



Appendix C

Sanikiluaq Wind Energy Project Socio-Economic Impact
Assessment Report

Sanikiluaq Wind Energy Project Socio-Economic Impact Assessment Report

April 14, 2022



Submitted to:

Heather Shilton, Director
Nunavut Nukkiksautiit Corporation
P.O. Box 1228
Iqaluit, NU X0A 0H0

Table of Contents

Abbreviations	3
1. Introduction	4
2. Regulatory Regime.....	5
2.1. Development Permit.....	5
2.2. Land Acquisition Approvals.....	5
2.3. Regional Context.....	6
2.4. Land Tenure	6
3. Consultation Plan and Principles.....	7
3.1. Consultation Plan	7
3.2. Groups Consulted.....	8
3.3. Consultation Activities	15
3.4. Key Issues and Concerns	16
3.5. Planned Future Consultation Activities.....	24
4. Socio-Economic Environment Conditions	26
4.1. Selection of Valued Components	26
5. Project Interactions	59
5.1. Impact Assessment Methods	66
6. Socio-Economic Impact Assessment.....	69
6.1. Economic Development Opportunities.....	69
7. Cumulative Effects Assessment	89
7.1. Methods.....	89
7.2. Human Environment Cumulative Impact Assessment.....	96
7.3. Summary of the Cumulative Effects Assessment	98
8. Sustainability Assessment	100
9. Socio-Economic Impacts Monitoring Plan	104
9.1. Introduction / Approach	104
9.2. Monitoring.....	109
10. Conclusion	111
References.....	112

Abbreviations

Abbreviation	Definition
AES	Artic Eider Society
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
CPHO	Chief Public Health Officer
CVD	Cardiovascular Disease
CWB	Community Well-Being
DOT	Daily Observed Therapy
GERD	Gastro-oesophageal Reflux Disease
HTA	Hunters and Trappers Association
IQ	Inuit Qaujimajatuqangit
ISC	Indigenous Services Canada
ISS	Infrastructure for a Sustainable Sanikiluaq report
LSA	Local Study Area
MLA	Member of the Legislative Assembly
MOU	Memorandum of Understanding
NBS	Nunavut Board of Statistics
NHC	Nunavut Housing Corporation
NIRB	Nunavut Impact Review Board
NTIP	Nunavut Teacher Induction Program
QBDC	Qikiqtaaluk Business Development Corporation
QEC	Qulliq Energy Corporation
QIA	Qikiqtani Inuit Association
RSA	Regional Study Area
SCEDP	Sanikiluaq Community Economic Development Plan
SCP	Sanikiluaq Community Plan
TB	Tuberculosis
UNBC	United Nations Brundtland Commission
VSEC	Valued Socio-economic Component
WHO	World Health Organization

1. Introduction

Odonaterra Inc., in partnership with Northern Futures Planning, was retained to provide consulting services to complete the socio-economic components of an environmental impact assessment in support of the Nunavut Impact Review Board (NIRB) proposal screening process of the Sanikiluaq Wind Energy Project.

From a regulatory context, this report provides a background on development permits, land acquisition approvals, regional context and land tenure. A detailed summary of the Project related consultation efforts conducted between 2015 and 2022, is presented in section 3. Consultation has been conducted between the Proponent (NNC) and Sanikiluaq residents, Hamlet staff, and Council. Additionally, an in-community visit and findings from February 2022 are summarized. The consultation section also includes a detailed issues summary, which has been developed from consultation records between the Proponent, stakeholders and Indigenous community members.

Section 4 presents a baseline of socio-economic conditions within the Project study area, including the local study area (LSA) and the regional study area (RSA). The baseline presents valued socio-economic components (VSECs) that were identified through a combination of consultation activities and recommendations from the NIRB.

An impact assessment was conducted on identified VSECs, based on the impacts identified through baseline research, consultation, and the professional expertise of the consulting team. Each impact is assessed in section 6 using the methodology presented in section 5. Mitigation and/or enhancement measures are presented for each potential effect to minimize possible negative residual effects and maximize possible positive effects of the Project.

Cumulative effects are assessed in Section 7. A sustainability assessment was also conducted based on previous community economic and infrastructure goals for Sanikiluaq and included in section 8. Sustainability in this context includes cultural, economic, environmental and social sustainability, and has been conducted for all identified VSECs to ensure that the long-term health of each value is maintained.

