survey Daily Logs**

**Marine Mammal Monitoring and Mitigation Plan for  
Joint Incidental Take Request for Alaska North Slope  
Ice Road, Trail and Pad Activities**

**August 2019**

**Submitted by:**



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## SYMBOLS AND ABBREVIATIONS

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AKR.....	Alaska Regional Office
CFR.....	Code of Federal Regulations
ESA.....	Endangered Species Act
Eni.....	Eni US Operating Co. Inc.
ft.....	feet
GPS.....	Global Positioning System
Hilcorp.....	Hilcorp Alaska, LLC
ITA.....	Incidental Take Authorization
km.....	kilometers
km <sup>2</sup> .....	square kilometers
LOA.....	Letter of Authorization
m.....	meters
mi.....	miles
mi <sup>2</sup> .....	square miles
MMPA.....	Marine Mammal Protection Act
NMFS.....	National Marine Fisheries Service
ODS.....	Oooguruk Drill Site
OPP.....	Oliktok Production Pad
OPR.....	Office of Protected Resources
SID.....	Spy Island Drillsite
U.S. ....	United States

## 1. INTRODUCTION

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Hilcorp Alaska, LLC (Hilcorp) and Eni Petroleum Co., Inc. (Eni) have submitted a request to the National Marine Fisheries Service (NMFS), Office of Protected Resources (OPR), to develop regulations and issue 5-year Letters of Authorization (LOAs) under the Marine Mammal Protection Act (MMPA), Section 101(a)(5)(A), effective approximately December 2019, allowing potential incidental taking of small numbers of ringed seals (*Phoca hispida*) during construction, maintenance and operation of ice roads, trails and pads on Alaska's North Slope for the 5-year period 2019-2024. Ringed seals are resident in the Beaufort Sea, and during the ice-covered season from approximately early December through early July; they are the only marine mammal species under the jurisdiction of NMFS that is likely to be encountered.

A sea ice road is defined as a route across the sea ice created by clearing and grading snow and then pumping seawater through drilled holes in the ice until the desired thickness is achieved. The top layer is often strengthened by a freshwater cap of ice. The ice road corridors (disturbed area) generally range between 49 to 61 meters (m) (160 to 200 feet [ft]) wide, consisting of an approximately 18 to 30 m (60 to 100 ft) roadway with 15 to 18 m (50 to 60 ft) shoulders on each side. Delineators are used to mark the roadway at set intervals. These improved ice roads can be used by trucks, vans, and any other wheeled vehicles.

A sea ice trail is a route across sea ice created, used and maintained by equipment such as Tuckers, PistonBullys, snow machines or similar tracked equipment. These roads cannot be used by regular wheeled vehicles. Sea ice trails do not require seawater flooding and the width of the disturbed area is similar to or may be narrower than for ice roads.

Ice roads for offshore access to North Slope facilities are typically constructed beginning in late December or January and are used through approximately mid-May, depending on weather. All ice road, trail and pad construction by both Hilcorp and Eni would be initiated prior to March 1st to minimize potential impacts to ringed seals. Specific details regarding each company's ice roads, trails and pads are provided in Section 1.2.

### 1.1. Purpose of the Plan

In order to issue an LOA for an activity, Section 101(a)(5) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking." This marine mammal monitoring and mitigation plan (4MP) is a component of the request for rulemaking.

The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for Incidental Take Authorizations (ITAs) must include the suggested means of accomplishing the necessary monitoring and reporting that would result in an increased knowledge of the species and the level of taking or impacts on populations of marine mammals that are expected to be present in the Action Area.

Hilcorp and Eni recognize that monitoring requirements should be designed to improve the understanding of one or more of the following:

- Occurrence of marine mammal species in the Action Area (e.g., presence, abundance, distribution, density);

- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: 1) action or environment; 2) affected species (e.g., life history, dive patterns); 3) co-occurrence of marine mammal species with the action; or 4) biological or behavioral context of exposure (e.g., age, birthing or foraging areas);
- Individual responses to acute stressors, or impacts of chronic exposures (behavioral or physiological);
- How anticipated responses to stressors impact either: 1) long-term fitness and survival of an individual; or 2) population, species, or stock;
- Effects on marine mammal habitat and resultant impacts to marine mammals; and
- Mitigation and monitoring effectiveness.

In keeping with guidance provided by NMFS, Hilcorp and Eni have considered a number of monitoring and reporting opportunities that could contribute to the collective knowledge of the ringed seals and their habitat during the ice-covered season. However, during construction and maintenance of the ice roads, the potential to conduct meaningful research on potential impacts of these activities on ringed seals is limited for two reasons: 1) low densities and overall small numbers of ringed seals are anticipated to be in the region during ice-covered conditions; and 2) portions of the Action Areas are unsuitable for ringed seal lairs due to shallow depth or bottomfast ice. Generally, ringed seal densities are higher in water greater than 3 m (about 10 ft) in depth sufficient to allow underwater access to lairs and breathing holes.

## 1.2. Project Location and Description of Activities

Seasonal ice roads and trails are required to operate facilities at Northstar Island for Hilcorp, and at the Spy Island Drillsite (SID) and Oooguruk Drillsite (ODS) for Eni. The locations of these facilities in the Beaufort Sea are shown on Figure 1-1. Additional details on ice roads and trails constructed and maintained at the Northstar, SID and ODS facilities can be found in Sections 1.3 and 1.4 of the ITR petition.

Northstar, an artificial gravel island, is located in State of Alaska coastal waters about 9.7 kilometers (km) (6 miles [mi]) offshore from Point Storkersen in the Beaufort Sea (see Figures 1-1 and 1-2). Each year during the ice-covered season an approximately 11.7 km (7.3-mi) long ice road is constructed between Northstar and the Prudhoe Bay facilities at West Dock to transport personnel, equipment, materials, and supplies. In some years depending on operational needs and weather conditions, Hilcorp may elect to not build the main improved ice road. In this case, a primary ice trail that can support only tracked, lighter-weight vehicles would be built in the location of the improved ice road shown on Figure 1-4. Hilcorp usually builds the following unimproved ice trails to Northstar as shown in Figure 1-4:

- Along the pipeline corridor from the valve pad near the Dew Line site to Northstar (9.5 km; 5.9 mi),
- From West Dock to the pipeline shore crossing (grounded ice along the coastline – 7.8 km; 4.8 mi),

Two unimproved ice road paths from the hovercraft tent at Dockhead 2. One would go under the West Dock causeway bridge to Dockhead 1 (1.4 km; 0.9 mi,) and the other would go around West Dock and



intersect the main ice road north of the Seawater Treatment Plant (.6 km; .9 mi.). Water depth at the island is about 12 m (about 40 ft). This region is covered by landfast ice in winter and with water depths greater than 3 m (10 ft). It is considered to be important overwintering and spring breeding habitat for ringed seals.

The 0.05 square kilometer (km<sup>2</sup>) (11-acre) SID is also an artificial, gravel island constructed in shallow (1.8-2.4 m; 6-8 ft.), State of Alaska coastal waters approximately 4.8 km (3 mi) north of Oliktok Point and just south of the Spy Island barrier island (see Figures 1-1 and 1-3). Each year Eni builds an ice road extending 6.8 km (4.2 mi) offshore from Oliktok Production Pad (OPP) to SID. Following the same general construction methods used at Northstar, Eni also builds an unimproved ice trail just west of and parallel to the sea ice road corridor near SID. The ice trail is typically approximately 15 m (50 ft) west of the western edge of the ice road shoulder and is used when the ice road is being constructed. Once the ice road is open to regular traffic, the ice trail is not used. Two floating ice pad parking areas are also built at SID: a 152 m by 61 m (500 ft by 200 ft) area located on the southeast side of SID; and an additional 91 m by 46 m (300 ft by 150 ft) pad on the northeast side. While SID is situated in water depths considered unsuitable for ringed seals, each year a crack or lead has developed in the road between OPP and SID. Due to the open water in the ice at this location, seals may appear near this site as evident from the observation of a ringed seal pup in April 2018 (see Section 1.1 of the petition).

A single ice road and staging area ice pad are required each year to operate the ODS, which is situated in 1.2 to 1.8 m (4 to 6 ft) of water. As shown in Figure 1-4, the typical or proposed ice road extends 8.9 km (5.5 mi) offshore to the ODS. An alternative ice road as shown on Figure 1-5 would be located in shallower water and, therefore, can be grounded and used earlier in the season. The alternative route extends 11.2 km (7 mi) offshore and is used in years when an early road completion is required or when extra heavy loads, such as a drilling rig are expected. Either ice road is up to approximately 15 m (50 ft) wide with a similar width shoulder area on each side. The shoulders of the road are used when traffic must periodically detour around equipment or in areas where ice road maintenance is occurring. In addition, a grounded ice pad staging area is constructed on the southwest edge of the ODS (see Figures 1-4 and 1-5). The dimensions of the staging area are approximately 183 by 137 m (600 by 450 ft).

Similar to SID, the location of ODS has water depths considered unsuitable for ringed seals; however, to be precautionary and due to the potential for changes in ice conditions associated with changes in climate, Eni is including the ODS in the ITR petition and this associated mitigation and monitoring plan.

In addition to the ice trails described above, Hilcorp and Eni may need to construct several shorter length trails into undisturbed areas to work around unstable and unsafe areas of ice as the season progresses. Due to safety considerations these work-around or detour trails may need to be constructed after arch<sup>st</sup>. Typically, these detours deviate approximately 23 to 46 m (75 to 150 ft) from the original road or trail to allow crews to safely go around soft spots or cracks.



