



# DETAILS

## Non-technical project proposal description

English: Overview: Polar Knowledge Canada, in collaboration with Canmet Energy Ottawa/Natural Resources Canada, is proposing to install a solar resource monitoring station along Waterlake Rd, in northern Cambridge Bay, NU. Purpose: The purpose of the station is to track and compile meteorological and solar resource data. Very few solar resource ground station datasets exist for Canada's Arctic, so the data from this station can provide valuable insights on solar radiation variability, and can be used to improve large weather models over polar regions. The lessons learned from this station can be used to improve best practices for Arctic solar resource monitoring, and to support the integration of renewable energy in Arctic communities. Activities: A sun tracker and various meteorological sensors will be deployed along Waterlake Rd, measuring solar radiation, albedo, wind speed and direction, temperature, humidity, air pressure, snow depth, and precipitation. The system will consist of two enclosures on tripods, and a sun tracker and precipitation gauge mounted on two platforms. The equipment will be grid-powered, with Starlink connectivity. There will be two staff onsite for 2 days in July 2026 to install the equipment, and the site will be visited weekly by POLAR staff for maintenance. Timeline: The monitoring station will be deployed in July 2026, and will continue collecting data indefinitely. Results: The data and results will be published in various formats, including on a Natural Resources Canada website, conference papers, and peer reviewed articles. Impacts: The monitoring equipment is all minimally invasive. The site is within hamlet boundaries in a pre-disturbed area, so there is unlikely to be any impacts to the environment, wildlife, or people. If the project ends, the site will be fully restored to its previous condition.

French: N/A

Inuktitut: N/A

Inuinnaqtun: Havakhautinik: Hiqinirmit Atuqtakhanik Munaqhijutikhaq Ilittuqhinit: Ukiuqtaqtumi Qauhimayatuqat Kanatami, havaqatigiplugit Canmet Energy Ottawa/Nunamiittutuqat Piquitit Kanatami, iliurayumayut hiqinirmit atuqtakhanik munaqhivikhamik talvani Waterlake Rd, tunun'ngani Iqaluktuuttiami, Nunavut. Pityuta: Pidjutikhaa nayurvinga naunaiyariami katitirlugulu hilaup hiqinirmilu ikayuutikkut illituripkaidjutit. Ikitpiaqtun hiqinirmin hanaqidjutikharnik nunami nayugaingit naunairutikhangit aulayut talvani Kanatami Ukiuqtaqtuniitunik, taimaa naunairutikhangit talvannga nayugaani tunigiaqaqtun akhuurnaqtunik tautuktuuyaarutikharnik hiqinirmin aulavikhangit aallatqiinguyut, atuqtaugiaqaqtunlu ihuaqhaidjutikharnik angiyunik hilaup qanurinmangaangit ukiuqtaqtuniitunik. Ayuiqtatik haffumanga nayugaanin atuqtauyaaqtut ihuaqhiyuumigianganinakuutqiyat atuqtauyut haffumunga Ukiuqtaqtumi hiqinikkut ikayuutikkut munaridjutit, uvvalu ikayuutikhat ilauqatigiingnikkut atuffaaqtaaqut auladjutit Ukiuqtaqtumi nunallaat. Hulidjuhiit: Hiqinirmit naunaiyaidjut uvvalu aallatqiit hilap naunaiyautait iliuraqtauniaqtut uvani Waterlake Apqutaani, aktilaarlugit hiqinirmin uunarnia, albedo, anurip kayumiktilaanga humullu, uunarnia, atipkarnia, hilap aulania, aput itiniqhaa, uvvalu nipalungnia. Taamna auladjutikhaq piqarniaqtuq malrungnik avatingnik nappaqtirutingnik, hiqinirmilu naunairutikharnik nipalungnik ihivriudjutikharnik iliyauhmayut malrungnik qiyungnik tunngavikharnik. Tamayat aulapkaqtauniaqtut alruyaqtuutikkut, Starlink atadjutiqlutik. Malruk havaktiik tahamaniinaqtuk malrungni ubluni Taaqhivalirvia 2026 iliurailutik ingilrutinik, nayugaalu pulaqtauniaqtuq havainirmi POLAR-kut havaktiinnit ihuaqhaqtauyanginni. Naunaipkutit Pivikhaqarningit: Munaridjutikkut nayugaa atuliqtauniaqtuq uvani Taaqhivalirvia 2026, aulahimaaqtumik katitirilutik naunaiyautinik tavungaraaluk. Kiuviniit: Naunaiyautit uvvalu qanurinningit titiraqtauniaqtut aallatqiinik atugakhanik, ilaayut uvani Nunamiittutuqat Piquitit Kanatami qaritauyaliviani, katimarjuagutini titiqqat, uvvalu havaqatimin-ihivriuqtauyut titiraqhimayut. Hulaqutit: Amirinikkut hanalrutit tamaita mikiyumik ihuirutivaktut. Inigiyaayuuq haamatalkut kikligiyaini hivuani aktuqtauhimayumi nunani, taimainingani ihuilidjutiqalimanngittuq avatauyumut, uumayunut, inungnulluuniit. Havaakhaq nungutpat, nayugaa ihuaqhaqtauniaqtuq kinguani idjuhanun.