Finally, a socio-economic impacts monitoring plan is provided in section 9. The purpose of this plan is to summarize socio-economic mitigation and enhancement measures. In addition, this plan outlines a proposed socio-economic monitoring plan designed to facilitate issues tracking and management regarding the intended and unintended impacts and benefits of the Project.

2. Regulatory Regime

This section presents information on development permits, land acquisition approvals, regional context and land tenure.

2.1. Development Permit

A development permit application, including plans and any required studies, will be submitted for review to the Hamlet of Sanikiluaq. The Project will be required to conform to the policies of the Sanikiluaq Community Plan No.83 and comply with the provisions of Sanikiluaq Zoning By-law No.84 to acquire an approved development permit. However, the Hamlet of Sanikiluaq is currently in the process of approving a new community plan and zoning by-law, which are anticipated to be in effect at the time of development permit approval for the Project.

The lands for the proposed Project site are designated “Nuna” in both the current and draft community plan. The Nuna designation applies to all unsurveyed land within the municipal boundary not designated by another land use. The Nuna designation is intended to protect natural and cultural resources while providing for traditional, recreation and tourism activities. The current and draft community plans both allow for infrastructure projects for local economic development, such as the proposed Project. Based on these policies, it is interpreted that the proposed Project would not require an amendment to the Sanikiluaq Community Plan No. 83.

Developments within Nuna designated lands must be consistent with the guiding principles of Inuit Qaujimajatuqangit and must not negatively impact wildlife, wildlife habitat, or harvesting. Mitigation measures as described in the below socio-economic impact assessment and in the biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions will be applied to ensure that potential environmental effects are minimized during construction and operations.

The draft community plan identifies the watershed of the community’s water supply. The policies in the watershed overlay are to prohibit all development in the overlay, unless it can be demonstrated that it will have no impact on the community’s water source. As such, the Project site will be located outside of the watershed boundary.

The lands for the Project site are zoned Nuna in the current and draft zoning by-law. In the draft zoning by-law, the Nuna Zone specifically permits a “Wind Turbine.” There are no required setbacks for developments within the Nuna Zone. However, the provisions of the Nuna Zone state that no other development may occur within 200 metres of a “Wind Turbine.” The General Provisions section of the zoning by-law contains height exceptions which specifically identifies “Windmills” as being exempt from height maximums. Based on this review, it is interpreted that a zoning by-law amendment would not be required under the draft zoning by-law.

2.2. Land Acquisition Approvals

Survey Application

The preparation and registration of a legal survey for the Project area will be required. The legal survey process requires preliminary sketch plan approval from the Hamlet of Sanikiluaq and the Government of Nunavut Community and Government Services Director of Planning. Approval from the Hamlet was obtained on March 24, 2022. With Hamlet approval, the Government of Nunavut will be issuing a preliminary plan approval.

With this preliminary sketch plan approval is obtained, a surveyor will perform a legal survey. The provisional plan prepared by the surveyor will require endorsement from the Hamlet prior to the final survey plan being registered at the Land Titles Office. This process can take up to six months.

Land Application

A Land Application is currently being prepared for submission to the Hamlet. The land application process is governed by the Sanikiluaq Land Administration By-law No.63. Once the Hamlet approves the land application, a commissioner's lease will be prepared based on the sketch lot identified on the Preliminary Sketch Plan. Once the final survey plan is registered, the commissioner's lease will be surrendered, and a new municipal lease executed and registered on title.

If the final survey plan is registered at the Land Titles Office and title raised in the name of the Hamlet prior to the commissioner's lease being executed, the commissioner's lease will not be necessary and only a municipal lease will be executed.

2.3. Regional Context

Current and Future Land Use Plans

The Project is subject to the current Sanikiluaq Community Plan No.83 and Sanikiluaq Zoning By-law No.84. A draft community plan and zoning by-law is currently under review and is anticipated to come into effect in summer 2022.

The Project supports the policies of the current and draft community plan to encourage local economic development activities. As well, the community plan supports the adoption of alternative energy supply technology, such as wind power. The draft community plan identifies a future road extension and transmission line to the Project site that will support the development. The Project is also consistent with the provisions of the current and draft zoning by-law. The draft zoning by-law supports the development of wind turbines within the Nuna Zone.

The Nunavut Land Use Plan is currently under development and will apply to the Project site. The draft Nunavut Land Use Plan designates the project site as "Limited Use." The limited use designation applies due to the beluga calving grounds. Wind turbines are not listed as a prohibited activity/development in this area.

2.4. Land Tenure

The land for the Project site and all lands between the built-up community and the Project site are untitled municipal land and administered by the commissioner.