Figure 1-1. Regional Map

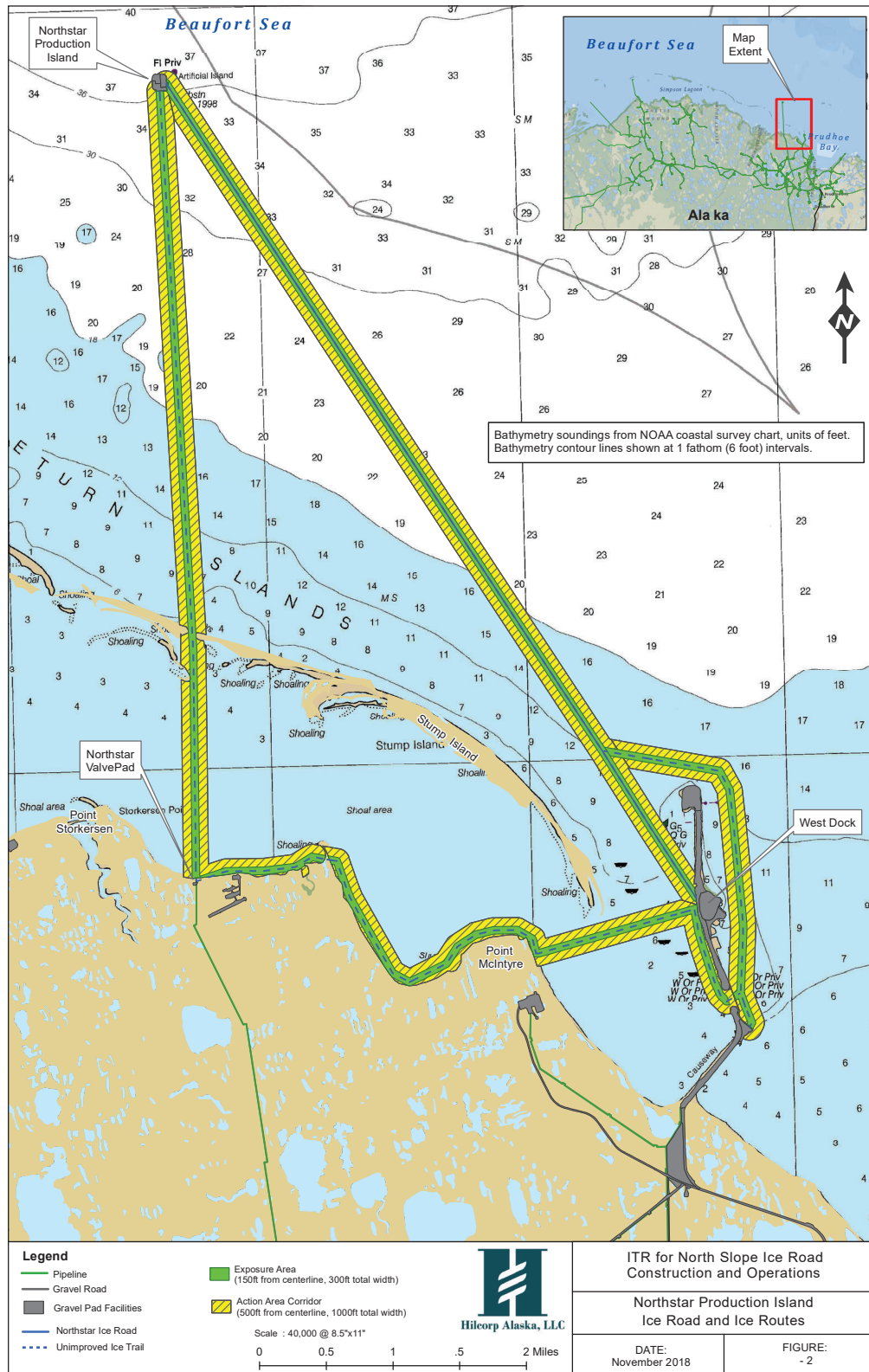


Figure 1-2. Northstar Production Island Ice Roads and Trails

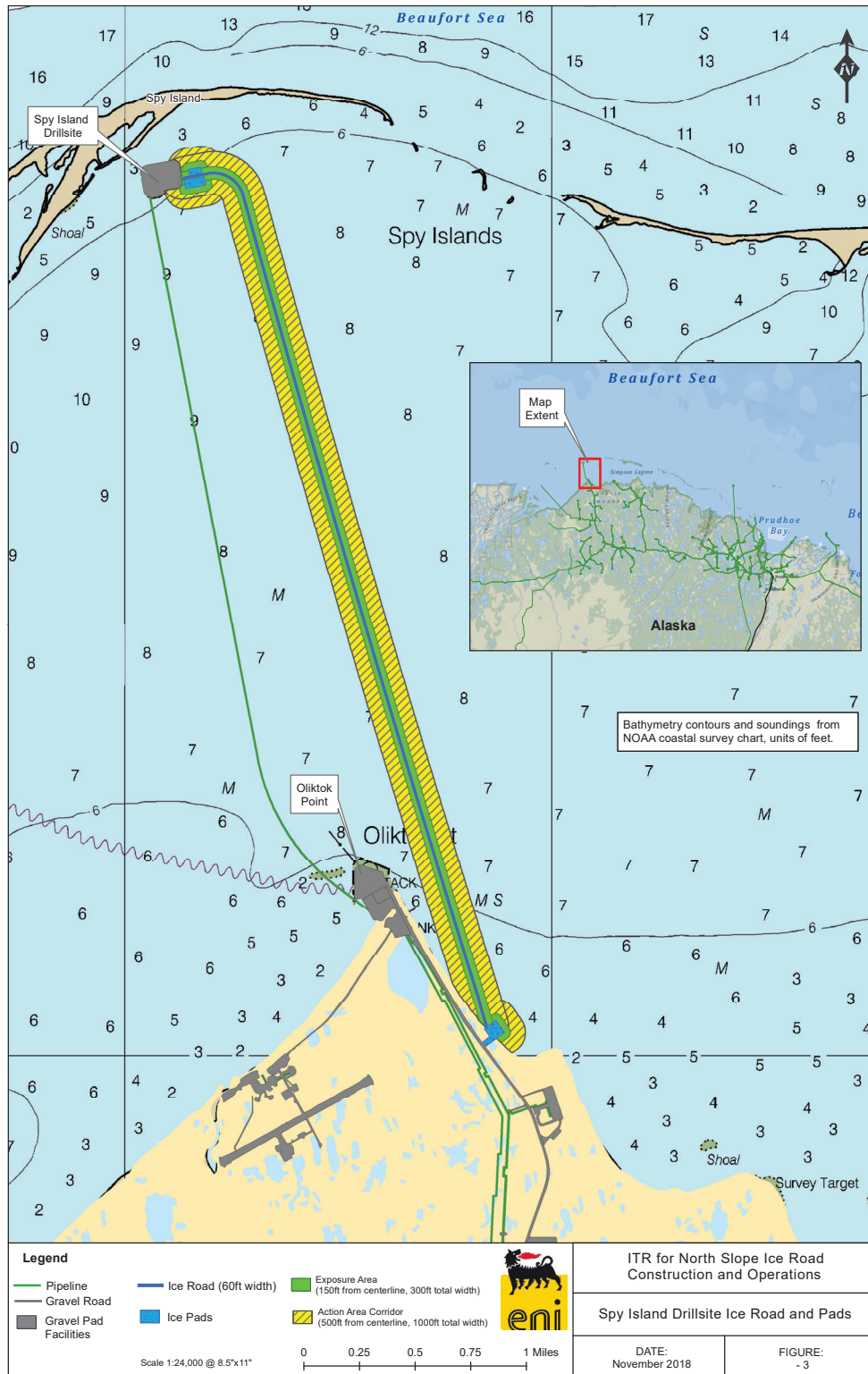


Figure 1-3. SID Ice Road/Trail and Ice Pads



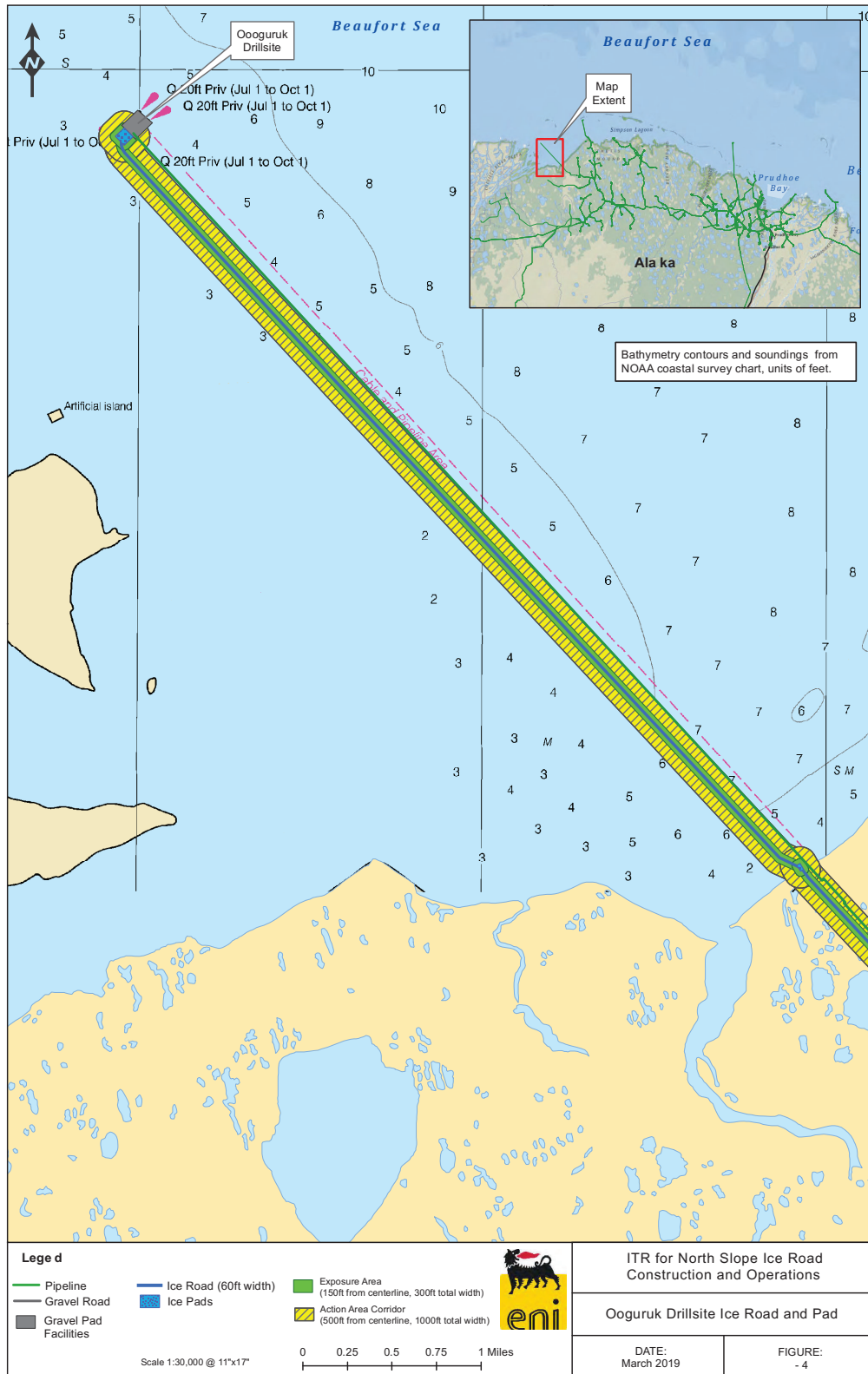
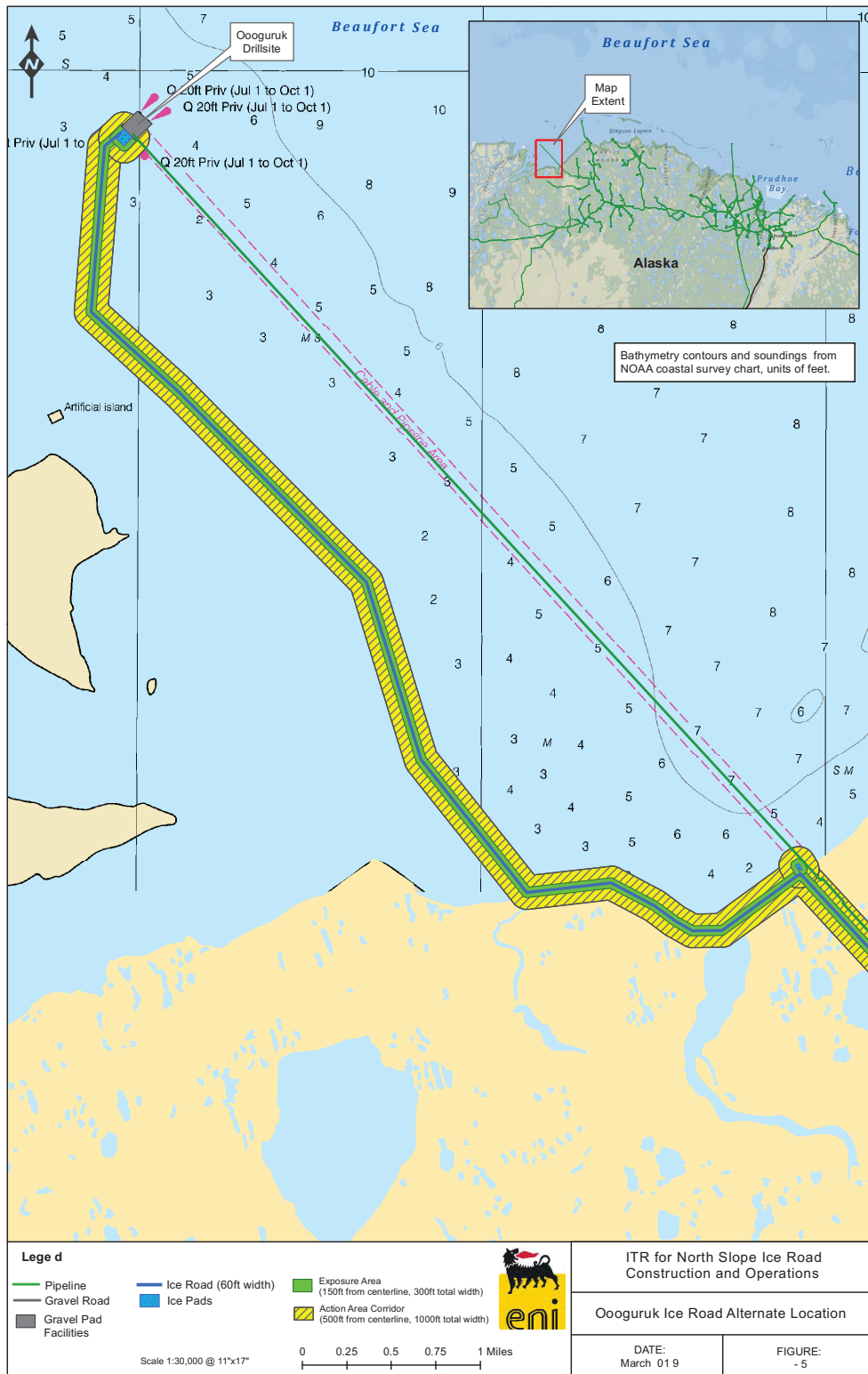


Figure 1-4. Ooguruk Drillsite Ice Road and Ice Pad



**Figure 1-5. Oooguruk Ice Road Alternate Location**

## 2. MITIGATION AND MONITORING

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Hilcorp and Eni perform ice-road construction in accordance with the best guidance available to avoid and minimize (to the greatest extent possible) impacts on the environment, ESA species, designated critical habitats and species protected under the MMPA. In order to avoid ringed seal dens or lairs, and to reduce the taking of ringed seals to the lowest level practicable, the following specific ice road/trail mitigation and monitoring measures will ensure the least practicable impact on ringed seals and their habitat.

Potential measures include consideration of the following factors: 1) the degree to which the successful implementation of the measure is expected to minimize adverse impacts to ringed seals; 2) the proven efficacy of the specific measure to minimize adverse impacts as planned based on monitoring plans from previous, similar activities; and 3) safety, feasibility, and practicability during implementation of the measure. Based on these factors, the mitigation and monitoring measures described in this plan accomplish the following objectives:

- Avoid or minimize injury to or death of ringed seals or any marine mammals;
- Minimize the likelihood that impacts will occur to the species, stocks and subsistence use of marine mammals that might occur along the ice roads, or the overall Action Areas;
- Shut down or monitor activities when seals are observed in or approaching the monitoring zone defined as 50 m (about 164 ft) on either side of the centerline of the road/trail (i.e., 100 m [about 328 ft] total width); and
- Avoid overlap of ice road/trail activities with traditional subsistence hunting locations and events; and
- Quantify and potentially reduce the number of marine mammals exposed to or taken by harassment (Level B).

### 2.1. Mitigation Measures

Hilcorp and Eni perform ice road and trail construction in accordance with the best guidance available to avoid and minimize (to the greatest extent possible) impacts on the environment, species protected under the MMPA and ESA, and designated critical habitats. In order to avoid ringed seal breathing holes and lairs, and to reduce the taking of ringed seals to the lowest level practicable, the following specific mitigation measures will ensure the least practicable impact on ringed seals and their habitat. These measures are proposed for the construction and maintenance of sea ice roads and trails in areas where water depth is greater than 3 m (10 ft) (the minimum depth preferred by ringed seals for establishing lairs) as well as any open leads in the sea ice requiring a temporary bridge during the ice road season. While the location of ODS has water depths considered unsuitable for ringed seals, to be precautionary and due potential changes in ice conditions and ringed seal habitat, Eni is including the ODS in this petition to ensure compliance with the MMPA. Ice road, trail and pad activities are described in Section 1.3. These measures were developed through close coordination with NMFS OPR and AKR. In letters to Eni (October , 2018) and Hilcorp (December 7, 2018), NMFS confirmed agreement with implementation of interim mitigation measures for the 2018-19 season. The interim mitigation and monitoring measures have been further refined and are described in Section 2.5 of this Plan.



The mitigation and monitoring measures are organized into the following categories: 1) Wildlife Training; 2) General Mitigation Measures (implemented throughout the ice road/trail season December through May); 3) mitigation measures to be implemented after March<sup>st</sup>; and 4) Reporting Requirements.

## 2.2. Wildlife Training

Prior to initiation of sea ice road and trail construction activities, project personnel associated with ice road construction, maintenance, or use (i.e., construction workers, surveyors, vehicle operators, security personnel, and the environmental team) will receive annual training on seal avoidance mitigation measures that is appropriate for the work that they will perform. The annual training for all such personnel will include reviewing applicable portions of the company's Wildlife Interaction Plan, which include the following measures:

- Do not approach or interact with any wildlife, it is prohibited.
- When traveling the ice road, follow directions of Security and posted signs.
- Notify appropriate personnel if a seal is observed within 50 m (164 ft) or if a seal structure (i.e., breathing hole or lair) is observed within 150 m (about 500 ft) of the centerline of the ice road/trail; or the edge of the ice pad or on the ice pad.
- Stay in the vehicle and continue safely on if a seal is observed near the road.

In addition to company-specific information and review of the mitigation measures, additional wildlife training for personnel involved in ice road construction/maintenance or seal monitoring will include:

- How to identify ringed seal adults and pups;
- Seal life history;
- Habitat and diet;
- Presence in project area;
- Importance of lairs, breathing holes and basking;
- Potential effects of disturbance; and
- Applicable laws and regulatory requirements.

## 2.3. General Mitigation Measures

These mitigation measures will be followed throughout the ice road/trail season. They are based on the following assumptions:

- Ice road/trail/pad construction occurs from approximately December<sup>st</sup> to mid-February (or as soon as sea ice conditions allow safe access and permit such activity);
- Operations and maintenance generally occur from approximately mid-February through mid- to late May. Ringed seals begin to establish lairs in late March. Therefore, NMFS is requiring that ice road construction be initiated no later than March<sup>st</sup> to reduce the potential for disturbance to ringed seal birth lairs or dens; and

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<sup>1</sup> Training rosters can be made available to audit if requested.  
May also be referred to as a Wildlife Management Plan.

- Disturbance associated with construction prior to March<sup>st</sup> may deter pregnant seals from establishing lairs in the disturbed areas.

Winter sea ice road/trail/pad construction and use will begin prior to March<sup>st</sup> of each year (typically December through mid-February), which is before female ringed seals establish birthing lairs. Initiating on-ice activities early allows ringed seals to establish breathing holes and birthing lairs in undisturbed areas. Prior to establishing lairs, ringed seals are mobile and are expected to avoid the ice roads/trails/pads and construction activities.

The following mitigation measures will be implemented throughout the entire ice road/trail season, including during construction, maintenance, active use, and decommissioning:

- . Ice road/trail speed limits will be no greater than 45 miles per hour (mph); speed limits will be determined on a case-by-case basis based on environmental, road conditions and ice road/trail longevity considerations. Travel on ice roads and trails is restricted to industry staff.
  - . Following existing safety measures, delineators will mark the roadway in a minimum of ¼-mile increments on both sides of the ice road to delineate the path of vehicle travel and areas of planned on-ice activities (e.g., emergency response exercises). Following existing safety measures currently used for ice trails, delineators will mark one side of an ice trail a minimum of every ¼ mile. Delineators may also be used to mark the centerline of the roadway.
  - . Corners of rig mats, steel plates, and other materials used to bridge sections of hazardous ice, will be clearly marked or mapped using GPS coordinates of the locations.
  - . Personnel will be instructed that approaching or interacting with ringed seals is prohibited.
  - . If personnel encounter a ringed seal while driving on the road, they will be instructed to remain in the vehicle and safely continue.
6. If a ringed seal is observed within 50 m ( 64 ft) of the center of an ice road or trail or within 50 m (164 ft) of the ice pad edge or on the ice pad, the company's Security personnel or staff member who observed the seal contacts the Environmental Specialist in accordance with the Wildlife Management Plan with the information requested in Section 2.8 *Data Collection*.
- a. The location of the seal will be physically marked with a visible marker while maintaining a distance of at least 15 m (50 ft) from the seal. However, markers will be placed in a way that avoids marker placement more than 15 m (50 ft) from the edge of the ice road/trail/pad.
  - b. The Environmental Specialist will relay the seal sighting location information to all ice road/trail/pad personnel and the company's office personnel responsible for wildlife interaction, following notification protocols described in the company-specific Wildlife Management Plan. All other data will be recorded and logged.
  - c. The Environmental Specialist or designated person will monitor the ringed seal to document the animal's location relative to the road/trail/pad. All work that is occurring

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There are periods during which ice road travel does not occur. During these periods, no activity would occur along the road and therefore, implementation of measures would not be necessary.

The interval between delineators is specific to existing ice road safety measures and relates to how drivers assess and report weather and roadway conditions.

when the ringed seal is observed and the behavior of the seal during those activities will be documented until the animal is at least 50 m (164 ft) away from the center of the road/trail/pad or from the edge of the ice pad or until the animal is no longer observed.

- d. The Environmental Specialist or designated person will contact appropriate state and federal agencies as required (see company-specific Wildlife Plans for notification details).

Other on-ice activities occurring prior to March <sup>st</sup> could include spill training exercises, pipeline surveys, snow clearing, and work conducted by vehicles such as PistenBullys®, snow machines, or rolligons. Prior to March <sup>st</sup>, these activities could occur outside of the delineated ice road/trail/pad and shoulder areas. Also during this period, all general mitigation measures will be implemented.

## 2.4. Mitigation Measures After March 1<sup>st</sup>

After March <sup>st</sup> and continuing until decommissioning of ice roads/trails/pads in late May or early June, on-ice activities can occur anywhere on sea ice where water depth is less than 3 m (10 ft) (i.e., habitat not suitable for ringed seal lairs and breathing holes). However, after March <sup>st</sup> on those sections of the ice roads/trails/pads where water depth is greater than 3 m (10 ft), all activities must occur within the boundaries of the driving lane/ice pad or shoulder area of the ice road/trail/pad (see Figure 2-1) and other previously disturbed areas (e.g., spill and emergency response areas, snow push areas), as long as personnel safety is ensured. In addition to the general mitigation measures, the following measures will also be implemented after March 1<sup>st</sup>:

- Ice road/trail construction, maintenance and decommissioning will be performed within the boundaries of the road/trail and shoulders, with most work occurring within the driving lane. Equipment travel will be limited to within the driving lane and shoulder when safety of personnel can be ensured (see Figure 2-1).
- Ice road/trail/pad construction and maintenance activities will remain 50 m (64 ft) from a seal and 150 m (about 500 ft) from a seal structure (i.e., breathing holes and lairs) except under emergency conditions when blading or snow blowing is necessary. If blading or snow blowing must occur within 50 m (64 ft) from a seal or 150 m (about 500 ft) from a seal structure, the snow will first be pushed so that it is blown downwind of the animal or lair.
- Vehicles will not stop within 50 m (64 ft) of identified seals or 150 m (about 500 ft) of known seal lairs.
- Tracked vehicle operations will be limited to the previously disturbed ice trail areas when safety of personnel can be ensured. When safety requires a new ice trail to be constructed

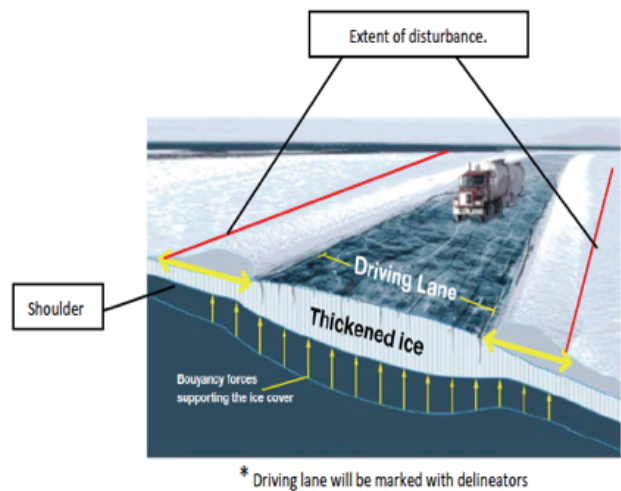


Figure 2-1. Ice Road Schematic

after March 1st, construction activities such as drilling holes in the ice to determine ice quality and thickness will be conducted only during daylight hours with good visibility. Ringed seal structures will be avoided by a minimum of 150 m (about 500 ft) during ice testing and new trail construction. Any observed ringed seal structures will be reported and marked as described in Section 2.7. Once the new ice trail is established, tracked vehicle operation will be limited to the disturbed area when safety of personnel is ensured.

## 2.5. Monitoring Measures

The following monitoring and reporting activities will be implemented by Eni and Hilcorp, along with the mitigation measures described in Sections 2.3 and 2.4, to avoid and minimize potential impacts to ringed seals during ice road/trail construction, operation and maintenance each year.

## 2.6. Ringed Seal Surveys

If an ice road or trail is being actively used<sup>6</sup>, a dedicated observer will conduct a survey along the sea ice road/trail during daylight conditions with good visibility to observe if any ringed seals are within 150 m (about 500 ft) of the roadway corridor. These protocols will be followed:

- Surveys will be conducted every other day during daylight hours. Survey protocol consists of driving the ice road and stopping every ½ mile to observe the exposure area for approximately 5 minutes on either side of the corridor to check for the presence of seals.
- Observers for ice road/trail activities need not be trained Protected Species Observers (PSOs), but they must have received the training described in Section 1 and understand the applicable sections of the Wildlife Management Plan. In addition, they must be capable of detecting, observing and monitoring ringed seal presence and behaviors, and accurately and completely recording data.
- When performing observations, observers will have no other primary duty than to watch for and report observations related to ringed seals during this survey. If the observer is driving a vehicle, then the survey must be performed when the driver stops, at periodic intervals sufficient to complete a thorough assessment of the area, given visibility conditions. If weather conditions become unsafe, the monitoring activity will be discontinued.

## 2.7. Communication and Monitoring Procedures for Seal and Seal Structure Sightings

If a ringed seal is observed within 50 m (164 ft) or if a seal structure (i.e., breathing hole or lair) is observed within 150 m (about 500 ft) of the centerline of the ice road/trail, or the edge of the ice pad or on the ice pad, the location of the seal or seal structure will be reported to the Environmental Specialist<sup>7</sup>, who will then relay the sighting location information to all ice road personnel. In addition, the company's office personnel responsible for wildlife interaction would be notified following protocols described in each company's specific Wildlife Interaction Plan (see also Section 2.9 *Reporting*). The following procedures will also be followed:

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<sup>6</sup> Any days when there is no traffic on an ice road, monitoring for ringed seals will not occur in order to minimize potential for interactions with seals.

<sup>7</sup> Also referred to as an Environmental Advisor in Wildlife Management / Interaction Plans.

- . Construction, maintenance or decommissioning activities associated with ice roads, trails and pads will not occur within 50 m (164 ft) of the observed ringed seal, but may proceed as soon as the animal moves on its own more than 50 m (164 ft) from the activities or has not been observed within that area for at least 24 hours. Transport vehicles (i.e., vehicles not associated with construction, maintenance or decommissioning) may continue their route within the designated road/trail without stopping.
- . As soon as practicable after the initial sighting, the Environmental Specialist or designated person will observe the ringed seal for approximately 15 minutes to document the animal's location relative to the road/trail/pad. All work that is occurring when the ringed seal is observed and the behavior of the seal during this observation period will be documented until the animal moves more than 50 m (164 ft) from the center of the road/trail, or more than 50 m (164 ft) from the edge of the ice pad, or is no longer observed. If the seal remains in the area after the 15-minute observation period, monitoring will continue every six hours during daylight conditions.
- . If a ringed seal structure (i.e., breathing hole or lair) is observed within 150 m (about 500 ft) of the ice road/trail, the location of the structure will be reported to the Environmental Specialist who will then carry out notification protocol described above.
  - a. The seal structure will be marked by placing a pole and flag or other easily visible marker about 50 m (164 ft) from the location of the lair.
  - b. Monitoring will continue every six hours during daylight conditions on the day of the initial sighting to determine whether a ringed seal is present. Monitoring will consist of observing the structure from a distance of at least 150 m (about 500 ft) for approximately 15 minutes each time. After the first 24 hours, monitoring for the seal will occur every other day the ice road/trail/pad is being used unless it is determined the structure is not actively being used (i.e., a seal is not sighted at that location during monitoring). A lair or breathing hole does not automatically imply that a ringed seal is present.
  - c. During this monitoring period, maintenance work will proceed cautiously as to minimize impacts or disturbance to area.