## Personnel

Personnel on site: 2

Days on site: 2

Total Person days: 4

Operations Phase: from 2026-06-24 to 2036-06-24

## Activities

<b>Location</b>	<b>Activity Type</b>	<b>Land Status</b>	<b>Site history</b>	<b>Site archaeological or paleontological value</b>	<b>Proximity to the nearest communities and any protected areas</b>
Solar Resource Monitoring Station	Researching	Municipal	Within municipal boundary of Cambridge Bay	N/A	Within municipal boundary of Cambridge Bay

## Community Involvement & Regional Benefits

<b>Community</b>	<b>Name</b>	<b>Organization</b>	<b>Date Contacted</b>
Cambridge Bay	Jason Maas	Polar Knowledge Canada	2025-02-01

# Authorizations

Indicate the areas in which the project is located:

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## Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Research Institute	NRI Research permit	Not Yet Applied		
Nunavut Planning Commission	NPC File NO. 151050	Active		

## Project transportation types

Transportation Type	Proposed Use	Length of Use
Land	Site is accessible by road. Will travel by truck to install and maintain equipment.	

## Project accomodation types

Other,

# Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Truck	1	19 ft L x 7 ft W x 7ft H	Site will be accessed by truck

## Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
none	hazardous	0	0	0	Kg	none
Gasoline	fuel	1	20	20	Gallons	The only fuel onsite will be in the gas tank of the truck used to access the site

## Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0		

# Waste

## Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Researching	Other, Miscellaneous cardboard/plastic	1 box	Will take any cardboard/plastic waste to the landfill	n/a

### Environmental Impacts:

The monitoring equipment is all minimally invasive. There is unlikely to be any impacts to the environment, wildlife, or people, since the site is on pre-disturbed land within municipal boundaries. The platforms will be designed to minimize contact with the ground. If the project ends, the site will be fully restored to its previous condition.

# **Additional Information**

**SECTION A1: Project Info**

**SECTION A2: Allweather Road**

**SECTION A3: Winter Road**

**SECTION B1: Project Info**

**SECTION B2: Exploration Activity**

**SECTION B3: Geosciences**

**SECTION B4: Drilling**

**SECTION B5: Stripping**

**SECTION B6: Underground Activity**

**SECTION B7: Waste Rock**

**SECTION B8: Stockpiles**

**SECTION B9: Mine Development**

**SECTION B10: Geology**

**SECTION B11: Mine**

**SECTION B12: Mill**

**SECTION C1: Pits**

**SECTION D1: Facility**

**SECTION D2: Facility Construction**

**SECTION D3: Facility Operation**

**SECTION D4: Vessel Use**

**SECTION E1: Offshore Survey**

**SECTION E2: Nearshore Survey**

**SECTION E3: Vessel Use**

## **SECTION F1: Site Cleanup**

## **SECTION G1: Well Authorization**

## **SECTION G2: Onland Exploration**

## **SECTION G3: Offshore Exploration**

## **SECTION G4: Rig**

## **SECTION H1: Vessel Use**

## **SECTION H2: Disposal At Sea**

## **SECTION I1: Municipal Development**

### **Description of Existing Environment: Physical Environment**

Pre-disturbed area within boundary of Cambridge Bay

### **Description of Existing Environment: Biological Environment**

Rocky, pre-disturbed area. Moss, lichen, small herbaceous plants.

### **Description of Existing Environment: Socio-economic Environment**

Within municipal limits of Cambridge Bay

### **Miscellaneous Project Information**

The intent of the project is to collect solar resource data, which will be published to a public portal. There are very few solar resource ground stations in the Arctic, so this data will provide valuable insights on solar radiation variability, and can be used to improve large weather models over polar regions. The data can also be used to support renewable energy integration in Arctic communities.