A preliminary sketch plan has been prepared that identifies the proposed boundaries of the land needed for the Project based on the location of the wind turbines. This preliminary sketch plan has been approved by the Government of Nunavut Community and Government Services (acting on behalf of the commissioner) and the Hamlet. A legal survey will be conducted in summer 2022 which will identify the legal boundaries of the Project site. Once the survey process is complete, the title to the lands will be raised and issued to the Hamlet.

3. Consultation Plan and Principles

3.1. Consultation Plan

The consultation plan was based on ongoing and transparent dialogue with the public and stakeholders. Challenges related to securing accommodations, flight cancellations due to weather, and COVID-19 restrictions required a flexible consultation approach. A communications plan is being developed by the Proponent to support future phases of the Project consultation and to facilitate regular information sharing. The communications plan is also intended to include more frequent virtual connections.

Initial consultation began in 2015 to provide information about, gather feedback on, and gain support for a feasibility study and the installation of the meteorological tower to assess wind conditions. Since 2015, consultation has been ongoing and has included diverse community stakeholders as will be discussed below in sections 3.2 and 3.3.

Consultation plans for engaging the community through 2022 included hiring a Community Liaison to engage the community and facilitate the sharing of Inuit Qaujimajatuqangit (IQ) and community knowledge to inform on the Community Benefit Sharing initiative and this project proposal. However, when it became evident hiring into the role would be difficult due to limits to human resources, alternate strategies were considered and included the possibility of establishing a committee to support in-community consultation.

Efforts to establish a committee included contacting known local leaders, based on their current or previous roles within the community, to identify possible committee members and request recommendations for other committee members or consultative options. A committee had not been established by the time in-community engagements occurred in February 2022.

In-community engagements were planned and held between February 21 and February 28, 2022 and included discussions with community members, a radio call-in show, and Facebook interactions as discussed further below in section 3.3.

Consultation Principles

The consultation principles were intended to support transparent, meaningful, complete, and ongoing engagement with community members. Further, the consultation principles were developed to ensure:

- activities aligned with community interests;
- concerns were addressed;
- potential project and cumulative impacts were assessed, and mitigation or enhancement measures were identified;
- a community benefit sharing model was outlined.

Plain language materials were used throughout consultations to enable fulsome community engagement and feedback. Radio, social media, and print materials to support the consultation activities were translated into the Nunavik dialect of Inuktitut. Interpreters were also used to facilitate engagement with Inuit.

The consultation principles also integrated the National Inuit Strategy on Research (NISR) to support the inclusion of IQ and ensure data management and sharing that empowers Sanikiluaq's Inuit. The consultation results will be provided to the community for future use and reference in alignment with the NISR principles of access, ownership, and control over data and information.

Consultation activities were designed to be responsive to community feedback and preferences, integrating cultural protocols if and as requested.

Finally, the consultation principles included respect for community concerns and protocols related to the COVID-19 pandemic.

3.2. Groups Consulted

Consultations occurred with the Hamlet of Sanikiluaq Council and staff members, including the Senior Administrative Officer (SAO), Economic Development Officer, and Community Justice Coordinator. Attempts were made to connect with other departments, but further discussions were not possible during the February community visit. Follow up discussions with other municipal officials are welcomed during future visits.

Early consultations between November 2016 and March 2017 engaged the public through community meetings and teleconferences. During the February 2022 in-community consultations, discussions with individuals or small groups of the public occurred.

Efforts were made to engage youth, Elders, women, and other relevant groups to reflect the community's diversity and support a holistic view of the Project. Representatives from the Hunters and Trappers Association, Arctic Eider Society, Arctic College, Nuiyak School, and health centre were consulted on the Project. The Qikiqtani Inuit Association and the current and former MLA were also engaged. Although the RCMP detachment indicated interest in discussing the Project, the representative advised time and capacity constraints which prevented scheduling a meeting. The Government of Nunavut (GN) was also consulted about archaeological potential in the Project area.

Participants were selected based on recommendations outlined in the NIRB Proponent's Guide (2020), suggestions provided by other participants, and self-identified after learning about the consultation from flyers, social media posts, and radio advertisements. See Table 3.1 for a full list of individuals and groups consulted on the Project.