## 2.8. Data Collection

The Environment Specialist, or designated person, will record the following information during survey efforts and sighting events:

- . The date and start/stop time for each survey including effort in total number of hours of observation. This will include a summary of environmental conditions such as visibility that can affect ringed seal or lair detection;
- . Date and time of each significant event ( e.g., seal or seal structure sighting) and subsequent monitoring;
- . Date, time, and duration for each sighting event;
- . Number of animals per sighting event; and number of adults/juveniles/pups per sighting event;

- . Primary, and, if observed, secondary behaviors of seals in each sighting event;
- 6. Geographic coordinates for the observed animals or structure (breathing hole or lair), with the position recorded by using the most precise coordinates practicable (coordinates must be recorded in decimal degrees, or similar standard, and defined coordinate system); and
- 7. Mitigation measures implemented to minimize impacts.

## **2.9. Reporting**

Hilcorp and Eni propose to each submit an annual monitoring report after the end of the ice road/trail/pad season to summarize the activities during ice road/trail/pad construction, maintenance, use and de-commissioning that occurred approximately December through May of that year. Records associated with any ringed seal observations and monitoring will be transmitted to NMFS prior to each subsequent ice road/trail season (i.e., generally by late summer, prior to the subsequent ice road/trail/pad season).

If a specific mitigation or monitoring measure is implemented during the ice road/trail activities (e.g., a breathing hole is monitored for seal presence), then a preliminary report of the activity will be submitted within days after the cessation of that activity.

If a seal is observed within 50 m (164 ft) of the roadway during ice road/trail activities, or the edge of the ice pad or on the ice pad then notification to the Environmental Specialist and other staff and agency personnel will be undertaken as described above.

### **2.9.1. Annual Monitoring Report**

Annual and final reports will be submitted via electronic mail to the appropriate NMFS staff including the NMFS AKR Protected Resources Division Supervisor and staff in OPR, Permits and Conservation Division in Silver Spring, Maryland.

Digital, queryable documents containing all observations and records, and digital, queryable reports will be submitted to: NMFS AKR Protected Resources Division Supervisor, Greg Balogh, at [greg.balogh@noaa.gov](mailto:greg.balogh@noaa.gov) and to OPR, Permits and Conservation Division, NMFS, and Shane Guan, at [shane.guan@noaa.gov](mailto:shane.guan@noaa.gov). In the event that this contact information becomes obsolete, call 907-271-5006 for updated reporting contact information.

### **2.9.2. Reporting of Unforeseen Events**

In the unanticipated event that the specified activities along the ice road construction clearly causes the take of a marine mammal in a manner prohibited by the LOA, such as an unforeseen injury or mortality to a pinniped, the observer will report the incident to the Environmental Specialist, in accordance with their Wildlife Interaction/Management Plan, who would then relay that information to the OPR, Permits and Conservation Division, NMFS, and NMFS AKR Protected Resources Division (contact information provided above). This communication would occur as soon as practicable. A report documenting the incident would include:

- Time, date, and location (latitude/longitude) of the incident;
- Description of the incident;
- Water depth;



- Environmental conditions (e.g., wind speed and direction, and visibility);
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

In the event that an observer or company personnel discovers an injured or dead marine mammal, the cause of the injury or death is unknown, and the death is relatively recent (i.e., in less than a moderate state of decomposition), the incident would be reported to the OPR, Chief of the Permits and Conservation Division, NMFS in Silver Spring, Maryland (01-427-8 401) and the Marine Mammal Network Alaska Stranding Coordinator in Alaska (Phone number 1-877-92 -7773 or 1-877-9-AKR-PRD), as soon as practicably possible. The report would include the same information identified in the paragraph above. Activities would be allowed to continue while NMFS reviews the circumstances of the incident. NMFS would work with Hilcorp or Eni to determine whether modifications in the activities are appropriate.

Under such circumstances that the injury or death is not associated with or related to the activities authorized in the LOA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), the incident would be reported to the OPR, Chief of the Permits and Conservation Division, NMFS or by email to the Alaska Stranding Coordinator within 24 hours of the discovery. Photographs, video footage (if available), and any other documentation of the stranded animal sighting will be provided to NMFS and the Marine Mammal Stranding Network.



### 3. REFERENCES

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NMFS (National Marine Fisheries Service). 2000. Final Rule: Taking Marine mammals Incidental to Construction and Operations of Offshore Oil and Gas Facilities in the Beaufort Sea. *Federal Register*, Vol. 65, No. 102, Thursday May 25, 2000.

# **ALASKA NORTH SLOPE ICE ROAD AND ICE TRAIL BEST MANAGEMENT PRACTICES**

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## **Best Management Practices Introduction and Definitions**

The following Best Management Practices (BMPs) and monitoring measures are applicable to operations on the Alaska North Slope. They are proposed for the construction and maintenance of sea ice roads and sea ice trails in areas where water depth is greater than 10 feet (ft) (the minimum depth required to establish ringed seal lairs) as well as any open leads in the sea ice requiring a temporary bridge during the ice road season. These BMPs do not apply to land-based ice roads/trails or ice roads/trails crossing lakes. These measures are intended to avoid and minimize interactions with ringed seals. For the purposes of these BMPs, sea ice roads and trails are generally defined<sup>1</sup> as follows:

- Sea Ice Road: a route across sea ice created by clearing and grading snow, then pumping seawater through drilled holes in the sea ice until the desired thickness is achieved. The top layer is typically strengthened by a fresh water cap of ice.
- Sea Ice Trail: a route across sea ice created, used and maintained by equipment such as Tuckers, PistenBullys, snow machines or similar tracked equipment. Sea ice trails do not require seawater flooding.

Hilcorp and Eni perform ice-road construction in accordance with the best guidance available to avoid and minimize (to the greatest extent possible) impacts on the environment, ESA species, designated critical habitats and species protected under the MMPA. In order to avoid ringed seal dens or lairs, and to reduce the taking of ringed seals to the lowest level practicable, the following specific ice road/trail mitigation and monitoring measures will ensure the least practicable impact on ringed seals and their habitat.

Potential measures include consideration of the following factors: 1) the degree to which the successful implementation of the measure is expected to minimize adverse impacts to ringed seals; 2) the proven efficacy of the specific measure to minimize adverse impacts as planned based on monitoring plans from previous, similar activities; and 3) safety, feasibility, and practicability during implementation of the measure. Based on these factors, the mitigation and monitoring measures described in this plan accomplish the following objectives:

- Avoid or minimize injury to or death of ringed seals or any marine mammals;
- Minimize the likelihood that impacts will occur to the species, stocks and subsistence use of marine mammals that might occur along the ice roads, or the overall Action Areas;
- Shut down or monitor activities when seals are observed in or approaching the monitoring zone defined as 50 m (about 164 ft) on either side of the centerline of the road/trail (i.e., 100 m [about 328 ft] total width); and
- Avoid overlap of ice road/trail activities with traditional subsistence hunting locations and events; and

- Quantify and potentially reduce the number of marine mammals exposed to or taken by harassment (Level B).

The BMP is organized into the following categories: 1) Wildlife Training; 2) General Mitigation Measures (implemented throughout the ice road/trail season December through May); 3) mitigation measures to be implemented after March 1<sup>st</sup>; 4) Monitoring Measures; and 5) Reporting Requirements.

## 1. Wildlife Training

Prior to initiation of sea ice road and trail construction activities, project personnel associated with ice road construction, maintenance, or use (i.e., construction workers, surveyors, vehicle operators, security personnel, and the environmental team) will receive annual training<sup>1</sup> on seal avoidance mitigation measures that is appropriate for the work that they will perform. The annual training for all such personnel will include reviewing applicable portions of the company's Wildlife Interaction Plan<sup>2</sup>, which include the following measures:

- Do not approach or interact with any wildlife, it is prohibited.
- When traveling the ice road, follow directions of Security and posted signs.
- Notify appropriate personnel if a seal is observed within 50 m (164 ft) or if a seal structure (i.e., breathing hole or lair) is observed within 150 m (about 500 ft) of the centerline of the ice road/trail; or the edge of the ice pad or on the ice pad.
- Stay in the vehicle and continue safely on if a seal is observed near the road.

In addition to company-specific information and review of the mitigation measures, additional wildlife training for personnel involved in ice road construction/maintenance or seal monitoring will include:

- How to identify ringed seal adults and pups;
- Seal life history;
- Habitat and diet;
- Presence in project area;
- Importance of lairs, breathing holes and basking;
- Potential effects of disturbance; and
- Applicable laws and regulatory requirements.

## 2. General Mitigation Measures

These mitigation measures will be followed throughout the ice road/trail season. They are based on the following assumptions:

- Ice road/trail/pad construction occurs from approximately December 1<sup>st</sup> to mid-February (or as soon as sea ice conditions allow safe access and permit such activity);
- Operations and maintenance generally occur from approximately mid-February through mid- to late May. Ringed seals begin to establish lairs in late March. Therefore, NMFS is requiring that

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<sup>1</sup> Training rosters can be made available to audit if requested.

<sup>2</sup> May also be referred to as a Wildlife Management Plan.

ice road construction be initiated no later than March 1<sup>st</sup> to reduce the potential for disturbance to ringed seal birth lairs or dens; and

- Disturbance associated with construction prior to March 1<sup>st</sup> may deter pregnant seals from establishing lairs in the disturbed areas.

Winter sea ice road/trail/pad construction and use will begin prior to March 1<sup>st</sup> of each year (typically December through mid-February), which is before female ringed seals establish birthing lairs. Initiating on-ice activities early allows ringed seals to establish breathing holes and birthing lairs in undisturbed areas. Prior to establishing lairs, ringed seals are mobile and are expected to avoid the ice roads/trails/pads and construction activities.

The following mitigation measures will be implemented throughout the entire ice road/trail season, including during construction, maintenance, active use<sup>3</sup>, and decommissioning:

1. Ice road/trail speed limits will be no greater than 45 miles per hour (mph); speed limits will be determined on a case-by-case basis based on environmental, road conditions and ice road/trail longevity considerations. Travel on ice roads and trails is restricted to industry staff.
2. Following existing safety measures, delineators will mark the roadway in a minimum of ¼-mile increments<sup>4</sup> on both sides of the ice road to delineate the path of vehicle travel and areas of planned on-ice activities (e.g., emergency response exercises). Following existing safety measures currently used for ice trails, delineators will mark one side of an ice trail a minimum of every ¼ mile. Delineators may also be used to mark the centerline of the roadway.
3. Corners of rig mats, steel plates, and other materials used to bridge sections of hazardous ice, will be clearly marked or mapped using GPS coordinates of the locations.
4. Personnel will be instructed that approaching or interacting with ringed seals is prohibited.
5. If personnel encounter a ringed seal while driving on the road, they will be instructed to remain in the vehicle and safely continue.
6. If a ringed seal is observed within 50 m (164 ft) of the center of an ice road or trail or within 50 m (164 ft) of the ice pad edge or on the ice pad, the company's Security personnel or staff member who observed the seal contacts the Environmental Specialist in accordance with the Wildlife Management Plan with the information requested in Section 2.8 *Data Collection*.
  - a. The location of the seal will be physically marked with a visible marker while maintaining a distance of at least 15 m (50 ft) from the seal. However, markers will be placed in a way that avoids marker placement more than 15 m (50 ft) from the edge of the ice road/trail/pad.
  - b. The Environmental Specialist will relay the seal sighting location information to all ice road/trail/pad personnel and the company's office personnel responsible for wildlife interaction, following notification protocols described in the company-specific Wildlife Management Plan. All other data will be recorded and logged.

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<sup>3</sup> There are periods during which ice road travel does not occur. During these periods, no activity would occur along the road and therefore, implementation of measures would not be necessary.

<sup>4</sup> The interval between delineators is specific to existing ice road safety measures and relates to how drivers assess and report weather and roadway conditions.

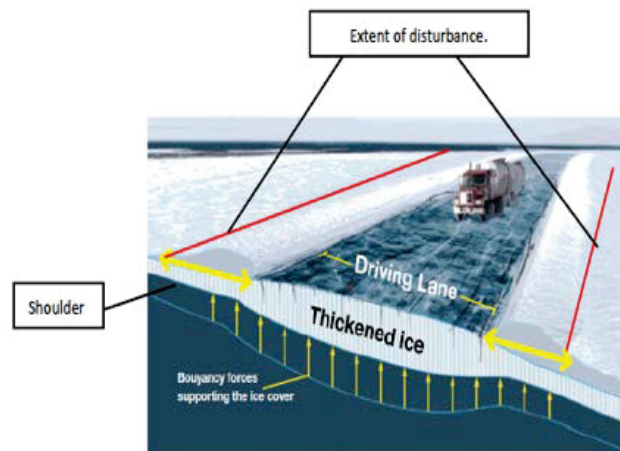
- c. The Environmental Specialist or designated person will monitor the ringed seal to document the animal's location relative to the road/trail/pad. All work that is occurring when the ringed seal is observed and the behavior of the seal during those activities will be documented until the animal is at least 50 m (164 ft) away from the center of the road/trail/pad or from the edge of the ice pad or until the animal is no longer observed.
- d. The Environmental Specialist or designated person will contact appropriate state and federal agencies as required<sup>5</sup> (see company-specific Wildlife Plans for notification details).

Other on-ice activities occurring prior to March 1<sup>st</sup> could include spill training exercises, pipeline surveys, snow clearing, and work conducted by vehicles such as PistenBullys®, snow machines, or rolligons. Prior to March 1<sup>st</sup>, these activities could occur outside of the delineated ice road/trail/pad and shoulder areas. Also during this period, all general mitigation measures will be implemented.

### 3. Mitigation Measures After March 1<sup>st</sup>

After March 1<sup>st</sup> and continuing until decommissioning of ice roads/trails/pads in late May or early June, on-ice activities can occur anywhere on sea ice where water depth is less than 3 m (10 ft) (i.e., habitat not suitable for ringed seal lairs and breathing holes). However, after March 1<sup>st</sup> on those sections of the ice roads/trails/pads where water depth is greater than 3 m (10 ft), all activities must occur within the boundaries of the driving lane/ice pad or shoulder area of the ice road/trail/pad (see Figure 2-1) and other previously disturbed areas (e.g., spill and emergency response areas, snow push areas), as long as personnel safety is ensured. In addition to the general mitigation measures, the following measures will also be implemented after March 1<sup>st</sup>:

1. Ice road/trail construction, maintenance and decommissioning will be performed within the boundaries of the road/trail and shoulders, with most work occurring within the driving lane. Equipment travel will be limited to within the driving lane and shoulder when safety of personnel can be ensured (see Figure 2-1).
2. Ice road/trail/pad construction and maintenance activities will remain 50 m (164 ft) from a seal and 150 m (about 500 ft) from a seal structure (i.e., breathing holes and lairs) except under emergency conditions when blading or snow blowing is necessary. If blading or snow blowing must occur within 50 m (164 ft) from a seal or 150 m (about 500 ft) from a seal structure, the snow will first be pushed so that it is blown downwind of the animal or lair.
3. Vehicles will not stop within 50 m (164 ft) of identified seals or 150 m (about 500 ft) of known seal lairs.
4. Tracked vehicle operations will be limited to the previously disturbed ice trail areas when



**Figure 2-1. Ice Road Schematic**

<sup>5</sup> As detailed in the Wildlife Management Plan.

safety of personnel can be ensured. When safety requires a new ice trail to be constructed after March 1st, construction activities such as drilling holes in the ice to determine ice quality and thickness will be conducted only during daylight hours with good visibility. Ringed seal structures will be avoided by a minimum of 150 m (about 500 ft) during ice testing and new trail construction. Any observed ringed seal structures will be reported and marked as described in Section 2.7. Once the new ice trail is established, tracked vehicle operation will be limited to the disturbed area when safety of personnel is ensured.

#### **4. Monitoring Measures**

The following monitoring and reporting activities will be implemented by Eni and Hilcorp, along with the mitigation measures described in Sections 2.3 and 2.4, to avoid and minimize potential impacts to ringed seals during ice road/trail construction, operation and maintenance each year.

##### **4.1 Ringed Seal Surveys**

If an ice road or trail is being actively used<sup>6</sup>, a dedicated observer will conduct a survey along the sea ice road/trail during daylight conditions with good visibility to observe if any ringed seals are within 150 m (about 500 ft) of the roadway corridor. These protocols will be followed:

1. Surveys will be conducted every other day during daylight hours. Survey protocol consists of driving the ice road and stopping every ½ mile to observe the exposure area for approximately 5 minutes on either side of the corridor to check for the presence of seals.
2. Observers for ice road/trail activities need not be trained Protected Species Observers (PSOs), but they must have received the training described in Section 1 and understand the applicable sections of the Wildlife Management Plan. In addition, they must be capable of detecting, observing and monitoring ringed seal presence and behaviors, and accurately and completely recording data.
3. When performing observations, observers will have no other primary duty than to watch for and report observations related to ringed seals during this survey. If the observer is driving a vehicle, then the survey must be performed when the driver stops, at periodic intervals sufficient to complete a thorough assessment of the area, given visibility conditions. If weather conditions become unsafe, the monitoring activity will be discontinued.

##### **4.2 Communication and Monitoring Procedures for Seal and Seal Structure Sightings**

If a ringed seal is observed within 50 m (164 ft) or if a seal structure (i.e., breathing hole or lair) is observed within 150 m (about 500 ft) of the centerline of the ice road/trail, or the edge of the ice pad or on the ice pad, the location of the seal or seal structure will be reported to the Environmental Specialist<sup>7</sup>, who will then relay the sighting location information to all ice road personnel. In addition, the company's office personnel responsible for wildlife interaction would be notified following protocols described in

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<sup>6</sup> Any days when there is no traffic on an ice road, monitoring for ringed seals will not occur in order to minimize potential for interactions with seals.

<sup>7</sup> Also referred to as an Environmental Advisor in Wildlife Management / Interaction Plans.

each company's specific Wildlife Interaction Plan (see also Section 2.9 *Reporting*). The following procedures will also be followed:

1. Construction, maintenance or decommissioning activities associated with ice roads, trails and pads will not occur within 50 m (164 ft) of the observed ringed seal, but may proceed as soon as the animal moves on its own more than 50 m (164 ft) from the activities or has not been observed within that area for at least 24 hours. Transport vehicles (i.e., vehicles not associated with construction, maintenance or decommissioning) may continue their route within the designated road/trail without stopping.
2. As soon as practicable after the initial sighting, the Environmental Specialist or designated person will observe the ringed seal for approximately 15 minutes to document the animal's location relative to the road/trail/pad. All work that is occurring when the ringed seal is observed and the behavior of the seal during this observation period will be documented until the animal moves more than 50 m (164 ft) from the center of the road/trail, or more than 50 m (164 ft) from the edge of the ice pad, or is no longer observed. If the seal remains in the area after the 15-minute observation period, monitoring will continue every six hours during daylight conditions.
3. If a ringed seal structure (i.e., breathing hole or lair) is observed within 150 m (about 500 ft) of the ice road/trail, the location of the structure will be reported to the Environmental Specialist who will then carry out notification protocol described above.
  - a. The seal structure will be marked by placing a pole and flag or other easily visible marker about 15 m (50 ft) from the location of the lair.
  - b. Monitoring will continue every six hours during daylight conditions on the day of the initial sighting to determine whether a ringed seal is present. Monitoring will consist of observing the structure from a distance of at least 150 m (about 500 ft) for approximately 15 minutes each time. After the first 24 hours, monitoring for the seal will occur every other day the ice road/trail/pad is being used unless it is determined the structure is not actively being used (i.e., a seal is not sighted at that location during monitoring). A lair or breathing hole does not automatically imply that a ringed seal is present.
  - c. During this monitoring period, maintenance work will proceed cautiously as to minimize impacts or disturbance to area.