### **Identification of Impacts and Proposed Mitigation Measures**

Potential environmental impacts are very low. The monitoring equipment is non-invasive, and will be placed on the ground (no groundwork or digging required). The sensors will be collecting data on solar radiation, temperature, wind, humidity, snow depth, air pressure, and precipitation. The site will be restored to its present condition at the end of the project.

### **Cumulative Effects**

N/A

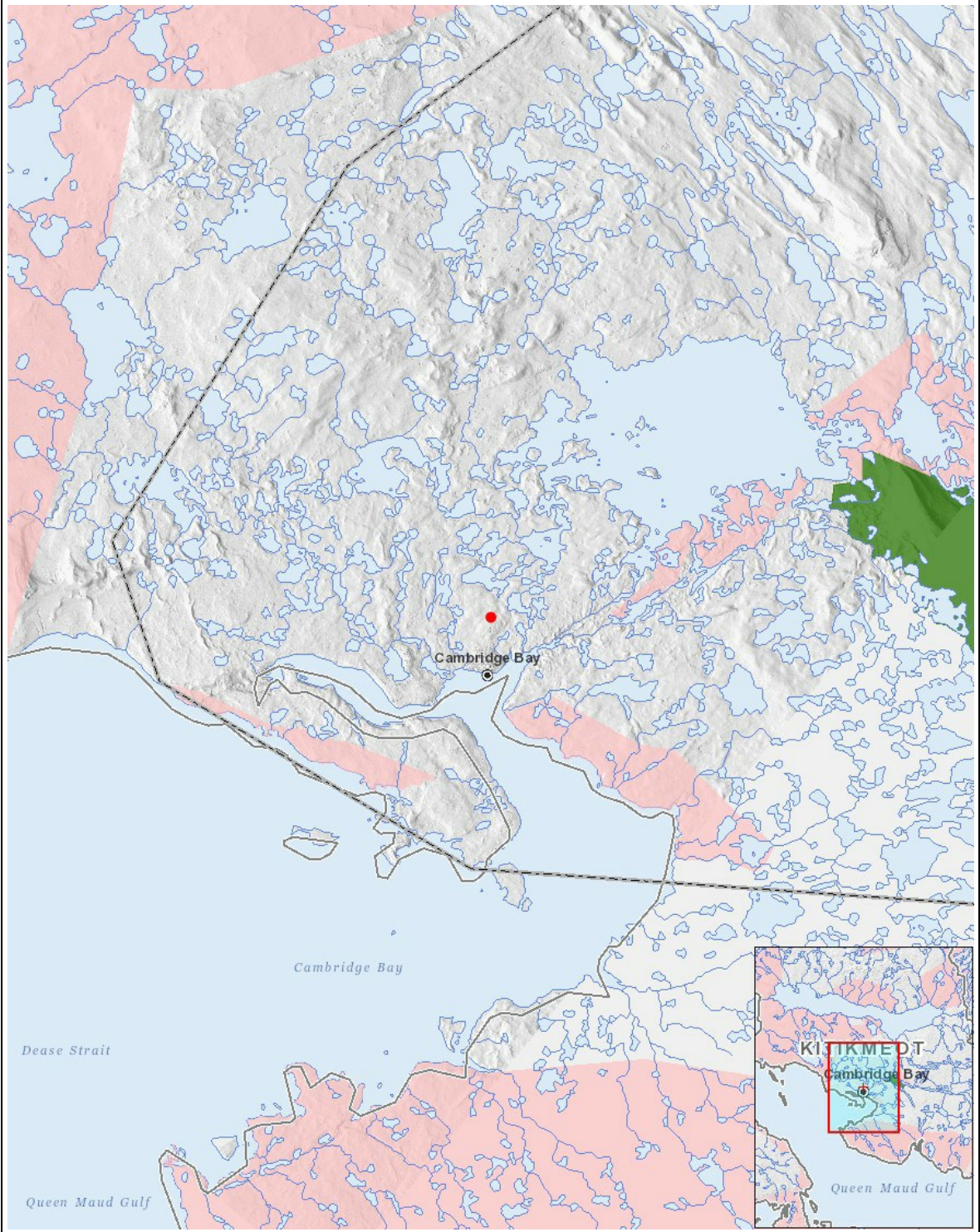
# Impacts

## Identification of Environmental Impacts

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
<b>Construction</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Operation</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Decommissioning</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

1	point	Solar Resource Monitoring Station
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