Table 3.1: Consultation Record

Date	Engagement Type & Location	Participants	Summary	Records
5-Aug-2016	<ul style="list-style-type: none"> Phone Email 	<ul style="list-style-type: none"> SAO 	<ul style="list-style-type: none"> Sought letter of support for funding applications to install MET 	<ul style="list-style-type: none"> Letter of support
26-Nov-2016	<ul style="list-style-type: none"> Council meeting (Hamlet Council Chambers) Public meeting (School Lobby) 	<ul style="list-style-type: none"> Council, SAO Sanikiluaq community members 	<ul style="list-style-type: none"> Introduced Project Reviewed site selection: area south of airport identified as good location by Elders 	<ul style="list-style-type: none"> Pictures of public meeting PowerPoint presentation
9-Dec-2016 to 20-Jan-2017	<ul style="list-style-type: none"> Email (ongoing correspondence from 9-Dec-2016 to 20-Jan-2017) 	<ul style="list-style-type: none"> Hunters and Trappers Association (HTA) 	<ul style="list-style-type: none"> Reviewed site selection: three options south of airport recommended 	<ul style="list-style-type: none"> Email correspondence Maps indicating possible sites identified by HTA
16-Jan-2017	<ul style="list-style-type: none"> Teleconference 	<ul style="list-style-type: none"> SAO 	<ul style="list-style-type: none"> Updated on Project Planned to visit community Discussed MET installation requirements Requested Council approval of MET installation 	<ul style="list-style-type: none"> Meeting agenda Project summary document for Council
23-Mar-2017	<ul style="list-style-type: none"> Council meeting (Hamlet Council Chambers) Public meeting (School Gym) 	<ul style="list-style-type: none"> Council Sanikiluaq community members 	<ul style="list-style-type: none"> Provided background on how MET tower site was selected Described what MET tower will do Outlined next steps Sought Council support for first phase (data gathering) 	<ul style="list-style-type: none"> Council meeting transcript Public meeting transcript Public meeting photos Attendance log of public meeting Presentation
28-Mar-2017	<ul style="list-style-type: none"> Letter 	<ul style="list-style-type: none"> Council 	<ul style="list-style-type: none"> Sent responses to community meeting questions 	<ul style="list-style-type: none"> Letter
May-16-2018	<ul style="list-style-type: none"> Meeting (QIA Headquarters in Iqaluit) 	<ul style="list-style-type: none"> QIA (former) President, P.J. Akeeagok 	<ul style="list-style-type: none"> Sought letter of support for funding application 	<ul style="list-style-type: none"> Letter of support
May-16-2018	<ul style="list-style-type: none"> Site visit (cancelled due to weather) 	<ul style="list-style-type: none"> Council 	<ul style="list-style-type: none"> Updated on first year of wind assessment Sent presentation to SAO in lieu of planned site visit 	<ul style="list-style-type: none"> Presentation
17-May-2018	<ul style="list-style-type: none"> Email 	<ul style="list-style-type: none"> SAO 	<ul style="list-style-type: none"> Sought letter of support for funding application 	<ul style="list-style-type: none"> Letter of support
25-Sep-2018	<ul style="list-style-type: none"> Teleconference 	<ul style="list-style-type: none"> Council Mayor and SAO 	<ul style="list-style-type: none"> Informed Mayor and SAO that federal funding proposal was selected to advance to the next phase of consideration (due diligence phase) 	<ul style="list-style-type: none"> None