### **4.3 Data Collection**

The Environment Specialist, or designated person, will record the following information during survey efforts and sighting events:

1. The date and start/stop time for each survey including effort in total number of hours of observation. This will include a summary of environmental conditions such as visibility that can affect ringed seal or lair detection;
2. Date and time of each significant event ( e.g., seal or seal structure sighting) and subsequent monitoring;
3. Date, time, and duration for each sighting event;



4. Number of animals per sighting event; and number of adults/juveniles/pups per sighting event;
5. Primary, and, if observed, secondary behaviors of seals in each sighting event;
6. Geographic coordinates for the observed animals or structure (breathing hole or lair), with the position recorded by using the most precise coordinates practicable (coordinates must be recorded in decimal degrees, or similar standard, and defined coordinate system); and
7. Mitigation measures implemented to minimize impacts.

## **5. Reporting**

Hilcorp and Eni propose to each submit an annual monitoring report after the end of the ice road/trail/pad season to summarize the activities during ice road/trail/pad construction, maintenance, use and de-commissioning that occurred approximately December through May of that year. Records associated with any ringed seal observations and monitoring will be transmitted to NMFS prior to each subsequent ice road/trail season (i.e., generally by late summer, prior to the subsequent ice road/trail/pad season).

If a specific mitigation or monitoring measure is implemented during the ice road/trail activities (e.g., a breathing hole is monitored for seal presence), then a preliminary report of the activity will be submitted within 14 days after the cessation of that activity.

If a seal is observed within 50 m (164 ft) of the roadway during ice road/trail activities, or the edge of the ice pad or on the ice pad then notification to the Environmental Specialist and other staff and agency personnel will be undertaken as described above.

### **5.1 Annual Monitoring Report**

Annual and final reports will be submitted via electronic mail to the appropriate NMFS staff including the NMFS AKR Protected Resources Division Supervisor and staff in OPR, Permits and Conservation Division in Silver Spring, Maryland.

Digital, queryable documents containing all observations and records, and digital, queryable reports will be submitted to: NMFS AKR Protected Resources Division Supervisor, Greg Balogh, at [greg.balogh@noaa.gov](mailto:greg.balogh@noaa.gov) and to OPR, Permits and Conservation Division, NMFS, and Shane Guan, at [shane.guan@noaa.gov](mailto:shane.guan@noaa.gov). In the event that this contact information becomes obsolete, call 907-271-5006 for updated reporting contact information.

### **5.2 Reporting of Unforeseen Events**

In the unanticipated event that the specified activities along the ice road construction clearly causes the take of a marine mammal in a manner prohibited by the LOA, such as an unforeseen injury or mortality to a pinniped, the observer will report the incident to the Environmental Specialist, in accordance with their Wildlife Interaction/Management Plan, who would then relay that information to the OPR, Permits and Conservation Division, NMFS, and NMFS AKR Protected Resources Division (contact information provided above). This communication would occur as soon as practicable. A report documenting the incident would include:

- Time, date, and location (latitude/longitude) of the incident;
- Description of the incident;



- Water depth;
- Environmental conditions (e.g., wind speed and direction, and visibility);
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

In the event that an observer or company personnel discovers an injured or dead marine mammal, the cause of the injury or death is unknown, and the death is relatively recent (i.e., in less than a moderate state of decomposition), the incident would be reported to the OPR, Chief of the Permits and Conservation Division, NMFS in Silver Spring, Maryland (301-427-8401) and the Marine Mammal Network Alaska Stranding Coordinator in Alaska (Phone number 1-877-925-7773 or 1-877-9-AKR-PRD), as soon as practicably possible. The report would include the same information identified in the paragraph above. Activities would be allowed to continue while NMFS reviews the circumstances of the incident. NMFS would work with Hilcorp or Eni to determine whether modifications in the activities are appropriate.

Under such circumstances that the injury or death is not associated with or related to the activities authorized in the LOA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), the incident would be reported to the OPR, Chief of the Permits and Conservation Division, NMFS or by email to the Alaska Stranding Coordinator within 24 hours of the discovery. Photographs, video footage (if available), and any other documentation of the stranded animal sighting will be provided to NMFS and the Marine Mammal Stranding Network.

**2023 Northstar Ringed Seal Observation Summary**

Date (mm/dd/yyyy)	Sighting During Planned Survey? (Y/N)	Observer	Road Name/No.	Location (Approx. Lat/Long or Mile Marker)	Survey Start and End Time	Weather	Visibility (in Miles)	# of Seals	Pup or Adult	Behavior	Activity Occuring Near Sighting	Notes
3/1/2023	N	Moorhead	Northstar Ice Path	N/A	13:30 to 17:00	Clear	10	0	N/A	N/A	N/A	Started from shore
3/3/2023	N	Moorhead	Northstar Ice Path	N/A	12:30 to 16:45	Clear	10	0	N/A	N/A	N/A	Started from shore
3/5/2023	N	Moorhead	Northstar Ice Path	N/A	09:00 to 12:15	Sunny	10	0	N/A	N/A	N/A	Started from shore
3/7/2023	N	Hubbard	Northstar Ice Path	N/A	13:00 to 16:15	Clear	10	0	N/A	N/A	N/A	Calm winds
3/9/2023	N	Hubbard	Northstar Ice Path	N/A	14:00 to 17:20	Clear	3	0	N/A	N/A	N/A	Blowing snow
3/11/2023	N	Hubbard	Northstar Ice Path	N/A	12:00 to 15:15	Light Snow	3	0	N/A	N/A	N/A	
3/13/2023	N	Hubbard	Northstar Ice Path	N/A	12:30 to 15:30	Clear / Sunny	10	0	N/A	N/A	N/A	
3/15/2023	N	Hubbard	Northstar Ice Path	N/A	14:15 to 17:30	Sunny	10	0	N/A	N/A	N/A	
3/17/2023	N	Hubbard	Northstar Ice Path	N/A	13:30 to 16:30	Sunny	10	0	N/A	N/A	N/A	Started from shore
3/19/2023	N	Hubbard	Northstar Ice Path	N/A	12:45 to 15:50	Clear	10	0	N/A	N/A	N/A	
3/21/2023	N	Moorhead	Northstar Ice Path	N/A	13:30 to 16:30	Clear	10	0	N/A	N/A	N/A	Started from shore
3/23/2023	N	Moorhead	Northstar Ice Path	N/A	06:00 to 09:00	Clear	10	0	N/A	N/A	N/A	
3/25/2023	N	Moorhead	Northstar Ice Path	N/A	07:45 to 10:45	Clear	10	0	N/A	N/A	N/A	Started from shore / No seals
3/27/2023	N	Moorhead	Northstar Ice Path	N/A	12:00 to 15:00	Clear	10	0	N/A	N/A	N/A	No seals
3/29/2023	N	Moorhead	Northstar Ice Path	N/A	07:00 to 10:00	Clear	10	0	N/A	N/A	N/A	No seals
3/31/2023	N	Moorhead	Northstar Ice Path	N/A	11:50 to 14:50	Clear	10	0	N/A	N/A	N/A	No seals
4/2/2023	N	Moorhead	Northstar Ice Path	N/A	11:45 to 14:45	Overcast	10	0	N/A	N/A	N/A	No seals
4/4/2023	N	Hubbard	Northstar Ice Path	N/A	13:40 to 16:40	Overcast	10	0	N/A	N/A	N/A	
4/6/2023	N	Hubbard	Northstar Ice Path	N/A	12:15 to 15:30	Clear	10	0	N/A	N/A	N/A	
4/8/2023	N	Hubbard	Northstar Ice Path	N/A	09:30 to 12:30	Clear	10	0	N/A	N/A	N/A	
4/10/2023	N	Hubbard	Northstar Ice Path	N/A	10:10 to 13:15	Overcast	3 to 4	0	N/A	N/A	N/A	Blowing snow
4/12/2023	N	Hubbard	Northstar Ice Path	N/A	14:30 to 17:30	Overcast	3	0	N/A	N/A	N/A	
4/14/2023	N	Hubbard	Northstar Ice Path	N/A	11:30 to 14:40	Partly Cloudy	10	0	N/A	N/A	N/A	
4/16/2023	N	Hubbard	Northstar Ice Path	N/A	12:05 to 15:10	Clear	10	0	N/A	N/A	N/A	
4/18/2023	N	Moorhead	Northstar Ice Path	N/A	12:30 to 15:35	Clear	10	0	N/A	N/A	N/A	No seals
4/20/2023	N	Lindquist	Northstar Ice Path	N/A	09:30 to 13:15	Clear	10	0	N/A	N/A	N/A	No seals
4/20/2023	No Seal Survey conducted due to Polar Bear on Ice Path. Polar Bear observation/sighting report was completed and submitted to Hilcorp Wildlife Reporting Platform. Sighting was from 13:30 to 17:00.											
4/24/2023	N	Lindquist	Northstar Ice Path	N/A	08:00 to 11:10	Clear	10	0	N/A	N/A	N/A	No seals
4/26/2023	N	Moorhead	Northstar Ice Path	N/A	15:00 to 18:00	Overcast	8	0	N/A	N/A	N/A	No seals observed
4/28/2023	N	Moorhead	Northstar Ice Path	N/A	15:00 to 18:00	Clear	10	0	N/A	N/A	N/A	No seals observed
4/30/2023	N	Moorhead	Northstar Ice Path	N/A	07:00 to 10:00	Fog	3	0	N/A	N/A	N/A	No seals observed
5/2/2023	N	Hubbard	Northstar Ice Path	N/A	14:00 to 17:00	Fog	0.5	0	N/A	N/A	N/A	Blowing snow / No seals observed

1 seal spotted resting at Mile Marker 1, approximately 400 meters from the Ice Path. Seal was observed 14:30 to 14:40. Another seal was spotted resting at Mile Marker 7, approximately 300 meters from the Ice Path. Seal was observed from 16:50 to 17:00.

Poor visibility / No seals observed

No Survey conducted due to adverse weather conditions. Heavy fog reduced visibility to 0.25 miles.

6 seals total spotted spread out between Mile Marker 1.5 and 7.5. One adult seal spotted resting at Mile Marker 1.5. One adult seal spotted at Mile Marker 2, and this was the closest animal to the trail at approximately 250 meters. Two seals (1 adult and 1 juvenile) were spotted resting at Mile Marker 5.5. One adult seal was spotted resting at Mile Marker 6.5, and another adult seal was spotted resting at Mile Marker 7.5. All sightings were at a distance >150 meters from the ice trail, and each sighting lasted approximately 7 minutes.

2 adult seals spotted resting at Mile Marker 5.3, and 1 adult seal spotted resting at Mile Marker 7.5. All sightings were at a distance >250 meters from the ice trail and each survey lasted approximately 10 minutes.

Trail smoothing out, loosening snow, warm temps. 2 adult seals spotted resting at Mile Marker 1.5. One adult seal spotted resting at Mile Marker 2, another at Mile Marker 2.8, and another at Mile Marker 3.4. Two adult seal spotted resting at Mile Marker 5.5, and another two spotted resting at Mile Marker 7.5. All sightings were at a distance >200 meters from the ice trail, and each sighting lasted approximately 5 minutes.

One adult seal spotted resting at Mile Marker 2, and two adult seals spotted resting at Mile Marker 5.5. Both sightings were at a distance >200 meters from the ice trail, and each sighting lasted approximately 5 minutes.

One adult seal spotted resting at Mile Marker 1.5. One adult seal spotted resting at Mile Marker 2. One adult seal spotted resting at Mile Marker 3.4. Two adult seals spotted resting at Mile Marker 5.5. One adult seal spotted resting at Mile Marker 7.5. All sightings were at a distance >200 meters from the ice trail, and each sighting lasted approximately 5 minutes.

Seal Survey

Resting

Adults

2

10

Overcast

14:15 to 17:15

Mile Marker 1 and 7

Northstar Ice Path

Hubbard

Y

5/4/2023

N/A

N/A

N/A

0

0.5

Fog

12:00 to 15:00

N/A

Northstar Ice Path

Hubbard

N

5/6/2023

Seal Survey

Resting

5 Adults, 1 Juvenile

6

10

Overcast

11:45 to 14:35

Mile Marker 1.5, 2, 5.5, 6.5, and 7.5

Northstar Ice Path

Hubbard

Y

5/10/2023

Seal Survey

Resting

Adults

3

5

Overcast

12:40 to 15:55

Mile Marker 5.3 and 7.5

Northstar Ice Path

Hubbard

Y

5/12/2023

Seal Survey

Resting

Adults

9

10

Partly Cloudy

12:05 to 15:15

Mile Marker 1.5, 2, 2.8, 3.4, 5.5, and 7.5

Northstar Ice Path

Hubbard

Y

5/14/2023

Seal Survey

Resting

Adults

3

2

Fog

12:35 to 15:35

Mile Marker 2 and 5.5

Northstar Ice Path

Moorhead

Y

5/16/2023

Seal Survey

Resting

Adults

6

10

Clear

09:00 to 12:00

Mile Marker 1.5, 2, 3.4, 5.5, and 7.5

Northstar Ice Path

Moorhead

Y

5/18/2023

### Snow Depth

Date (mm/dd/yy)	Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow Depth (inches)	Snow Characterization (Bumpy, Uniform, Flat, etc.)	Distance Between Drift Peaks (yards)
3/1/2023	0.5	6	4	Bumpy	No Peaks
	1	4	4	Bumpy	No Peaks
	1.5	8	6	Bumpy	No Peaks
	2	7	4	Bumpy	No Peaks
	2.5	8	4	Bumpy	No Peaks
	3	6	4	Bumpy	No Peaks
	3.5	8	6	Bumpy	No Peaks
	4	4	2	Bumpy	No Peaks
	4.5	8	6	Bumpy	No Peaks
	5	6	4	Bumpy	No Peaks
	5.5	6	2	Bumpy	No Peaks
	6	11	8	Bumpy	No Peaks
	6.5	6	6	Bumpy	No Peaks
	7	10	6	Bumpy	No Peaks
7.5	6	6	Bumpy	No Peaks	
3/3/2023	0.5	6	4	Bumpy	No Peaks
	1	6	4	Bumpy	No Peaks
	1.5	9	4	Bumpy	No Peaks
	2	7	4	Bumpy	No Peaks
	2.5	8	6	Bumpy	No Peaks
	3	6	4	Bumpy	No Peaks
	3.5	8	6	Bumpy	No Peaks
	4	5	5	Bumpy	No Peaks
	4.5	8	8	Bumpy	No Peaks
	5	6	4	Bumpy	No Peaks
	5.5	10	7	Bumpy	No Peaks
	6	6	6	Bumpy	No Peaks
	6.5	10	6	Bumpy	No Peaks
	7	10	6	Bumpy	No Peaks
7.5	7	6	Bumpy	No Peaks	
3/5/2023	0.5	7	4	Bumpy	No Peaks
	1	6	4	Bumpy	No Peaks
	1.5	8	4	Bumpy	No Peaks
	2	7	4	Bumpy	No Peaks
	2.5	7	5	Bumpy	No Peaks
	3	6	4	Bumpy	No Peaks
	3.5	8	6	Bumpy	No Peaks
	4	4	4	Bumpy	No Peaks
	4.5	6	6	Bumpy	No Peaks
	5	6	4	Bumpy	No Peaks
	5.5	8	8	Bumpy	No Peaks
	6	11	8	Bumpy	No Peaks
	6.5	10	6	Bumpy	No Peaks
	7	10	6	Bumpy	No Peaks
7.5	6	6	Bumpy	No Peaks	
3/7/2023	0.5	6	4	Bumpy	No Peaks
	1	6	4	Bumpy	No Peaks
	1.5	7	4	Bumpy	No Peaks
	2	7	4	Bumpy	No Peaks
	2.5	8	5	Bumpy	No Peaks
	3	7	5	Bumpy	No Peaks
	3.5	7	5	Bumpy	No Peaks
	4	6	4	Bumpy	No Peaks
4.5	6	4	Bumpy	No Peaks	

	5	7	4	Bumpy	No Peaks
	5.5	7	5	Bumpy	No Peaks
	6	9	6	Bumpy	No Peaks
	6.5	9	6	Bumpy	No Peaks
	7	9	5	Bumpy	No Peaks
	7.5	8	5	Bumpy	No Peaks
3/9/2023	0.5	6	4	Bumpy	No Peaks
	1	5	3	Bumpy	No Peaks
	1.5	6	3	Bumpy	No Peaks
	2	7	4	Bumpy	No Peaks
	2.5	7	4	Bumpy	No Peaks
	3	8	5	Bumpy	No Peaks
	3.5	7	4	Bumpy	No Peaks
	4	7	4	Bumpy	No Peaks
	4.5	6	4	Bumpy	No Peaks
	5	6	3	Bumpy	No Peaks
	5.5	6	3	Bumpy	No Peaks
	6	8	4	Bumpy	No Peaks
	6.5	8	5	Bumpy	No Peaks
	7	9	5	Bumpy	No Peaks
7.5	8	4	Bumpy	No Peaks	
3/11/2023	0.5	8	4	Bumpy	No Peaks
	1	6	4	Bumpy	No Peaks
	1.5	8	3	Bumpy	No Peaks
	2	7	3	Bumpy	No Peaks
	2.5	5	4	Bumpy	No Peaks
	3	8	4	Bumpy	No Peaks
	3.5	6	3	Bumpy	No Peaks
	4	6	3	Bumpy	No Peaks
	4.5	6	3	Bumpy	No Peaks
	5	7	3	Bumpy	No Peaks
	5.5	8	5	Bumpy	No Peaks
	6	8	5	Bumpy	No Peaks
	6.5	7	4	Bumpy	No Peaks
	7	8	5	Bumpy	No Peaks
7.5	6	3	Bumpy	No Peaks	
3/13/2023	0.5	7	4	Bumpy	No Peaks
	1	7	4	Bumpy	No Peaks
	1.5	7	3	Bumpy	No Peaks
	2	6	3	Bumpy	No Peaks
	2.5	6	4	Bumpy	No Peaks
	3	7	4	Bumpy	No Peaks
	3.5	5	3	Bumpy	No Peaks
	4	6	3	Bumpy	No Peaks
	4.5	7	4	Bumpy	No Peaks
	5	7	4	Bumpy	No Peaks
	5.5	9	4	Bumpy	No Peaks
	6	8	5	Bumpy	No Peaks
	6.5	7	3	Bumpy	No Peaks
	7	7	5	Bumpy	No Peaks
7.5	6	3	Bumpy	No Peaks	
3/15/2023	0.5	5	3	Bumpy	No Peaks
	1	6	3	Bumpy	No Peaks
	1.5	7	4	Bumpy	No Peaks
	2	6	4	Bumpy	No Peaks
	2.5	8	5	Bumpy	No Peaks
	3	8	5	Bumpy	No Peaks
	3.5	6	4	Bumpy	No Peaks
	4	6	4	Bumpy	No Peaks