Date	Engagement Type & Location	Participants	Summary	Records
1-Sep-2018	<ul style="list-style-type: none"> – Teleconference – Email (ongoing correspondence from 1-Sep-2018 to 30-Sep-2019) 	<ul style="list-style-type: none"> – Council Mayor and SAO 	<ul style="list-style-type: none"> – Updated on project (minimal project activity during this time as federal funding proposal was still being approved) – Notified Council of successful funding proposal Sep. 2019 	<ul style="list-style-type: none"> – Funding approval
1-Oct-2019	<ul style="list-style-type: none"> – Phone – Email (ongoing correspondence from 1-Oct-2019 to 30-Sep-2020) 	<ul style="list-style-type: none"> – Sanikiluaq community members 	<ul style="list-style-type: none"> – Attempted to visit community (cancelled 3 times due to weather) 	<ul style="list-style-type: none"> – Presentation
14-Oct-2020	<ul style="list-style-type: none"> – Meeting (Hamlet Office) 	<ul style="list-style-type: none"> – Council, SAO 	<ul style="list-style-type: none"> – Updated on project – Sought letters of support 	<ul style="list-style-type: none"> – Presentation – Pictures of public meeting – Letter of support for project – Letter of support allowing QBDC/NNC to act on behalf of hamlet in discussions with GN
26-Mar-2021	<ul style="list-style-type: none"> – Email 	<ul style="list-style-type: none"> – Council Mayor and SAO 	<ul style="list-style-type: none"> – Prepared press release to announce funding – Sought quote from Mayor indicating project support 	<ul style="list-style-type: none"> – Press release inclusive of approved quote from Mayor indicating support for project
14-Oct-2021	<ul style="list-style-type: none"> – Meeting (Hamlet Office) 	<ul style="list-style-type: none"> – Council, SAO 	<ul style="list-style-type: none"> – Updated on project – Obtained reaffirmed support for project by Council 	<ul style="list-style-type: none"> – Presentation – Meeting minutes
10-Feb-22	<ul style="list-style-type: none"> – Phone – Email 	<ul style="list-style-type: none"> – Community members (Allan Rumboldt, Silas Novalinga) – Hamlet departments 	<ul style="list-style-type: none"> – Arranged in-community engagement activities – Sought additional community contacts – Secured accommodations – Determined trip logistics 	<ul style="list-style-type: none"> – None
11-Feb-22	<ul style="list-style-type: none"> – Phone – Email 	<ul style="list-style-type: none"> – Community members (Allan Rumboldt, Doug Chaisson) – Hamlet departments – Hunters and Trappers Association (HTA) 	<ul style="list-style-type: none"> – Organized community engagement activities – Confirmed additional contacts – Secured accommodations – Determined trip logistics 	<ul style="list-style-type: none"> – None

Date	Engagement Type & Location	Participants	Summary	Records
15-Feb-22	- Phone	- Sanikiluaq radio station	- Scheduled advertisement for a call-in show during in-community visit (translation provided by radio station)	- On air announcement - Scheduled airtime
15-Feb-22	- Phone	- Sanikiluaq Health Centre (Jill Kelly-Wilson)	- Introduced Project and team - Scheduled visit to the health centre - Discussed health centre capacity	- None
15-Feb-22	- Phone	- Sanikiluaq hamlet departments	- Attempted to call various departments without success (Economic Development, Municipal Liaison Office, Drug and Alcohol Councillor, Iniqtirijiit Justice Coordinator, Canadian Prenatal Nutrition Program)	- None
21-Feb-2022	- Meeting (constituency office)	- MLA for Hudson Bay, Daniel Qavvik	- Discussed project from point of view of individual land user and as MLA for community - Received support for project - Received feedback on additional considerations related to land uses in Project area	- Meeting notes
22-Feb-2022	- Meeting (HTA office)	- Hunters and Trappers Association (HTA)	- Discussed Project and location - Received support for Project - Received recommendation for communications strategy and community liaison	- Meeting notes
23-Feb-2022	- Radio call-in show	- Sanikiluaq community members (with translation by Mick Appaqaq)	- Introduced Project - Invited community members to call in to ask questions and provide comments - Invited community members to connect with Project team with additional questions, concerns, comments	- Meeting notes
23-Feb-2022	- Meeting (Personal office)	- Hunter (Kenny)	- Discussed project and potential impacts related to wildlife, harvesting, availability of country foods, seasonality, and effects of economic development	- Meeting notes

Date	Engagement Type & Location	Participants	Summary	Records
23-Feb-2022	- Meeting (Arctic College, Sanikiluaq)	- Arctic College (Deborah Thomas, Instructor)	<ul style="list-style-type: none"> - Introduced Project introduction - Shared maps with students and teachers - Invited student and faculty questions and comments - Received recommendations for collaboration opportunities between Project team and college including training and facility use/support for virtual consultation - Identified opportunities for educating community on green energy - Received recommendations for potential risk mitigation strategies 	- Meeting notes
24-Feb-2022	- Meeting (hamlet office)	- Community Justice Coordinator (Sarah Emily)	<ul style="list-style-type: none"> - Discussed Project - Sought information on social community context, issues, support services - Received feedback on risks related to housing scarcity, including inability of people to relocate in response to family violence 	- Meeting notes
24-Feb-2022	- Meeting (hamlet office)	- Council, Economic Development Officer	<ul style="list-style-type: none"> - Discussed Project - Responded to questions - Committed to follow up on energy pricing with QEC - Determined next steps to ensure Project success - Received recommendation to hire community liaison for Project success 	- Meeting notes
25-Feb-2022	- Meeting (Project Team rental accommodations)	- Community Member (Allan Rumbolt)	<ul style="list-style-type: none"> - Discussed Project, economic opportunities, collaboration opportunities - Discussed interactions of wildlife around proposed Project site - Discussed socio-economic conditions, including housing issues and energy prices 	- Meeting notes