	4.5	9	5	Bumpy	No Peaks
	5	7	3	Bumpy	No Peaks
	5.5	9	6	Bumpy	No Peaks
	6	7	4	Bumpy	No Peaks
	6.5	7	4	Bumpy	No Peaks
	7	8	3	Bumpy	No Peaks
	7.5	7	4	Bumpy	No Peaks
3/17/2023	0.5	4	2	Bumpy	No Peaks
	1	6	4	Bumpy	No Peaks
	1.5	6	4	Bumpy	No Peaks
	2	6	3	Bumpy	No Peaks
	2.5	7	3	Bumpy	No Peaks
	3	7	4	Bumpy	No Peaks
	3.5	6	4	Bumpy	No Peaks
	4	5	3	Bumpy	No Peaks
	4.5	7	5	Bumpy	No Peaks
	5	7	5	Bumpy	No Peaks
	5.5	8	6	Bumpy	No Peaks
	6	6	3	Bumpy	No Peaks
	6.5	6	3	Bumpy	No Peaks
	7	7	4	Bumpy	No Peaks
7.5	6	4	Bumpy	No Peaks	
3/19/2023	0.5	4	3	Bumpy	No Peaks
	1	5	3	Bumpy	No Peaks
	1.5	5	3	Bumpy	No Peaks
	2	6	4	Bumpy	No Peaks
	2.5	6	4	Bumpy	No Peaks
	3	6	3	Bumpy	No Peaks
	3.5	7	4	Bumpy	No Peaks
	4	6	5	Bumpy	No Peaks
	4.5	6	4	Bumpy	No Peaks
	5	8	5	Bumpy	No Peaks
	5.5	7	5	Bumpy	No Peaks
	6	6	3	Bumpy	No Peaks
	6.5	6	3	Bumpy	No Peaks
	7	7	5	Bumpy	No Peaks
7.5	6	3	Bumpy	No Peaks	
3/21/2023	0.5	4	4	Bumpy	No Peaks
	1	5	4	Bumpy	No Peaks
	1.5	5	3	Bumpy	No Peaks
	2	5	4	Bumpy	No Peaks
	2.5	6	4	Bumpy	No Peaks
	3	6	4	Bumpy	No Peaks
	3.5	6	5	Bumpy	No Peaks
	4	5	5	Bumpy	No Peaks
	4.5	6	4	Bumpy	No Peaks
	5	8	5	Bumpy	No Peaks
	5.5	8	5	Bumpy	No Peaks
	6	6	3	Bumpy	No Peaks
	6.5	5	4	Bumpy	No Peaks
	7	7	4	Bumpy	No Peaks
7.5	6	3	Bumpy	No Peaks	
	0.5	4	4	Bumpy	No Peaks
	1	4	4	Bumpy	No Peaks
	1.5	5	4	Bumpy	No Peaks
	2	6	5	Bumpy	No Peaks
	2.5	8	5	Bumpy	No Peaks
	3	7	4	Bumpy	No Peaks
3.5	5	5	Bumpy	No Peaks	

3/23/2023	4	6	4	Bumpy	No Peaks
	4.5	8	5	Bumpy	No Peaks
	5	8	5	Bumpy	No Peaks
	5.5	8	5	Bumpy	No Peaks
	6	6	4	Bumpy	No Peaks
	6.5	5	4	Bumpy	No Peaks
	7	7	4	Bumpy	No Peaks
	7.5	7	3	Bumpy	No Peaks
3/25/2023	0.5	4	3	Bumpy	No Peaks
	1	5	3	Bumpy	No Peaks
	1.5	5	3	Bumpy	No Peaks
	2	6	5	Bumpy	No Peaks
	2.5	8	5	Bumpy	No Peaks
	3	7	4	Bumpy	No Peaks
	3.5	6	5	Bumpy	No Peaks
	4	5	5	Bumpy	No Peaks
	4.5	6	4	Bumpy	No Peaks
	5	8	5	Bumpy	No Peaks
	5.5	8	5	Bumpy	No Peaks
	6	6	4	Bumpy	No Peaks
	6.5	5	4	Bumpy	No Peaks
	7	7	5	Bumpy	No Peaks
7.5	6	3	Bumpy	No Peaks	
3/27/2023	0.5	4	4	Bumpy	No Peaks
	1	5	3	Bumpy	No Peaks
	1.5	5	3	Bumpy	No Peaks
	2	6	5	Bumpy	No Peaks
	2.5	6	4	Bumpy	No Peaks
	3	6	5	Bumpy	No Peaks
	3.5	6	5	Bumpy	No Peaks
	4	5	5	Bumpy	No Peaks
	4.5	6	4	Bumpy	No Peaks
	5	8	5	Bumpy	No Peaks
	5.5	8	5	Bumpy	No Peaks
	6	6	4	Bumpy	No Peaks
	6.5	5	4	Bumpy	No Peaks
	7	7	5	Bumpy	No Peaks
7.5	6	3	Bumpy	No Peaks	
3/29/2023	0.5	5	3	Bumpy	No Peaks
	1	5	3	Bumpy	No Peaks
	1.5	5	4	Bumpy	No Peaks
	2	5	5	Bumpy	No Peaks
	2.5	8	5	Bumpy	No Peaks
	3	5	5	Bumpy	No Peaks
	3.5	7	4	Bumpy	No Peaks
	4	7	3	Bumpy	No Peaks
	4.5	8	4	Bumpy	No Peaks
	5	9	4	Bumpy	No Peaks
	5.5	6	5	Bumpy	No Peaks
	6	6	4	Bumpy	No Peaks
	6.5	5	5	Bumpy	No Peaks
	7	7	5	Bumpy	No Peaks
7.5	8	3	Bumpy	No Peaks	
	0.5	4	3	N/A	N/A
	1	4	3	N/A	N/A
	1.5	4	4	N/A	N/A
	2	5	4	N/A	N/A
	2.5	6	5	N/A	N/A
	3	4	4	N/A	N/A

3/31/2023	3.5	5	4	N/A	N/A
	4	7	4	N/A	N/A
	4.5	8	4	N/A	N/A
	5	8	4	N/A	N/A
	5.5	6	5	N/A	N/A
	6	6	5	N/A	N/A
	6.5	7	4	N/A	N/A
	7	6	5	N/A	N/A
	7.5	8	4	N/A	N/A
4/2/2023	0.5	5	3	N/A	N/A
	1	4	3	N/A	N/A
	1.5	4	3	N/A	N/A
	2	5	5	N/A	N/A
	2.5	7	5	N/A	N/A
	3	4	4	N/A	N/A
	3.5	5	4	N/A	N/A
	4	6	4	N/A	N/A
	4.5	7	4	N/A	N/A
	5	8	5	N/A	N/A
	5.5	5	5	N/A	N/A
	6	6	5	N/A	N/A
	6.5	7	4	N/A	N/A
	7	5	5	N/A	N/A
7.5	8	5	N/A	N/A	
4/4/2023	0.5	5	3	Bumpy	N/A
	1	6	3	Bumpy	N/A
	1.5	5	3	Bumpy	N/A
	2	5	4	Bumpy	N/A
	2.5	7	4	Bumpy	N/A
	3	6	3	Bumpy	N/A
	3.5	7	4	Bumpy	N/A
	4	5	4	Bumpy	N/A
	4.5	7	3	Bumpy	N/A
	5	7	4	Bumpy	N/A
	5.5	6	3	Bumpy	N/A
	6	6	3	Bumpy	N/A
	6.5	6	3	Bumpy	N/A
	7	6	4	Bumpy	N/A
7.5	5	3	Bumpy	N/A	
4/6/2023	0.5	4	3	Bumpy	N/A
	1	5	3	Bumpy	N/A
	1.5	6	4	Bumpy	N/A
	2	6	3	Bumpy	N/A
	2.5	7	3	Bumpy	N/A
	3	5	2	Bumpy	N/A
	3.5	6	4	Bumpy	N/A
	4	6	3	Bumpy	N/A
	4.5	5	4	Bumpy	N/A
	5	6	4	Bumpy	N/A
	5.5	7	5	Bumpy	N/A
	6	7	3	Bumpy	N/A
	6.5	7	3	Bumpy	N/A
	7	6	3	Bumpy	N/A
7.5	5	4	Bumpy	N/A	
	0.5	5	3	Bumpy	N/A
	1	5	3	Bumpy	N/A
	1.5	7	3	Bumpy	N/A
	2	6	4	Bumpy	N/A
	2.5	7	3	Bumpy	N/A



4/8/2023	3	6	3	Bumpy	N/A
	3.5	5	2	Bumpy	N/A
	4	6	4	Bumpy	N/A
	4.5	5	4	Bumpy	N/A
	5	7	4	Bumpy	N/A
	5.5	7	3	Bumpy	N/A
	6	8	4	Bumpy	N/A
	6.5	8	3	Bumpy	N/A
	7	7	4	Bumpy	N/A
	7.5	6	3	Bumpy	N/A
4/10/2023	0.5	7	4	Bumpy	N/A
	1	9	6	Bumpy	N/A
	1.5	8	6	Bumpy	N/A
	2	8	6	Bumpy	N/A
	2.5	5	3	Bumpy	N/A
	3	6	4	Bumpy	N/A
	3.5	7	4	Bumpy	N/A
	4	7	4	Bumpy	N/A
	4.5	8	4	Bumpy	N/A
	5	5	5	Bumpy	N/A
	5.5	6	3	Bumpy	N/A
	6	8	5	Bumpy	N/A
	6.5	9	5	Bumpy	N/A
	7	7	5	Bumpy	N/A
7.5	7	4	Bumpy	N/A	
4/12/2023	0.5	7	3	Bumpy	N/A
	1	7	5	Bumpy	N/A
	1.5	8	5	Bumpy	N/A
	2	6	4	Bumpy	N/A
	2.5	6	4	Bumpy	N/A
	3	7	5	Bumpy	N/A
	3.5	6	3	Bumpy	N/A
	4	7	3	Bumpy	N/A
	4.5	6	3	Bumpy	N/A
	5	6	4	Bumpy	N/A
	5.5	7	4	Bumpy	N/A
	6	8	5	Bumpy	N/A
	6.5	8	4	Bumpy	N/A
	7	7	4	Bumpy	N/A
7.5	6	3	Bumpy	N/A	
4/14/2023	0.5	6	3	Bumpy	N/A
	1	6	4	Bumpy	N/A
	1.5	7	4	Bumpy	N/A
	2	5	3	Bumpy	N/A
	2.5	5	3	Bumpy	N/A
	3	6	4	Bumpy	N/A
	3.5	6	3	Bumpy	N/A
	4	5	4	Bumpy	N/A
	4.5	6	4	Bumpy	N/A
	5	5	3	Bumpy	N/A
	5.5	6	3	Bumpy	N/A
	6	7	5	Bumpy	N/A
	6.5	7	4	Bumpy	N/A
	7	6	5	Bumpy	N/A
7.5	6	4	Bumpy	N/A	
	0.5	5	3	Bumpy	N/A
	1	7	3	Bumpy	N/A
	1.5	8	5	Bumpy	N/A
	2	6	4	Bumpy	N/A

4/16/2023	2.5	5	3	Bumpy	N/A
	3	5	3	Bumpy	N/A
	3.5	7	4	Bumpy	N/A
	4	6	4	Bumpy	N/A
	4.5	6	4	Bumpy	N/A
	5	5	4	Bumpy	N/A
	5.5	7	3	Bumpy	N/A
	6	7	5	Bumpy	N/A
	6.5	6	3	Bumpy	N/A
	7	7	4	Bumpy	N/A
	7.5	7	4	Bumpy	N/A
4/18/2023	0.5	5	3	Bumpy	N/A
	1	7	4	Bumpy	N/A
	1.5	8	5	Bumpy	N/A
	2	6	4	Bumpy	N/A
	2.5	5	4	Bumpy	N/A
	3	5	3	Bumpy	N/A
	3.5	6	3	Bumpy	N/A
	4	6	4	Bumpy	N/A
	4.5	6	4	Bumpy	N/A
	5	5	3	Bumpy	N/A
	5.5	7	5	Bumpy	N/A
	6	6	5	Bumpy	N/A
	6.5	6	3	Bumpy	N/A
	7	7	4	Bumpy	N/A
7.5	7	4	Bumpy	N/A	
4/20/2023	0.5	7	3.5	Bumpy	N/A
	1	7	5	Bumpy	N/A
	1.5	7.5	6	Bumpy	N/A
	2	6.25	5	Bumpy	N/A
	2.5	7	4.5	Bumpy	N/A
	3	6	4	Bumpy	N/A
	3.5	6.5	4	Bumpy	N/A
	4	6.5	5	Bumpy	N/A
	4.5	7	2	Bumpy	N/A
	5	6.5	4	Bumpy	N/A
	5.5	5	5	Bumpy	N/A
	6	7	4	Bumpy	N/A
	6.5	5	4	Bumpy	N/A
	7	6	5	Bumpy	N/A
7.5	6	5	Bumpy	N/A	
4/24/2023	0.5	7	4	N/A	N/A
	1	7	5	N/A	N/A
	1.5	7	6	N/A	N/A
	2	6	5	N/A	N/A
	2.5	7	5	N/A	N/A
	3	6	4	N/A	N/A
	3.5	6	4	N/A	N/A
	4	6	5	N/A	N/A
	4.5	7	3	N/A	N/A
	5	6	4	N/A	N/A
	5.5	5	5	N/A	N/A
	6	7	4	N/A	N/A
	6.5	5	4	N/A	N/A
	7	6	5	N/A	N/A
7.5	6	5	N/A	N/A	
	0.5	7	4	Bumpy	N/A
	1	9	4	Bumpy	N/A
	1.5	9	6	Bumpy	N/A

4/26/2023	2	8	5	Bumpy	N/A
	2.5	11	5	Bumpy	N/A
	3	7	6	Bumpy	N/A
	3.5	8	6	Bumpy	N/A
	4	9	5	Bumpy	N/A
	4.5	8	4	Bumpy	N/A
	5	7	4	Bumpy	N/A
	5.5	3	3	Bumpy	N/A
	6	6	4	Bumpy	N/A
	6.5	4	4	Bumpy	N/A
	7	6	5	Bumpy	N/A
	7.5	7	4	Bumpy	N/A
4/28/2023	0.5	7	5	Bumpy	N/A
	1	8	5	Bumpy	N/A
	1.5	8	5	Bumpy	N/A
	2	12	5	Bumpy	N/A
	2.5	9	6	Bumpy	N/A
	3	7	6	Bumpy	N/A
	3.5	8	7	Bumpy	N/A
	4	9	6	Bumpy	N/A
	4.5	8	4	Bumpy	N/A
	5	7	5	Bumpy	N/A
	5.5	4	3	Bumpy	N/A
	6	6	5	Bumpy	N/A
	6.5	5	4	Bumpy	N/A
	7	6	5	Bumpy	N/A
7.5	7	6	Bumpy	N/A	
4/30/2023	0.5	6	6	Bumpy	N/A
	1	9	5	Bumpy	N/A
	1.5	8	5	Bumpy	N/A
	2	8	5	Bumpy	N/A
	2.5	10	7	Bumpy	N/A
	3	7	6	Bumpy	N/A
	3.5	8	7	Bumpy	N/A
	4	9	5	Bumpy	N/A
	4.5	8	4	Bumpy	N/A
	5	8	4	Bumpy	N/A
	5.5	5	3	Bumpy	N/A
	6	6	6	Bumpy	N/A
	6.5	5	4	Bumpy	N/A
	7	6	5	Bumpy	N/A
7.5	7	5	Bumpy	N/A	
5/2/2023	0.5	6	4	Bumpy	N/A
	1	7	4	Bumpy	N/A
	1.5	7	5	Bumpy	N/A
	2	7	4	Bumpy	N/A
	2.5	8	6	Bumpy	N/A
	3	8	5	Bumpy	N/A
	3.5	8	6	Bumpy	N/A
	4	7	5	Bumpy	N/A
	4.5	8	4	Bumpy	N/A
	5	8	4	Bumpy	N/A
	5.5	6	5	Bumpy	N/A
	6	7	5	Bumpy	N/A
	6.5	6	4	Bumpy	N/A
	7	7	6	Bumpy	N/A
7.5	6	5	Bumpy	N/A	
	0.5	6	5	Bumpy	N/A
	1	6	4	Bumpy	N/A

5/4/2023	1.5	7	4	Bumpy	N/A
	2	7	4	Bumpy	N/A
	2.5	7	6	Bumpy	N/A
	3	8	6	Bumpy	N/A
	3.5	7	4	Bumpy	N/A
	4	7	4	Bumpy	N/A
	4.5	8	5	Bumpy	N/A
	5	6	5	Bumpy	N/A
	5.5	7	5	Bumpy	N/A
	6	8	6	Bumpy	N/A
	6.5	7	4	Bumpy	N/A
	7	7	5	Bumpy	N/A
	7.5	5	4	Bumpy	N/A
	5/6/2023	0.5	5	4	Bumpy
1		6	4	Bumpy	N/A
1.5		6	5	Bumpy	N/A
2		5	4	Bumpy	N/A
2.5		6	4	Bumpy	N/A
3		6	5	Bumpy	N/A
3.5		7	5	Bumpy	N/A
4		6	4	Bumpy	N/A
4.5		7	5	Bumpy	N/A
5		6	5	Bumpy	N/A
5.5		7	5	Bumpy	N/A
6		7	5	Bumpy	N/A
6.5		6	4	Bumpy	N/A
7		6	5	Bumpy	N/A
7.5	5	4	Bumpy	N/A	
5/10/2023	0.5	4	3	Bumpy	N/A
	1	5	3	Bumpy	N/A
	1.5	4	3	Bumpy	N/A
	2	6	4	Bumpy	N/A
	2.5	6	4	Bumpy	N/A
	3	5	3	Bumpy	N/A
	3.5	5	4	Bumpy	N/A
	4	6	4	Bumpy	N/A
	4.5	6	3	Bumpy	N/A
	5	5	4	Bumpy	N/A
	5.5	5	4	Bumpy	N/A
	6	6	3	Bumpy	N/A
	6.5	6	4	Bumpy	N/A
	7	5	4	Bumpy	N/A
7.5	5	4	Bumpy	N/A	
5/12/2023	0.5	4	2	Bumpy	N/A
	1	4	3	Bumpy	N/A
	1.5	3	2	Bumpy	N/A
	2	5	3	Bumpy	N/A
	2.5	5	4	Bumpy	N/A
	3	4	2	Bumpy	N/A
	3.5	5	3	Bumpy	N/A
	4	7	4	Bumpy	N/A
	4.5	5	3	Bumpy	N/A
	5	7	3	Bumpy	N/A
	5.5	6	5	Bumpy	N/A
	6	5	4	Bumpy	N/A
	6.5	7	4	Bumpy	N/A
	7	5	3	Bumpy	N/A
7.5	5	4	Bumpy	N/A	
	0.5	3	2	Bumpy	N/A

5/14/2023	1	3	2	Bumpy	N/A
	1.5	3	2	Smooth	N/A
	2	4	2	Smooth	N/A
	2.5	5	3	Smooth	N/A
	3	3	2	Smooth	N/A
	3.5	5	3	Bumpy	N/A
	4	6	4	Bumpy	N/A
	4.5	5	4	Bumpy	N/A
	5	6	3	Smooth	N/A
	5.5	5	4	Smooth	N/A
	6	4	3	Smooth	N/A
	6.5	6	4	Bumpy	N/A
	7	5	3	Bumpy	N/A
	7.5	5	3	Bumpy	N/A
5/16/2023	0.5	3	2	Bumpy	N/A
	1	3	3	Smooth	N/A
	1.5	3	2	Smooth	N/A
	2	4	3	Smooth	N/A
	2.5	5	3	Smooth	N/A
	3	3	3	Smooth	N/A
	3.5	5	4	Bumpy	N/A
	4	6	4	Bumpy	N/A
	4.5	5	3	Bumpy	N/A
	5	6	4	Smooth	N/A
	5.5	4	3	Smooth	N/A
	6	4	4	Smooth	N/A
	6.5	6	4	Bumpy	N/A
	7	5	3	Bumpy	N/A
7.5	4	3	Bumpy	N/A	
5/18/2023	0.5	3	2	Bumpy	N/A
	1	3	3	Bumpy	N/A
	1.5	4	4	Smooth	N/A
	2	4	4	Smooth	N/A
	2.5	5	4	Smooth	N/A
	3	3	3	Smooth	N/A
	3.5	5	3	Bumpy	N/A
	4	6	4	Bumpy	N/A
	4.5	5	4	Bumpy	N/A
	5	5	4	Smooth	N/A
	5.5	4	3	Smooth	N/A
	6	4	3	Smooth	N/A
	6.5	5	4	Bumpy	N/A
	7	5	4	Bumpy	N/A
7.5	4	3	Bumpy	N/A	