Date	Engagement Type & Location	Participants	Summary	Records
25-Feb-2022	- Meeting (Nuiyak School)	- Nuiyak School (April Crabb, Principal)	<ul style="list-style-type: none"> - Introduced Project - Answered questions - Discussed collaboration opportunities with school on green energy education and possible Project naming competition - Received support from Principal for the Project and an offer to share Project information among staff and students 	- Meeting notes
25-Feb-2022	- Phone	- Sanikiluaq RCMP detachment	<ul style="list-style-type: none"> - Requested a meeting or call with an RCMP representative to determine possible security issues related to Project; however, limited capacity in detachment prevented discussion 	- None
27-Feb-2022	- Meeting (Project team rental accommodations)	- Community Member (Joel Heath)	<ul style="list-style-type: none"> - Discussed Arctic Eider Society and possible collaboration opportunities - Requested information on cultural and socio-economic conditions - Received offer for crane rental which may be considered further as Project progresses 	- Meeting notes
28-Feb-2022	- Meeting (hamlet office)	- Economic Development Officer (Michael Rowan)	<ul style="list-style-type: none"> - Answered questions about Project financing and timelines - Received information on availability housing, construction workers, background on current economic development activities in Sanikiluaq - Received recommendation for possible collaboration with existing construction companies - Received recommendation for developing worker housing that could benefit community in long-term 	- Meeting notes
28-Feb-2022	- Meeting (Sanikiluaq Health Centre)	- Sanikiluaq Health Centre (Jill Kelly-Wilson, Head Nurse)	<ul style="list-style-type: none"> - Toured health centre - Discussed available services - Determined additional health care practitioners may be required during construction to meet capacity requirements 	- Meeting notes

Date	Engagement Type & Location	Participants	Summary	Records
28-Feb-2022	- Meeting (hamlet office)	- Income Support Coordinator (Martha Qittusuk)	<ul style="list-style-type: none"> - Introduced Project and potential opportunities/impacts - Discussed current employment trends in Sanikiluaq and possible Project benefits to those seeking employment - Discussed lack of housing availability - Identified opportunity for sharing future employment opportunities with community members currently on income support but looking for work 	- Meeting notes
21-Feb-2022 to 28-Feb-2022	<ul style="list-style-type: none"> - Facebook announcement - Facebook Group 	- Community members	<ul style="list-style-type: none"> - Published announcement about consultation activities - Received comments about lack of clarity related to Project impacts, concerns about noise, limited housing, - Received recommendation for more translated material to enable community feedback 	- Facebook posts
24-March 2022	- Council Meeting (Hamlet office)	- Hamlet Council, SAO	- Engaged on project ownership/community enhancement fund	<ul style="list-style-type: none"> - Presentation - Meeting notes
24-March 2022	- Meeting (HTA office)	- HTA members	- Engaged on project ownership/community enhancement fund	<ul style="list-style-type: none"> - Presentation - Meeting notes

3.3. Consultation Activities

Initial consultations started in August 2016 with phone calls and emails and resulted in a letter of support from the Hamlet of Sanikiluaq for a funding application to install a meteorological evaluation tower (MET) to verify wind characteristics at proposed turbine sites.

In November 2016, a Council meeting and a public community meeting were held to introduce the Project and potential Project sites. Initial potential sites were proposed based on a report commissioned by Qulliq Energy Corporation (QEC) which assessed the potential for wind energy in Nunavut communities. During the public meeting, community members identified the QEC Report recommended areas were not preferred and Elders identified an area south of the airport as a good location for turbines. Between December 2016 and January 2017, the Sanikiluaq Hunters and Trappers Association was consulted which led to a recommendation of three specific sites south of the airport. Two of the three sites were within the Airport Zoning Regulations boundary and therefore deemed prohibitive.

The Project Team selected an optimal site based on the input from the community, regulatory restrictions, and topographic considerations.

A teleconference with the Senior Administrative Officer (SAO) to provide an update on the Project, plan an in-community visit, and outline the MET installation requirements was held in January 2017. A summary was prepared for the SAO to provide to Council along with a request for Council approval of the MET installation.

In-person meetings with Council and the public to present and discuss how the MET site was selected, the purpose of the MET, and the Project's next steps were held on March 23, 2017. Council provided support for this first phase of the Project which focused on data gathering. On March 28, 2017, a letter was sent to the SAO summarizing the discussion and responding to questions received at the public meeting.

In May 2018, an in-person meeting with the Qikiqtani Inuit Association (QIA) president was held to seek a letter of support for a federal funding application for the Project which was provided. Email correspondence in May 2018 with the SAO also resulted in a letter of support for a funding application. A community site visit had been planned in May 2018 but was cancelled due to weather and the supporting presentation was sent by email to the SAO.

A teleconference was held in September 2018 to advise the mayor and SAO of Sanikiluaq that the initial federal funding proposal was successful, and the Project had been selected to advance to the next phase of review.

Ongoing communications occurred by teleconference and email between September 2018 and September 2019 while the Project was being considered for funding. Notice of approval for funding was provided to Qikiqtaaluk Business Development Corporation (QBDC) in September 2019.

Between September 2019 and September 2020, three trips to deliver a presentation on the Project status were planned and cancelled due to weather.

In October 2020, a presentation was delivered at a Council meeting where a signed letter of support for the Project was received, as well as a signed letter allowing QBDC/Nunavut Nukkiqsautiit Corporation (NNC) to act on behalf of the Hamlet of Sanikiluaq in discussions with the Government of Nunavut (GN).

In the spring of 2021, an approved quote by the mayor was provided for use in a press release and formal announcement in support of the Project.

On October 14, 2021, the Project team met with Council to provide an update on the progress of the Project, including an overview of the completed, ongoing, and upcoming tasks from the time of MET installation to first power. Council reaffirmed support for the Project.

Between February 21 and 28, 2022, consultant Project team members were in Sanikiluaq to conduct community consultations to gather information for this project proposal on potential impacts and mitigation or enhancement measures. Several interviews were planned in advance of arriving, and community members were also invited to phone or email the Project team to schedule interviews and discussions. Due to COVID-19 concerns in the community, consultations occurred as one-on-one interviews or small group discussions using appropriate personal protective equipment. Discussions occurred in a private residence or in the offices of the community contacts. A 2-hour radio call-in show was also hosted, and Facebook was used to reach additional community members and people interested in commenting on the Project. Engagements provided an overview of the Project and answered questions while collecting IQ and community knowledge to support identification of valued components and further inform the Project.

On March 24, 2022, the Project team was in Sanikiluaq under a separate, but related, project scope related to infrastructure ownership structures. The Project team met with the Hamlet Council and Hamlet administrators as well as the HTA to discuss the community benefit sharing structure of the Project and to provide an update on the Project including a follow-up on the major community concerns heard during the February consultations. Council and HTA members identified that they appreciated the follow up on the community concerns.

3.4. Key Issues and Concerns

The following key issues or concerns were documented and addressed by the Project team and are further summarized below and included in Table 3.2.

- alternative energy security;
- effects on land and resource use sites;
- effects on wildlife;
- effects of the environment on the Project;
- regulatory process and community engagement;
- operations, maintenance, costs and risks;
- employment and training opportunities;
- safety and site security;
- noise impacts;
- housing and temporary accommodation impacts.

Potential effects related to these key issues and concerns are evaluated in the below socio-economic impact assessment and in the biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions.

Table 3.2: Issues Table

Issue / concern type	Issue / concern summary	Proponent response	Status
Alternative energy security	Concerns about energy pricing and differences between wind and diesel	The Proponent communicated that pricing will be up to provider, QEC The Proponent will provide ongoing education to provide clarity about energy prices and fluctuations in diesel vs. wind costs	Ongoing
Alternative energy security	Interest in solar and why this alternative has not been considered	The Proponent communicated that solar could be possible but there are additional considerations including battery storage and space, and winter versus summer production capabilities The Proponent considered solar during the project conceptualization phase but it was ruled out as the goal was to demonstrate a high renewable energy penetration project which is best achieved in Sanikiluaq through wind	Resolved
Alternative energy security	Concerns about lack of information on green energy and its benefits; need for more education	The Proponent communicated interest in working with schools and students to build awareness; suggested student competition to name project	Ongoing
Alternative energy security	Questions about why Sanikiluaq was chosen for this project	The Proponent communicated that it was due to the region's high winds and community interest During the project conceptualization phase, Sanikiluaq was selected as the community had reached out to QBDC with interest in renewable energy and Sanikiluaq was within the top ten Nunavut communities for having the best conditions for a wind power project in the 2016 QEC commissioned report, <i>Potential for Wind Energy in Nunavut Communities</i>	Resolved
Alternative energy security	Questions about how power outages will be affected by switching to wind energy	The Proponent communicated that power will likely be more reliable as there will be two different systems and battery storage	Resolved
Effects of the environment on the Project	Questions about how well wind turbines work in the south compared to the north	The Proponent communicated that they work well in the south and the north, with an average lifespan of 30 years	Resolved
Effects of the environment on the Project	Concerns about minimum wind requirements	The Proponent communicated that studies have demonstrated wind to be sufficient, meets minimum requirement; battery storage system provides energy during periods of low wind	Resolved
Effects of the environment on the Project	Concerns about extreme weather events impacting turbines	The Proponent communicated that turbines would be sourced with safety features that prevent blades from spinning in high winds, and may include blade defrosting	Resolved