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol: Observers stop every 1/2 mile and observe 150 m on either side of road for 5 minutes; record details sightings within 150 m. For sightings further than 150 m, record basic info (distance, #, location) in Notes section. Take two snow depth measurements on nearest unpacked snow at each stop; flip coin to choose which side of road to measure. Please take photos of any seals or signs of seals.				Please email this log every survey day to psologs@hilcorp.com				Snow depth			
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)			
3-1-23	Start	1:30	End						5:00		
Observer Name	Erin Moorhead			0.5	6	4	Bumpy	0			
Weather	Visibility	Distance	10	Feet / Yards / Meters (Miles)	1	4	4	Bumpy	0		
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5	8	6	Bumpy	0		
	Weather Conditions	Fog, Rain, Snow etc... Clear			2	7	4	Bumpy	0		
	Temperature	Temp	-15	C / F	2.5	8	4	Bumpy	0		
	Wind	Speed	20 knots	Direction (N,S,E,W)	3	6	4	Bumpy	0		
Provide Information Below if Seal or Breather Hole is Observed. Otherwise Leave Blank.				3.5	8	6	Bumpy	0			
Sighting	Sighting Time Start / End	Start		End	4	4	2	Bumpy	0		
	Duration of Sighting				4.5	8	6	Bumpy	0		
Behavior	Number of Animals	Adults		Juveniles	5	6	4	Bumpy	0		
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	6	2	Bumpy	0		
	Did Your Activity Change the Animals Behavior	Yes / No			6	11	8	Bumpy	0		
Distance	Observer to Animal	Distance		Feet / Yards / Meters	6.5	6	6	Bumpy	0		
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters	7	10	6	Bumpy	0		
	GPS Coordinates of Observer	GPS/Mile Marker			7.5	8"	6"	Bumpy	0		
Activity	Project Activity During Sighting (vehicle type/equipment)										
	What Actions Were Taken to Mitigate Negative Interaction										
	Duration of Time Operations Impacted										
Notes	Started from Shore										

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol: Observers stop every 1/2 mile and observe 150 m on either side of road for 5 minutes; record details sightings within 150 m. For sightings further than 150 m, record basic info (distance, #, location) in Notes section. Take two snow depth measurements on nearest unpacked snow at each stop; flip coin to choose which side of road to measure. Please take photos of any seals or signs of seals.				Please email this log every survey day to psologs@hilcorp.com				Snow depth	
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
3-3-23									
*Survey Start Time / End Time	Start	End							
	12:30	4:45							
Observer Name	Erin Moorhead			0.5	6	4	Bumpy	0	
Maneuver	Visibility	Distance	Feet / Yards / Meters / Miles	1	6	4	Bumpy	0	
	Estimated % of Sun Glare Affecting Field of Vision	10		1.5	9	4	Bumpy	0	
	Weather Conditions	0%		2	7	4	Bumpy	0	
	Temperature	Fog, Rain, Snow etc.	Clear		2.5	8	6	Bumpy	0
	Wind	Temp	-27		3	6	4	Bumpy	0
	Speed	5		3.5	8	6	Bumpy	0	
	Direction (N,S,E,W)	NE		4	5	5	Bumpy	0	
Sighting	Provide information Below if Seal or Dogfish - Note is Observer - Observe from Start			4	5	5	Bumpy	0	
	Sighting Time Start / End	Start	End	4.5	8	8	Bumpy	0	
	Duration of Sighting			5	6	4	Bumpy	0	
Subsiding	Number of Animals	Adults	Juveniles	5.5	10	7	Bumpy	0	
	Behaviors Observed	Sleeping, Resting, Traveling etc.		6	6	6	Bumpy	0	
	Did Your Activity Change the Animals Behavior	Yes / No		6.5	10	6	Bumpy	0	
Proximity	Observer to Animal	Distance	Feet / Yards / Meters	7	10	6	Bumpy	0	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7.5	7	6	Bumpy	0	
	GPS Coordinates of Observer	GPS/Mile Marker							
Measure	Mark on attached map approx location of seal								
	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
	Duration of Time Operations Impacted								
Notes	started from shore								



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

<p>Survey Protocol: Observers stop every 1/2 mile and observe 150 m on either side of road for 5 minutes; record details sightings within 150 m. For sightings further than 150 m, record basic info (distance, #, location) in Notes section. Take two snow depth measurements on nearest unpacked snow at each stop; flip coin to choose which side of road to measure. Please take photos of any seals or signs of seals.</p>				<p>Please email this log every survey day to psologs@hilcorp.com</p>				<p>Snow depth</p>			
Date	3-5-2023			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)			
*Survey Start Time / End Time	Start	End									
Observer Name	Erin Moorhead			0.5	7"	4"	Bumpy	0			
Observation	Visibility	Distance	10	Feet / Yards / Meters (Miles)	1	6	4	Bumpy	0		
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	8	4	Bumpy	0		
	Weather Conditions	sunny			2	7	4	Bumpy	0		
	Temperature	Temp	~22	C / F	2.5	7	5	Bumpy	0		
	Wind	Speed	20 kts	Direction (N,S,E,W)	3	6	4	Bumpy	0		
<p>Provide information below if Seal or Injured, Injured Observer, Obstructive Lines, etc.</p>				3.5	8	6	Bumpy	0			
Sighting	Sighting Time Start / End	Start		End	4	4	4	Bumpy	0		
	Duration of Sighting				4.5	6	6	Bumpy	0		
Sighting	Number of Animals	Adults	Juveniles		5	6	4	Bumpy	0		
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	8	8	Bumpy	0		
	Did Your Activity Change the Animals Behavior	Yes / No			6	11	8	Bumpy	0		
Sighting	Observer to Animal	Distance	Feet / Yards / Meters		6.5	10	6	Bumpy	0		
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters		7	10	6	Bumpy	0		
	GPS Coordinates of Observer	GPS/Mile Marker			7.5	6	6	Bumpy	0		
Training	Mark on attached map approx location of seal							Bumpy	0		
	Project Activity During Sighting (vehicle type/equipment)							Bumpy	0		
	What Actions Were Taken to Mitigate Negative Interaction							Bumpy	0		
	Duration of Time Operations Impacted							Bumpy	0		
Notes	started from shore										



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol: Observers stop every 1/2 mile and observe 150 m on either side of road for 5 minutes; record details sightings within 150 m. For sightings further than 150 m, record basic info (distance, #, location) in Notes section. Take two snow depth measurements on nearest unpacked snow at each stop; flip coin to choose which side of road to measure. Please take photos of any seals or signs of seals.				Please email this log every survey day to <a href="mailto:psologs@hilcorp.com">psologs@hilcorp.com</a>				Snow depth	
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
3-7-23									
*Survey Start Time / End Time	Start	End							
	13:00	16:15							
Observer Name	Phil Hubbard			0.5	6	4	BUMPS		
Observation	Visibility	Distance	Feet / Yards / Meters (Miles)	1	6	4	11		
	Estimated % of Sun Glare Affecting Field of Vision	10		1.5	7	4	11		
	Weather Conditions	Fog, Rain, Snow etc.		2	7	4	11		
	Temperature	Temp	C / F	2.5	8	5	11		
	Wind	Speed	Direction (N,S,E,W)	3	7	5	11		
		0	N/A		3.5	7	5	11	
Provide Information Below if Seal or Smaller Males Observed, Otherwise Leave Blank.									
Sighting	Sighting Time Start / End	Start	End	4	6	4	11		
	Duration of Sighting			4.5	6	4	11		
Subsighting	Number of Animals	Adults	Juveniles	5	7	4	11		
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	7	5	11		
	Did Your Activity Change the Animals Behavior	Yes / No		6	9	6	11		
Locations	Observer to Animal	Distance	Feet / Yards / Meters	6.5	9	6	11		
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	9	5	11		
	GPS Coordinates of Observer	GPS/Mile Marker		7.5	8	5	11		
	Mark on attached map approx location of seal								
Equipment	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
	Duration of Time Operations Impacted								
Notes	CALM winds								

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol: Observers stop every 1/2 mile and observe 150 m on either side of road for 5 minutes; record details sightings within 150 m. For sightings further than 150 m, record basic info (distance, #, location) in Notes section. Take two snow depth measurements on nearest unpacked snow at each stop; flip coin to choose which side of road to measure. Please take photos of any seals or signs of seals.			Please email this log every survey day to psologs@hlc.com		Snow depth			
Date	mm/dd/yyyy		Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
3-9-23								
*Survey Start Time / End Time	Start	End						
	14:00	17:20						
Observer Name	Phil Hubbard		0.5	6"	4"	bumps		
Weather	Visibility	Distance	Feet / Yards / Meters	Miles	1	5	3	11
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	6	3	11
	Weather Conditions	Fog, Rain, Snow etc...			2	7	4	11
	Temperature	Temp	C / F		2.5	7	4	11
	Wind	Speed	Direction (N,S,E,W)		3	8	5	11
	20 KT	W						
Provide information below if seal or breather hole is observed, otherwise leave blank.					3.5	7	4	11
Sighting	Sighting Time Start / End	Start	End		4	7	4	11
	Duration of Sighting				4.5	6	4	11
Behavior	Number of Animals	Adults	Juveniles		5	6	3	11
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	6	3	11
	Did Your Activity Change the Animals Behavior	Yes / No			6	8	4	11
Distance	Observer to Animal	Distance	Feet / Yards / Meters		6.5	8	5	11
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters		7	9	5	11
	GPS Coordinates of Observer	GPS/Mile Marker			7.5	8	4	11
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes	blowing SNOW							

\*Observer must stop every 1/2 mile and observe 150m either side of road/trail for 5 min.

Survey Protocol:				Please email this log every survey day to psologs@hilcorp.com		Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."										
Date	mm/dd/yyyy			Start	End	Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
	3-11-23			12:00	15:15	0.5	8"	4"	bumpy	
*Survey Start Time / End Time										
Observer Name	Phil Hubbard									
Weather	Visibility	Distance	3	Feet / Yards / Meters (Miles)		1	6"	4"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0				1.5	8"	3"	bumpy	
	Weather Conditions	Light SNOW				2	7"	3"	bumpy	
	Temperature	Temp	5	C / F		2.5	5"	4"	bumpy	
	Wind	Speed	10	Direction (N,S,E,W)		3	8"	4"	bumpy	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.						3.5	6"	3"	bumpy	
Sighting	Sighting Time Start / End	Start		End		4	6"	3"	bumpy	
	Duration of Sighting					4.5	6"	3"	bumpy	
Behavior	Number of Animals	Adults		Juveniles		5	7"	3"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...				5.5	8"	5"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No				6	8"	5"	bumpy	
Distance	Observer to Animal	Distance		Feet / Yards / Meters		6.5	7"	4"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters		7	8"	5"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker				7.25	6"	3"	bumpy	
Activity	Project Activity During Sighting (vehicle type/equipment)									
	What Actions Were Taken to Mitigate Negative Interaction									
	Duration of Time Operations Impacted									
Notes										



\*Observer must stop every 1/2 mile and observe 150m other side of road/trail for 5 min.

Survey Protocol:				Please email this log every survey day to psologs@hilcorp.com		Snow depth		
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."								
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
3-13-23	Start	12:30	End	15:30				
*Survey Start Time / End Time								
Observer Name	Phil Hubbard			0.5	7"	4"	bumpy	
Weather	Visibility	Distance	10	Feet / Yards / Meters / Miles	1	7"	4"	bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	7"	3"	bumpy
	Weather Conditions	Clear / Sunny			2	6"	3"	bumpy
	Temperature	Temp	-22	C / F	2.5	6"	4"	bumpy
	Wind	Speed	12	Direction (N,S,E,W)	3	7"	4"	bumpy
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. include notes to further describe behavior, reactions, etc.				3.5	5"	3"	bumpy	
Sighting	Sighting Time Start / End	Start		End	4	6"	3"	bumpy
	Duration of Sighting				4.5	7"	4"	bumpy
Behavior	Number of Animals	Adults		Juveniles	5	7"	4"	bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	9"	4"	bumpy
	Did Your Activity Change the Animals Behavior	Yes / No			6	8"	5"	bumpy
Distance	Observer to Animal	Distance		Feet / Yards / Meters	6.5	7"	3"	bumpy
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters	7	7"	5"	bumpy
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	6"	3"	bumpy
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes								

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Please email this log every survey day to psologs@hilcorp.com		Snow depth			
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."									
Date	mm/dd/yyyy 3-15-23			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
*Survey Start Time / End Time	Start	14:15	End	17:30					
Observer Name	Phil Hubbard			0.5	5"	3"	bumpy		
Weather	Visibility	Distance	10	Feet / Yards / Meters	1	6"	3"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	7"	4"	bumpy	
	Weather Conditions	Fog, Rain, Snow etc... SUNNY			2	6"	4"	bumpy	
	Temperature	Temp	-28	C / F	2.5	8"	5"	bumpy	
	Wind	Speed	5 kt	Direction (N,S,E,W)	3	8"	5"	bumpy	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				3.5	6"	4"	bumpy		
Sighting	Sighting Time Start / End	Start		End	4	6"	4"	bumpy	
	Duration of Sighting				4.5	9"	5"	bumpy	
Behavior	Number of Animals	Adults		Juveniles	5	7"	3"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	9"	6"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No			6	7"	4"	bumpy	
Distance	Observer to Animal	Distance		Feet / Yards / Meters	6.5	7"	4"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters	7	8"	3"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	7"	4"	bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
	Duration of Time Operations Impacted								
Notes									

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Please email this log every survey day to psologs@hilcorp.com		Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."										
Date	mm/dd/yyyy 3-17-23			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	if snow is in drifts, estimate how close the peaks are to one another (meters)		
*Survey Start Time / End Time	Start	13:30		End	16:30					
Observer Name	Phil Hubbard			0.5	4"	2"	bumpy			
Weather	Visibility	Distance	10	Feet / Yards / Meters / Miles	1	6"	4"	bumpy		
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	6"	4"	bumpy		
	Weather Conditions	Fog, Rain, Snow etc... SUNNY SKIES			2	6"	3"	bumpy		
	Temperature	Temp	-23	C / F	2.5	7"	3"	bumpy		
	Wind	Speed	N/A		Direction (N,S,E,W)	3	7"	4"	bumpy	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. include notes to further describe behavior, reactions, etc.				3.5	6"	4"	bumpy			
Sighting	Sighting Time Start / End	Start		End	4	5"	3"	bumpy		
	Duration of Sighting				4.5	7"	5"	bumpy		
Behavior	Number of Animals	Adults			Juveniles	5	7"	5"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	8"	6"	bumpy		
	Did Your Activity Change the Animals Behavior	Yes / No			6	6"	3"	bumpy		
Distance	Observer to Animal	Distance			Feet / Yards / Meters	6.5	6"	3"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance			Feet / Yards / Meters	7	7"	4"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	6"	4"	bumpy		
Activity	Project Activity During Sighting (vehicle type/equipment)									
	What Actions Were Taken to Mitigate Negative Interaction									
	Duration of Time Operations Impacted									
Notes	STARTED From Shore									



\*Observer must stop every 1/2 mile and observe 150m either side of road/trail for 5 min.

Survey Protocol:				Please email this log every survey day to psologs@hilcorp.com		Snow depth			
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."									
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
3-19-23	Start	12:45	End						15:50
*Survey Start Time / End Time									
Observer Name	Phil Hubbard								
Weather	Visibility	Distance	10	Feet / Yards / Meters	1	5"	3"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	5"	3"	bumpy	
	Weather Conditions	Clear SKY			2	6"	4"	bumpy	
	Temperature	Temp	-9	C / F	2.5	6"	4"	bumpy	
	Wind	Speed	10 KT	Direction (N,S,E,W)	3	6"	3"	bumpy	
	E								
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.					3.5	7"	4"	bumpy	
Sighting	Sighting Time Start / End	Start		End	4	6"	5"	bumpy	
	Duration of Sighting				4.5	6"	4"	bumpy	
Behavior	Number of Animals	Adults		Juveniles	5	8"	5"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	7"	5"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No			6	6"	3"	bumpy	
Distance	Observer to Animal	Distance		Feet / Yards / Meters	6.5	6"	3"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters	7	7"	5"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	6"	3"	bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
	Duration of Time Operations Impacted								
Notes									

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	if snow is in drifts, estimate how close the peaks are to one another (meters)
3 - 21 - 23	Start	1:30	End	4:30	0.5	4"	4"	bumpy
*Survey Start Time / End Time	Observer Name	Erin Moorhead			0.5	4"	4"	bumpy
Weather	Visibility	Distance:	10	Feet / Yards / Meters / Miles	1	5"	4"	bumpy
	Estimated % of Sun Glare Affecting Field of Vision		0%		1.5	5"	3"	bumpy
	Weather Conditions	Fog, Rain, Snow etc...	clear sky		2	5"	4"	bumpy
	Temperature	Temp	10	C / F	2.5	6"	4"	bumpy
	Wind	Speed	7	Direction (N,S,E,W)	3	6"	4"	bumpy
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.					3.5	6"	5"	bumpy
Sighting	Sighting Time Start / End	Start		End	4	5"	5"	bumpy
	Duration of Sighting				4.5	6"	4"	bumpy
Behavior	Number of Animals	Adults:		Juveniles	5	8"	5"	bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	8"	5"	bumpy
	Did Your Activity Change the Animals Behavior	Yes / No			6	6"	3"	bumpy
Distance	Observer to Animal	Distance		Feet / Yards / Meters	6.5	5"	4"	bumpy
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters	7	7"	4"	bumpy
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	6"	3"	bumpy
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes	Started from shore							



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
Date	3-23-23			0.5	4"	4"		bumpy	
Survey Start Time / End Time	Start	End							
	6:00	9:00							
Observer Name	Erin Moorhead								
Weather	Visibility	Distance	Feet / Yards / Meters	1	4"	4"		bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0%		1.5	5"	4"		bumpy	
	Weather Conditions	Fog, Rain, Snow etc...		2	6"	5"		bumpy	
	Temperature	Temp	C / F	2.5	8"	5"		bumpy	
	Wind	Speed	Direction (N,S,E,W)		3	7"	4"		bumpy
		16 Kts	NE						
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				3.5	5"	5"		bumpy	
Sighting	Sighting Time Start / End	Start	End	4	6"	4"		bumpy	
	Duration of Sighting			4.5	8"	5"		bumpy	
Behavior	Number of Animals	Adults	Juveniles	5	8"	5"		bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	8"	5"		bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No		6	6"	4"		bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	5"	4"		bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	7"	4"		bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	7"	3"		bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
	Duration of Time Operations Impacted								
Notes	No seals								

\*Observer must stop every 1/2 mile and observe 1 either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
Date	3-25-23							
*Survey Start Time / End Time	Start	End						
	7:45	10:45						
Observer Name	Erin Moorhead			0.5	4"	3"		bumpy
Weather	Visibility	Distance	Feet / Yards / Meters / Miles	1	5"	3"		bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0		1.5	5"	3"		bumpy
	Weather Conditions	Fog, Rain, Snow etc... Clear		2	6"	5"		bumpy
	Temperature	Temp	C / F	2.5	8"	5"		bumpy
	Wind	Speed	Direction (N,S,E,W)		3	7"	4"	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				3.5	6"	5"		bumpy
Sighting	Sighting Time Start / End	Start	End	4	5"	5"		bumpy
	Duration of Sighting			4.5	6"	4"		bumpy
Behavior	Number of Animals	Adults	Juveniles	5	8"	5"		bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	8"	5"		bumpy
	Did Your Activity Change the Animals Behavior	Yes / No		6	6"	4"		bumpy
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	5"	4"		bumpy
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	7"	5"		bumpy
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	6"	3"		bumpy
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes	Started from shore / No seals							

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
3-27-23								
*Survey Start Time / End Time	Start	End						
	12:00	3:00						
Observer Name	Erin Moorhead			0.5	4"	4"		bumpy
Weather	Visibility	Distance	Feet / Yards / Meters / Miles	1	5"	3"		bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0		1.5	5"	3"		bumpy
	Weather Conditions	Fog, Rain, Snow etc... Clear		2	6"	5"		bumpy
	Temperature	Temp	C / F	2.5	6"	4"		bumpy
	Wind	Speed	Direction (N,S,E,W)		3	6"	5"	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank (include notes to further describe behavior, reactions, etc.)				3.5	6"	5"		bumpy
Sighting	Sighting Time Start / End	Start	End	4	5"	5"		bumpy
	Duration of Sighting			4.5	6"	4"		bumpy
Behavior	Number of Animals	Adults	Juveniles	5	8"	5"		bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	8"	5"		bumpy
	Did Your Activity Change the Animals Behavior	Yes / No		6	6"	4"		bumpy
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	5"	4"		bumpy
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	7"	5"		bumpy
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	6"	3"		bumpy
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative interaction							
	Duration of Time Operations Impacted							
Notes	No seals							



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
3-29-23	7:00			0.5	5"	3"		Bumpy	
*Survey Start Time / End Time	Start	End							
Observer Name	Erin Moorhead								
Weather	Visibility	Distance	Feet / Yards / Meters / Miles	1	5"	3"		Bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0		1.5	5"	4"		Bumpy	
	Weather Conditions	Clear		2	5"	5"		Bumpy	
	Temperature	Temp	C / F	2.5	8"	5"		Bumpy	
	Wind	Speed	Direction (N,S,E,W)		3	5"	5"		Bumpy
	Provide information below for all seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				3.5	7"	4"		Bumpy
Sighting	Sighting Time Start / End	Start	End	4	7"	3"		Bumpy	
	Duration of Sighting			4.5	8"	4"		Bumpy	
Behavior	Number of Animals	Adults	Juveniles	5	9"	4"		Bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	6"	5"		Bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No		6	6"	4"		Bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	5"	5"		Bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	7"	5"		Bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker:		7.25	8"	3"		Bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
	Duration of Time Operations Impacted								
Notes	No seals								

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a <b>minimum of 5 minutes</b> . 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy 3/31/23			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
*Survey Start Time / End Time	Start	End						
Observer Name	Erin Moorhead			0.5	4"	3"		
Weather	Visibility	Distance	10	Feet / Yards / Meters / Miles	1	4"	3"	
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5	4"	4"	
	Weather Conditions	Fog, Rain, Snow etc... Clear			2	5"	4"	
	Temperature	Temp	-4	C / F	2.5	6"	5"	
	Wind	Speed	9	Direction (N,S,E,W)	3	4"	4"	
Provide information below for All seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				3.5	5"	4"		
Sighting	Sighting Time Start / End	Start	End		4	7"	4"	
	Duration of Sighting				4.5	8"	4"	
Behavior	Number of Animals	Adults	Juvvenils		5	8"	4"	
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	6"	5"	
	Did Your Activity Change the Animals Behavior	Yes / No			6	6"	5"	
Distance	Observer to Animal	Distance	Feet / Yards / Meters		6.5	7"	4"	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters		7	6"	5"	
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	8"	4"	
Activity	Mark on attached map approx location of seal							
	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
Duration of Time Operations Impacted								
Notes	No seals							

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Please email this log every survey day to psologs@hilcorp.com		Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."										
Date	mm/dd/yyyy 4-2-23			Mile Marker			Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
*Survey Start Time / End Time	Start	11:45		End	2:45					
Observer Name	Erin Moorhead			0.5			5"	3"		
Weather	Visibility	Distance	10		Feet / Yards / Meters / Miles	1		4"	3"	
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5		4"	3"		
	Weather Conditions	Fog, Rain, Snow etc...			2		5"	5"		
	Temperature	Temp	8		C / F	2.5		7"	5"	
	Wind	Speed	17		Direction (N,S,E,W)	3		4"	4"	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. (Include notes to further describe behavior, reactions, etc.)				3.5		5"	4"			
Sighting	Sighting Time Start / End	Start			End	4		6"	4"	
	Duration of Sighting				4.5		7"	4"		
Behavior	Number of Animals	Adults			Juveniles	5		8"	5"	
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5		5"	5"		
	Did Your Activity Change the Animals Behavior	Yes / No			6		6"	5"		
Distance	Observer to Animal	Distance			Feet / Yards / Meters	6.5		7"	4"	
	Closest Point Animal Approached Road or Activity	Distance			Feet / Yards / Meters	7		5"	5"	
	GPS Coordinates of Observer	GPS/Mile Marker			7.25		8"	5"		
Activity	Mark on attached map approx location of seal									
	Project Activity During Sighting (vehicle type/equipment)									
	What Actions Were Taken to Mitigate Negative Interaction									
Duration of Time Operations Impacted										
Notes	No seals									



\*Observer must stop every 1/2 mile and observe 150m either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-4-23	Start	1:40	End	4:40	0.5	5" 3"	bumpy	
Weather	Visibility	Distance	10	Feet / Yards / Meters	1	6" 3"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5	5" 3"	bumpy	
	Weather Conditions	Fog, Rain, Snow etc... OVERCAST			2	5" 4"	bumpy	
	Temperature	Temp	2	C / F	2.5	7" 4"	bumpy	
	Wind	Speed	10	Direction (N,S,E,W)	3	6" 3"	bumpy	
	Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				3.5	7" 4"	bumpy	
Sighting	Sighting Time Start / End	Start		End	4	5" 4"	bumpy	
	Duration of Sighting				4.5	7" 3"	bumpy	
Behavior	Number of Animals	Adults		Juveniles	5	7" 4"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	6" 3"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No			6	6" 3"	bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters		6.5	6" 3"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters		7	6" 4"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	5" 3"	bumpy	
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes								

\*Observer must stop every 1/2 mile and observe 150r. on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-6-23	Start	12:15	End	3:30	0.5	4"	3"	bumpy
*Survey Start Time / End Time								
Observer Name	Phil Hubbard							
Weather	Visibility	Distance	10	Feet / Yards / Meters / Mile	1	5"	3"	bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5	6"	4"	bumpy
	Weather Conditions	Fog, Rain, Snow etc... clear			2	6"	3"	bumpy
	Temperature	Temp	-17	C <input type="radio"/> F <input checked="" type="radio"/>	2.5	7"	3"	bumpy
	Wind	Speed	15 KT	Direction (N,S,E,W)	3	5"	2"	bumpy
NE					3.5	6"	4"	bumpy
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes for further descriptive behavior, reactions, etc.					4	6"	3"	bumpy
Sighting	Sighting Time Start / End	Start		End	4.5	5"	4"	bumpy
	Duration of Sighting							
Behavior	Number of Animals	Adults		Juveniles	5	6"	4"	bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	7"	5"	bumpy
	Did Your Activity Change the Animals Behavior	Yes / No			6	7"	3"	bumpy
Distance	Observer to Animal	Distance		Feet / Yards / Meters	6.5	7"	3"	bumpy
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters	7	6"	3"	bumpy
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	5"	4"	bumpy
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes								



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
4-8-23	Start	09:30	End	12:30	0.5	5"	3"	bumpy	
*Survey Start Time / End Time									
Observer Name	Phil Hubbard								
Visibility	Distance	10	Feet / Yards / Meters / Miles		1	5"	3"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	7"	3"	bumpy	
	Weather Conditions	Clear		Fog, Rain, Snow etc...		2	6"	4"	bumpy
	Temperature	-30	C <input checked="" type="checkbox"/> F <input type="checkbox"/>		2.5	7"	3"	bumpy	
	Wind	7 kt	Direction (N,S,E,W)		3	6"	3"	bumpy	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.					3.5	5"	2"	bumpy	
Sighting	Sighting Time Start / End		End		4	6"	4"	bumpy	
	Duration of Sighting				4.5	5"	4"	bumpy	
Behavior	Number of Animals	Adults	Juveniles		5	7"	4"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	7"	3"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No			6	8"	4"	bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters		6.5	8"	3"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters		7	7"	4"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	6"	3"	bumpy	
Activity	Mark on attached map approx location of seal								
	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
Duration of Time Operations Impacted									
Notes									

\*Observer must stop every 1/2 mile and observe 150m either side of road/trail for 5 min.

Survey Protocol:				Snow depth			
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com			
Date	mm/dd/yyyy			Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
Date	4-10-23						
*Survey Start Time / End Time	Start	End		Mile Marker			
	10:10	1:15					
Observer Name	Phil Hubbard			0.5	7" 4"	bumpy	
Weather	Visibility	Distance	Feet / Yards / Meters / Miles	1	9" 6"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0		1.5	8" 6"	bumpy	
	Weather Conditions	OVERCAST / blowing SNOW		2	8" 6"	bumpy	
	Temperature	Temp		2.5	5" 3"	bumpy	
	Wind	Speed	Direction (N,S,E,W)	3	6" 4"	bumpy	
Provide information below for ALL seal or breathing hole observations, other seal or bear signs. Include notes to further describe behavior, reactions, etc.				3.5	7" 4"	bumpy	
Sighting	Sighting Time Start / End	Start	End	4	7" 4"	bumpy	
	Duration of Sighting			4.5	8" 4"	bumpy	
Behavior	Number of Animals	Adults	Juveniles	5	5" 3"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	6" 3"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No		6	8" 5"	bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	9" 5"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	7" 5"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	7" 4"	bumpy	
Activity	Mark on attached map approx location of seal						
	Project Activity During Sighting (vehicle type/equipment)						
	What Actions Were Taken to Mitigate Negative Interaction						
Duration of Time Operations Impacted							
Notes							

\*Observer must stop every 1/2 mile and observe 150r. her side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-12-23	Start	2:30	End	5:30	0.5	7"	3"	bumpy
*Survey Start Time / End Time				1	7"	5"	bumpy	
Observer Name	Phil Hubbard			1.5	8"	5"	bumpy	
Weather	Visibility	Distance	3	Feet / Yards / Meters (Miles)	2	6"	4"	bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0			2.5	6"	4"	bumpy
	Weather Conditions	Overcast			3	7"	5"	bumpy
	Temperature	Temp	-17	C (F)	3.5	6"	3"	bumpy
	Wind	Speed	10 KT	Direction (N,S,E,W)	5	7"	5"	bumpy
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				4	7"	3"	bumpy	
Sighting	Sighting Time Start / End	Start	End	4.5	6"	3"	bumpy	
	Duration of Sighting				5	6"	4"	bumpy
	Number of Animals	Adults	Juveniles	5.5	7"	4"	bumpy	
Behavior	Behaviors Observed	Sleeping, Resting, Traveling etc...			6	8"	5"	bumpy
	Did Your Activity Change the Animals Behavior	Yes / No			6.5	8"	4"	bumpy
	Observer to Animal	Distance	Feet / Yards / Meters		7	7"	4"	bumpy
Distance	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters		7.25	6"	3"	bumpy
	GPS Coordinates of Observer	GPS/Mile Marker						
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes								



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-14-23	Start	11:30	End					
*Survey Start Time / End Time								
Observer Name								
Weather	Visibility	Distance	10	Feet / Yards / Meters / Miles	1	6"	4"	bumpy
	Estimated % of Sun Glare Affecting Field of Vision		0		1.5	7"	4"	bumpy
	Weather Conditions	Fog, Rain, Snow etc...	PARTLY CLOUDY		2	5"	3"	bumpy
	Temperature	Temp	-11	C F	2.5	5"	3"	bumpy
	Wind	Speed	5	Direction (N,S,E,W)	3	6"	4"	bumpy
	Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.					3.5	6"	3"
Sighting	Sighting Time Start / End	Start		End	4	5"	4"	bumpy
	Duration of Sighting				4.5	6"	4"	bumpy
Behavior	Number of Animals	Adults		Juveniles	5	5"	3"	bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	6"	3"	bumpy
	Did Your Activity Change the Animals Behavior	Yes / No			6	7"	5"	bumpy
Distance	Observer to Animal	Distance		Feet / Yards / Meters	6.5	7"	4"	bumpy
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters	7	6"	5"	bumpy
	GPS Coordinates of Observer	GPS/Mile Marker:			7.25	6"	4"	bumpy
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes								

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
Date	4-16-23							
*Survey Start Time / End Time	Start	End						
	12:05	3:10						
Observer Name	Phil Hubbard			0.5	5"	3"	bumpy	
Weather	Visibility	Distance	Feet / Yards / Meters / Miles	1	7"	3"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	10		1.5	8"	5"	bumpy	
	Weather Conditions	Fog, Rain, Snow etc...		2	6"	4"	bumpy	
	Temperature	Temp	C / F	2.5	5"	3"	bumpy	
	Wind	Speed	Direction (N,S,E,W)		3	5"	3"	bumpy
	N/A	No wind						
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. include notes to further describe behavior, reactions, etc.				3.5	7"	4"	bumpy	
Sighting	Sighting Time Start / End	Start	End	4	6"	4"	bumpy	
	Duration of Sighting			4.5	6"	4"	bumpy	
Behavior	Number of Animals	Adults	Juveniles	5	5"	4"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	7"	3"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No		6	7"	5"	bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	6"	3"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	7"	4"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	7"	4"	bumpy	
Activity	Mark on attached map approx location of seal							
	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
Duration of Time Operations Impacted								
Notes								

\*Observer must stop every 1/2 mile and observe 150r. per side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-18-23	Start	12:30	End	3:35	0.5	5"	3"	bumpy
*Survey Start Time / End Time								
Observer Name	Erin Moorhead							
Weather	Visibility	Distance	10	Feet / Yards / Meters	1	7"	4"	bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	8"	5"	bumpy
	Weather Conditions	Fog, Rain, Snow etc... clear			2	6"	4"	bumpy
	Temperature	Temp	-11	C / F	2.5	5"	4"	bumpy
	Wind	Speed	7	Direction (N,S,E,W)	3	5"	3"	bumpy
	NE							
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.					3.5	6"	3"	bumpy
Sighting	Sighting Time Start / End	Start		End	4	6"	4"	bumpy
	Duration of Sighting				4.5	6"	4"	bumpy
Observation	Number of Animals	Adults		Juveniles	5	5"	3"	bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	7"	5"	bumpy
	Did Your Activity Change the Animals Behavior	Yes / No			6	6"	5"	bumpy
Distance	Observer to Animal	Distance		Feet / Yards / Meters	6.5	6"	3"	bumpy
	Closest Point Animal Approached Road or Activity	Distance		Feet / Yards / Meters	7	7"	4"	bumpy
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	7"	4"	bumpy
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes	No seals							



\*Observer must stop every 1/2 mile and observe 150m other side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-20-23								
*Survey Start Time / End Time	Start	End						
	9:30 AM	1:25 PM						
Observer Name	Nancy Johnson			0.5	7"	3 1/2"	bumpy	
Weather	Visibility	Distance	Feet / Yards / Meters (Miles)	1	7"	5"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0		1.5	7 1/2"	6"	bumpy	
	Weather Conditions	Fog, Rain, Snow etc...		2	6 1/2"	5"	bumpy	
	Temperature	Temp	C / F	2.5	7"	4 1/2"	bumpy	
	Wind	Speed	Direction (N,S,E,W)	3	6"	4"	bumpy	
		08	NE		3.5	6.5"	4"	bumpy
Provides information below for ALL seal or breathing hole observations, otherwise leave blank. (include notes to further describe behavior, reactions, etc.)								
Sighting	Sighting Time Start / End	Start	End	4	6.5"	5"	bumpy	
	Duration of Sighting			4.5	7"	2"	bumpy	
Behavior	Number of Animals	Adults	Juveniles	5	6 1/2"	4"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	5 1/2"	5"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No		6	7"	4"	bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	5"	4"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	6"	5"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	8"	5"	bumpy	
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes	No seals							

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:			Please email this log every survey day to psologs@hilcorp.com		Snow depth		
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."							
Date	mm/dd/yyyy		Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-22-23	N/A						
*Survey Start Time / End Time	Start	End					
Observer Name	Erin Moorhead		0.5				
Weather	Visibility	Distance 10 miles	Feet / Yards / Meters / Miles	1			
	Estimated % of Sun Glare Affecting Field of Vision	0%		1.5			
	Weather Conditions	Clear		2			
	Temperature	Temp 0	C / F	2.5			
	Wind	Speed 10	Direction (N,S,E,W) NE	3			
Provide information below for ALL seal or breathing hole observations, otherwise skip blank. Include notes to further describe behavior, reactions, etc.			3.5				
Sighting	Sighting Time Start / End	Start	End	4			
	Duration of Sighting			4.5			
Behavior	Number of Animals	Adults	Juveniles	5			
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5			
	Did Your Activity Change the Animals Behavior	Yes / No		6			
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5			
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7			
	GPS Coordinates of Observer	GPS/Mile Marker		7.25			
	Mark on attached map approx location of seal						
Activity	Project Activity During Sighting (vehicle type/equipment)						
	What Actions Were Taken to Mitigate Negative Interaction						
	Duration of Time Operations Impacted						
Notes	seal survey could not be done due to Polar bear resting on Ice path. A polar bear observation report was done in Hilcorp Wildlife platforms. sighting 1:30pm - 5pm						



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy							
	4-24-23							
Survey Start Time / End Time	Start	End		Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
	8:00 AM	11:10 AM						
Observer Name	Wayne Lindquist			0.5	7"	4"		
Weather	Visibility	Distance	Feet / Yards / Meters / Miles	1	7"	5"		
	Estimated % of Sun Glare Affecting Field of Vision	0		1.5	7"	6"		
	Weather Conditions	Fog, Rain, Snow etc...		2	6"	5"		
	Temperature	Temp		2.5	7"	5"		
	Wind	Speed	Direction (N,S,E,W)	3	6"	4"		
	MO -4 C 10 F							
	5 NE			3.5	6"	4"		
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				4	6"	5"		
Sighting	Sighting Time Start / End	Start	End	4.5	7"	3"		
	Duration of Sighting			5	6"	4"		
Behavior	Number of Animals	Adults	Juveniles	5.5	5"	5"		
	Behaviors Observed	Sleeping, Resting, Traveling etc...		6	7"	4"		
	Did Your Activity Change the Animals Behavior	Yes / No						
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	5"	4"		
	Greatest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	6"	5"		
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	6"	5"		
Activity	Mark on attached map approx location of seal							
	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
Duration of Time Operations Impacted								
Notes	No Seals							

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
Date	4-26-23								
*Survey Start Time / End Time	Start	3:00 - 6:00		End					
Observer Name	Erin Moorhead			0.5	7"	4"	bumpy		
Weather	Visibility	Distance	8	Feet / Yards / Meters (Miles)	1	9"	4"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0			1.5	9"	6"	bumpy	
	Weather Conditions	Fog, Rain, Snow etc... overcast			2	8"	5"	bumpy	
	Temperature	Temp	0	C \ F	2.5	11"	5"	bumpy	
	Wind	Speed	3		Direction (N,S,E,W)	3	7"	6"	bumpy
	Provide information below for ALL seal or breaching hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				3.5	8"	6"	bumpy	
Sighting	Sighting Time Start / End	Start			End	4	9"	5"	bumpy
	Duration of Sighting				4.5	8"	4"	bumpy	
Behavior	Number of Animals	Adults			Juveniles	5	7"	4"	bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	3"	3"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No			6	6"	4"	bumpy	
Distance	Observer to Animal	Distance			Feet / Yards / Meters	6.5	4"	4"	bumpy
	Closest Point Animal Approached Road or Activity	Distance			Feet / Yards / Meters	7	6"	5"	bumpy
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	7"	4"	bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
	Duration of Time Operations Impacted								
Notes	No seals observed								

\*Observer must stop every 1/2 mile and observe 150m either side of road/trail for 5 min.

Survey Protocol:			Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; <b>alternate sides of the road.</b> 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."			Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy		Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-28-23							
*Survey Start Time / End Time	Start	End					
	3:00	6:00					
Observer Name	Erin Moorhead		0.5	7"	5"		bumpy
Weather	Visibility	Distance	1	8"	5"		bumpy
	Estimated % of Sun Glare Affecting Field of Vision		1.5	8"	5"		bumpy
	Weather Conditions	Fog, Rain, Snow etc...	2	12"	5"		bumpy
	Temperature	Temp	2.5	9"	6"		bumpy
	Wind	Speed	Direction (N,S,E,W)	3	7"	6"	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.			3.5	8"	7"		bumpy
Sighting	Sighting Time Start / End	Start	4	9"	6"		bumpy
	Duration of Sighting		4.5	8"	4"		bumpy
Behavior	Number of Animals	Adults	5	7"	5"		bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...	5.5	4"	3"		bumpy
	Did Your Activity Change the Animals Behavior	Yes / No	6	6"	5"		bumpy
Distance	Observer to (animal)	Distance	6.5	5"	4"		bumpy
	Closest Point Animal Approached Road or Activity	Distance	7	6"	5"		bumpy
	GPS Coordinates of Observer	GPS/Mile Marker	7.25	7"	6"		bumpy
	Mark on attached map approx location of seal						
Activity	Project Activity During Sighting (vehicle type/equipment)						
	What Actions Were Taken to Mitigate Negative Interaction						
	Duration of Time Operations Impacted						
Notes	No Seals Observed						



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
4-30-23	Start	7:00	End	10:00	0.5	6" 6"		bumpy
*Survey Start Time / End Time	Start	7:00	End	10:00				
Observer Name	Erin Moorhead			0.5	6" 6"			bumpy
Weather	Visibility	Distance	3	Feet / Yards / Meters	1	9" 5"		bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5	8" 5"		bumpy
	Weather Conditions	Fog			2	8" 5"		bumpy
	Temperature	Temp	12	C / F	2.5	10" 7"		bumpy
	Wind	Speed	19	Direction (N,S,E,W)	3	7" 6"		bumpy
	NE				3.5	8" 7"		bumpy
Sighting	Sighting Time Start / End	Start		End	4	9" 5"		bumpy
	Duration of Sighting				4.5	8" 4"		bumpy
Behavior	Number of Animals	Adults		Juveniles	5	8" 4"		bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...			5.5	5" 3"		bumpy
	Did Your Activity Change the Animals Behavior	Yes / No			6	6" 6"		bumpy
Distance	Observer to Animal	Distance	Feet / Yards / Meters		6.5	5" 4"		bumpy
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters		7	6" 5"		bumpy
	GPS Coordinates of Observer	GPS/Mile Marker			7.25	7" 5"		bumpy
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes	No seals observed							

\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
5-2-23	Start	2:00	End	5:00	0.5	6" 4"		bumpy
*Survey Start Time / End Time				1	7" 4"			bumpy
Observer Name	Phil Hubbard			1.5	7" 5"			bumpy
Weather	Visibility	Distance	1/2		2	7" 4"		bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0%		2.5	8" 6"			bumpy
	Weather Conditions	Fog / blowing snow		3	8" 5"			bumpy
	Temperature	Temp	19	C/F	3.5	8" 6"		bumpy
	Wind	Speed	22 kt		4	7" 5"		bumpy
	Direction (N,S,E,W)	NE		4.5	8" 4"			bumpy
Provide information below for ALL seal or breeding hole observations, otherwise leave blank. Includes notes to further describe behavior, reactions, etc.				5	8" 4"			bumpy
Sighting	Sighting Time Start / End	Start			5.5	6" 5"		bumpy
	Duration of Sighting			6	7" 5"			bumpy
Behavior	Number of Animals	Adults			6.5	6" 4"		bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...		7	7" 6"			bumpy
	Did Your Activity Change the Animals Behavior	Yes / No		7.25	6" 5"			bumpy
Distance	Observer to Animal	Distance	Feet / Yards / Meters					
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters					
	GPS Coordinates of Observer	GPS/Mile Marker						
	Mark on attached map approx location of seal							
Activity	Project Activity During Sighting (vehicle type/equipment)							
	What Actions Were Taken to Mitigate Negative Interaction							
	Duration of Time Operations Impacted							
Notes	No seals observed							

\*Observer must stop every 1/2 mile and observe 150m other side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
5-4-23	Start	2:15	End	5:15	0.5	6"	5"	bumpy
*Survey Start Time / End Time				1	6"	4"		bumpy
Observer Name	Phil Hubbard			1.5	7"	4"		bumpy
Weather	Visibility	Distance	10		2	7"	4"	bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0%		2.5	7"	6"		bumpy
	Weather Conditions	Fog, Rain, Snow etc...		3	8"	6"		bumpy
	Temperature	Temp	24	C (F)	3.5	7"	4"	bumpy
	Wind	Speed	5 kts	Direction (N,S,E,W)	E	4	7"	4"
Provide information below for ALL seal or identifying hole observations, otherwise leave blank. Include dates to further describe behavior, conditions, etc.				4	7"	4"		bumpy
Sighting	Sighting Time Start / End	Start	End	4.5	8"	5"		bumpy
	Duration of Sighting			5	6"	5"		bumpy
Behavior	Number of Animals	Adults	Juveniles	5.5	7"	5"		bumpy
	Behaviors Observed	Sleeping, Resting, Traveling etc...		6	8"	6"		bumpy
Distance	Did Your Activity Change the Animals Behavior	Yes / No		6.5	7"	4"		bumpy
	Observer to Animal	Distance	Feet / Yards / Meters	7	7"	5"		bumpy
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7.25	5"	4"		bumpy
Activity	GPS Coordinates of Observer	GPS/Mile Marker						
	Mark on attached map approx location of seal							
	Project Activity During Sighting (vehicle type/equipment)							
What Actions Were Taken to Mitigate Negative Interaction								
Duration of Time Operations Impacted								
Notes	1 seal mile marker 1.0 > 150m 1 seal mile marker 7.0 > 150m							



\*Observer must stop every 1/2 mile and observe 150m either side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
5-4-23	Start	2:15	End	5:15	0.5	6"	5"	bumpy	
*Survey Start Time / End Time									
Observer Name	Phil Hubbard								
Visibility	Distance	10	Feet / Yards / Meters / Miles		1	6"	4"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5	7"	4"	bumpy	
	Weather Conditions	overcast			2	7"	4"	bumpy	
	Temperature	Temp	24	C (F)	2.5	7"	6"	bumpy	
	Wind	Speed	5 kT	Direction (N,S,E,W)	3	8"	6"	bumpy	
	Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.					3.5	7"	4"	bumpy
Sighting	Sighting Time Start / End	Start	2:30 & 4:50	End	2:40 & 5:00	4	7"	4"	bumpy
	Duration of Sighting	10 min - 10 min			4.5	8"	5"	bumpy	
Behavior	Number of Animals	Adults	1 - 1	Juveniles		5	6"	5"	bumpy
	Behaviors Observed	RESTING / RESTING			5.5	7"	5"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No			6	8"	6"	bumpy	
Distance	Observer to Animal	Distance	400 / 300	Feet / Yards / Meters	6.5	7"	4"	bumpy	
	Greatest Point Animal Approached Road or Activity	Distance	400 / 300	Feet / Yards / Meters	7	7"	5"	bumpy	
	GPS Coordinates of Observer	mile 1 / mile 7			7.25	5"	4"	bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)	Seal Survey - Tucked Snow Car							
	What Actions Were Taken to Mitigate Negative Interaction	NONE							
	Duration of Time Operations Impacted	N/A							
Notes	1 seal mile marker 1.0 > 150m								
	1 seal mile marker 7.0 > 150m								



\*Observer must stop every 1/2 mile and observe 150m other side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
Date	5-6-23								
*Survey Start Time / End Time	Start	End							
	12:00	3:00							
Observer Name	Phil Hubbard			0.5	5"	4"		bumpy	
Weather	Visibility	Distance	Feet / Yards / Meters / Miles	1	6"	4"		bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0%		1.5	6"	5"		bumpy	
	Weather Conditions	Fog		2	5"	4"		bumpy	
	Temperature	Temp	C / F	2.5	6"	4"		bumpy	
	Wind	Speed	Direction (N,S,E,W)		3	6"	5"		bumpy
		0	N/A		3.5	7"	5"		bumpy
Sighting	Sighting Time Start / End	Start	End	4	6"	4"		bumpy	
	Duration of Sighting			4.5	7"	6"		bumpy	
Behavior	Number of Animals	Adults	Juveniles	5	6"	5"		bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	7"	5"		bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No		6	7"	5"		bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	6"	4"		bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	6"	5"		bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	5"	4"		bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)								
	What Actions Were Taken to Mitigate Negative Interaction								
	Duration of Time Operations Impacted								
Notes	Poor visibility - No seals observed								

\*Observer must stop every 1/2 mile and observe 150m other side of road/trail for 5 min.

Survey Protocol:			Snow depth	
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."			Please email this log every survey day to psologs@hilcorp.com	
Date	mm/dd/yyyy 5-8-23			
*Survey Start Time / End Time	Start	End	Mile Marker	Deepest Snow Depth (meters/cm)
Observer Name			0.5	
Weather	Visibility	Distance 1/4 mile	Feet / Yards / Meters / Miles	
	Estimated % of Sun Glare Affecting Field of Vision			
	Weather Conditions	Fog, Rain, Snow etc... Fog		
	Temperature	Temp	C \ F	
	Wind	Speed	Direction (N,S,E,W)	
Provide information below for full seal or breathing hole observations, otherwise leave blank. Includes notes to further describe behavior, reactions, etc.			3.5	
Sighting	Sighting Time Start / End	Start	End	4
	Duration of Sighting			4.5
Behavior	Number of Animals	Adults	Juveniles	5
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5
	Did Your Activity Change the Animals Behavior	Yes / No		6
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7
	GPS Coordinates of Observer	GPS/Mile Marker		7.25
	Mark on attached map approx location of seal			
Activity	Project Activity During Sighting (vehicle type/equipment)			
	What Actions Were Taken to Mitigate Negative Interaction			
	Duration of Time Operations Impacted			
Notes	No survey today due to inclement weather Dense Fog - visibility less than 1/4 mile			

\*Observer must stop every 1/2 mile and observe 150m other side of road/trail for 5 min.

Survey Protocol:				Snow depth				
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com				
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
Date	5-10-23							
*Survey Start Time / End Time	Start	End						
	11:45	2:35						
Observer Name	Phil Hubbard			0.5	4"	3"	bumpy	
Weather	Visibility	Distance	Feet / Yards / Meters / Miles	1	5"	3"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	10		1.5	4"	3"	bumpy	
	Weather Conditions	Fog, Rain, Snow etc...		2	6"	4"	bumpy	
	Temperature	Temp	C / F	2.5	6"	4"	bumpy	
	Wind	Speed	Direction (N,S,E,W)		3	5"	3"	bumpy
		05	E		3.5	5"	4"	bumpy
Provide information below for ALL seal or breeding tide observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				4	6"	4"	bumpy	
Sighting	Sighting Time Start / End	Start	End	4.5	6"	3"	bumpy	
	Duration of Sighting	7 minutes per sightings		5	5"	4"	bumpy	
Behavior	Number of Animals	Adults	Juveniles	5.5	5"	4"	bumpy	
	Behaviors Observed	Sleeping, Resting, Traveling etc...		6	6"	3"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No		6.5	6"	4"	bumpy	
Distance	Observer to Animal	Distance	Feet / Yards / Meters	7	5"	4"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7.25	5"	4"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker						
	Mark on attached map approx location of seal	1.5, 2.0, 5.5(2), 6.5, 7.5						
Activity	Project Activity During Sighting (vehicle type/equipment)	Survey, SNOWCAT						
	What Actions Were Taken to Mitigate Negative Interaction	NONE						
	Duration of Time Operations Impacted	N/A						
Notes	6 seals spotted spread out between mile 1.5 - 7.5. 2 Animals together at mile 5.5, 1 adult 1 juvenile Closest animal to trail was 250 m - at mile 2.0							



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
5-12-23	Start	12:40	End	3:55	0.5	4"	2"	bumpy	
*Survey Start Time / End Time				1	4"	3"	bumpy		
Observer Name	Phil Hubbard			1.5	3"	2"	bumpy		
Weather	Visibility	Distance	5	Feet / Yards / Meters / Miles	2	5"	3"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0%			2.5	5"	4"	bumpy	
	Weather Conditions	OVERCAST			3	4"	2"	bumpy	
	Temperature	Temp	30	C (F)	3.5	5"	3"	bumpy	
	Wind	Speed	CALM		4	7"	4"	bumpy	
		Direction (N,S,E,W)	N/A		4.5	5"	3"	bumpy	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.				5	7"	3"	bumpy		
Sighting	Sighting Time Start / End	Start	2:50	End	3:40	5.5	6"	5"	bumpy
	Duration of Sighting	10 min per sightings			6	5"	4"	bumpy	
Behavior	Number of Animals	Adults	3	Juveniles		6.5	7"	4"	bumpy
	Behaviors Observed	RESTING			7	5"	3"	bumpy	
	Did Your Activity Change the Animals Behavior	Yes / No			7.25	5"	4"	bumpy	
Distance	Observer to Animal	Distance	> 250	Feet / Yards / Meters					
	Closest Point Animal Approached Road or Activity	Distance	> 250	Feet / Yards / Meters					
	GPS Coordinates of Observer	GPS/Mile Marker	mile 5.3 (2) mile 7.5 (1)						
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)	Survey, SNO-CAT							
	What Actions Were Taken to Mitigate Negative Interaction	NONE							
	Duration of Time Operations Impacted	N/A							
Notes	2 seals at mile 5.3, 1 seal at mile 7.5								

\*Observer must stop every 1/2 mile and observe 150m either side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
5-14-23	Start	12:05	End	3:15	0.5	3"	2"	bumpy	
*Survey Start Time / End Time	Start	12:05	End	3:15	1	3"	2"	bumpy	
Observer Name	Phil Hubbard			0.5	3"	2"	bumpy		
Weather	Visibility	Distance	10	Feet / Yards / Meters / Miles	1	3"	2"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5	3"	2"	smooth	
	Weather Conditions	PARTLY CLOUDY			2	4"	2"	smooth	
	Temperature	Temp	39	C <input checked="" type="radio"/> F <input type="radio"/>	2.5	5"	3"	smooth	
	Wind	Speed	10	Direction (N,S,E,W)	3	3"	2"	smooth	
Provide information below for ALL seal or breathing hole observations, otherwise leave blank. (include notes to further describe behavior, reactions, etc.)					3.5	5"	3"	bumpy	
Sighting	Sighting Time Start / End	Start	12:30	End	3:00	4	6"	4"	bumpy
	Duration of Sighting	5 min per sighting			4.5	5"	4"	bumpy	
Behavior	Number of Animals	Adults	9	Juveniles	5	6"	3"	smooth	
	Behaviors Observed	RESTING			5.5	5"	4"	smooth	
	Did Your Activity Change the Animals Behavior	Yes / <input checked="" type="radio"/> No <input type="radio"/>			6	4"	3"	smooth	
Distance	Observer to Animal	Distance	> 200	Feet / Yards / Miles	6.5	6"	4"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance	> 200	Feet / Yards / Miles	7	5"	3"	bumpy	
	GPS Coordinates of Observer	1.5, (2) 2.0, 2.8, 3.4, 5.5 (2) 7.5 (2) 7.25			7.25	5"	3"	bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)	SURVEY, SNO-CAT							
	What Actions Were Taken to Mitigate Negative Interaction	NONE							
	Duration of Time Operations Impacted	N/A							
Notes	Trail SMOOTHING OUT, LOSING SNOW, WARM TEMPS 2 seals at 1.5, 1 seal at 2.0, 2.8, 3.4 - 2 seals at 5.5 & 7.5								



\*Observer must stop every 1/2 mile and observe 150m on either side of road/trail for 5 min.

Survey Protocol:				Snow depth			
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com			
Date	Start	End	Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)
mm/dd/yyyy 5-16-23	12:35	3:35	0.5	3"	2"	bumpy	
*Survey Start Time / End Time							
Observer Name	Erin Moorhead						
Weather	Visibility	Distance 2 miles	Feet / Yards / Meters / Miles	1	3"	3"	bumpy
	Estimated % of Sun Glare Affecting Field of Vision	0%		1.5	3"	2"	smooth
	Weather Conditions	Fog, Rain, Snow etc...		2	4"	3"	smooth
	Temperature	Temp		2.5	5"	3"	smooth
	Wind	Speed	Direction (N,S,E,W)	3	3"	3"	smooth
	Provide information below for ALL wind or breathing hole observations, otherwise leave blank. Include notes to further describe behavior, reactions, etc.			3.5	5"	4"	bumpy
Sighting	Sighting Time Start / End	Start	End	4	6"	4"	bumpy
	Duration of Sighting	5 min per instance		4.5	5"	3"	bumpy
Behavior	Number of Animals	Adults	Juveniles	5	6"	4"	smooth
	Behaviors Observed	Sleeping, Resting, Traveling etc...		5.5	4"	3"	smooth
	Did Your Activity Change the Animals Behavior	Yes / No		6	4"	4"	smooth
Distance	Observer to Animal	Distance	Feet / Yards / Meters	6.5	6"	4"	bumpy
	Closest Point Animal Approached Road or Activity	Distance	Feet / Yards / Meters	7	5"	3"	bumpy
	GPS Coordinates of Observer	GPS/Mile Marker		7.25	4"	3"	bumpy
	Mark on attached map approx location of seal						
Activity	Project Activity During Sighting (vehicle type/equipment)	Survey Sno-cat					
	What Actions Were Taken to Mitigate Negative Interaction	None					
	Duration of Time Operations Impacted	N/A					
Notes	2 seals at mile 5.5 1 seal at mile 2.0						

\*Observer must stop every 1/2 mile and observe 150m either side of road/trail for 5 min.

Survey Protocol:				Snow depth					
1. Observer stops every 0.5 miles and observes 150 m on either side of the road for a minimum of 5 minutes. 2. Record sighting details for ALL sightings. Take photos of seals or signs of seals. 3. Take two snow depth measurements on the nearest unpacked snow at each stop; alternate sides of the road. 4. If a survey was not done on a particular day due to inclement weather, submit a log with a note saying "No seal survey due to inclement weather."				Please email this log every survey day to psologs@hilcorp.com					
Date	mm/dd/yyyy			Mile Marker	Deepest Snow Depth (meters/cm)	Shallowest Snow depth (meters/cm)	Snow characterization (Bumpy Uniform Flat, etc)	If snow is in drifts, estimate how close the peaks are to one another (meters)	
5-18-22	Start	9:00	End	12:00	0.5	3"	2"	bumpy	
*Survey Start Time / End Time									
Observer Name	Erin Moorhead								
Weather	Visibility	Distance	10	Feet / Yards / Meters	1	3"	3"	bumpy	
	Estimated % of Sun Glare Affecting Field of Vision	0%			1.5	4"	4"	smooth	
	Weather Conditions	Fog, Rain, Snow etc...	Clear		2	4"	4"	smooth	
	Temperature	Temp	29	C / F	2.5	5"	4"	smooth	
	Wind	Speed	8	Direction (N,S,E,W)	3	3"	3"	smooth	
	Provide information below for All land or breathing hole observations, otherwise leave blank. include notes to further describe behavior, reactions, etc.				3.5	5"	3"	bumpy	
Sighting	Sighting Time Start / End	Start	9:00	End	12:00	4	6"	4"	bumpy
	Duration of Sighting	5 min per instance			4.5	5"	4"	bumpy	
Behavior	Number of Animals	Adults	6	Juveniles	5	5"	4"	smooth	
	Behaviors Observed	Sleeping, Resting, Traveling etc... Resting			5.5	4"	3"	smooth	
	Did Your Activity Change the Animals Behavior	Yes / No			6	4"	3"	smooth	
Distance	Observer to Animal	Distance	>200	Feet / Yards / Meters	6.5	5"	4"	bumpy	
	Closest Point Animal Approached Road or Activity	Distance	>200	Feet / Yards / Meters	7	5"	4"	bumpy	
	GPS Coordinates of Observer	GPS/Mile Marker 1.5, 2.0, 3.4, 5.5 (2), 7.5			7.25	4"	3"	bumpy	
	Mark on attached map approx location of seal								
Activity	Project Activity During Sighting (vehicle type/equipment)	Survey snow cat							
	What Actions Were Taken to Mitigate Negative Interaction	None							
	Duration of Time Operations Impacted	N/A							
Notes	1 seal ea @ mile 1.5, 2.0, 3.4, <del>5.5</del> , 7.5 2 seal @ 5.5								