Issue / concern type	Issue / concern summary	Proponent response	Status
Effects of the environment on the Project	Interest in understanding why additional data was collected when airport data exists	The Proponent communicated that this was to gather additional data at the same height as turbines would operate and closer to the proposed location	Resolved
Effects on land and resource use sites	Potential land uses in the area may include goose egg harvesting, fishing, berry gathering	The Proponent determined that consultations found limited land use for these purposes in the proposed Project location and that an improved access road would benefit berry pickers and hunters	Resolved
Effects on land and resource use sites	Questions about whether compensation will be provided to harvesters if there is an extensive loss of wildlife in the region	Wildlife disturbance and associated disruptions to harvesting activities are assessed in section 6 below and in the biophysical impact assessment; impacts are expected to be limited to the Project area	Resolved
Effects on land and resource use sites	Concern about road integrity and possible impacts to water and fish	Assessed in section 6 below and in the biophysical impact assessment	Resolved
Effects on wildlife	Concerns about potential impacts to birds, including geese, raptors, snowy owls	Assessed in the biophysical impact assessment	Resolved
Effects on wildlife	Concerns about fox dens in the area	Assessed in in the biophysical impact assessment	Resolved
Employment and training opportunities	Interest in jobs and skills training	The Proponent indicated the Project includes a training plan to train local residents as operators and hiring locally during construction to the greatest extent possible and that a possible collaboration with the Arctic College will be explored	Resolved
Employment and training opportunities	Questions about how many new jobs would be created	The Proponent communicated that the final number will depend on the types of turbines built, as well as the available number of trained workers in the community, and would provide final numbers once available	Ongoing
Employment and training opportunities	Concerns about lack of employment in the community and its impact on youth	The Proponent communicated that there may be training opportunities for youth who are interested in working for the Project and would provide details once they are available	Ongoing
Housing and temporary accommodation impacts	Concerns about housing availability for workers and related community stresses on already limited resource, including lack of safe spaces for domestic abuse victims	<p>The Proponent communicated that options for accommodations would be explored, including the hotel</p> <p>The Proponent will explore options including a temporary lodging camp for the workers if there is no temporary accommodations available in the community</p>	Ongoing

Issue / concern type	Issue / concern summary	Proponent response	Status
Noise impacts	Concerns about noise from turbines impacting humans, fish, birds, wildlife	Assessed in the biophysical impact assessment; impacts are expected to be limited to the Project area and noise will be imperceptible at regional level	Resolved
Operations, Maintenance, Costs and Risks	Concerns about money leaving the community	The Proponent communicated that the goal was to keep money in the community The Community Enhancement Fund will allow revenue from the Project to be reinvested in the community as determined by the community	Resolved
Operations, Maintenance, Costs and Risks	Questions about the possibility of windmills being sized to fit cabins	The Proponent communicated that this is possible but there are more risks to these, including that they are more likely to break	Resolved
Operations, maintenance, costs and risks	Concerns about lack of resources in community to operate manage and maintain the wind turbines	The Proponent communicated that external workers and/or training local workers may be required to fill gaps in operations/maintenance capacity and decisions would be made in collaboration with the community	Ongoing
Operations, maintenance, costs and risks	Concerns about project appearance and possible requirement for large number of overhead wires	The Proponent communicated that because of distance from community, the visual impact of the Project will remain minor	Resolved
Operations, maintenance, costs and risks	Concerns about limited construction resources in community	The Proponent communicated that necessary construction materials and resources, not currently available will be brought into the community	Resolved
Operations, maintenance, costs and risks	Questions about the costs of maintenance	The Proponent communicated that turbines have not yet been sourced and that maintenance costs would depend on the model Through the Community Benefits sharing model, the associated costs of maintaining and operating the turbines will not be a community responsibility	Resolved
Operations, maintenance, costs and risks	Questions about the types of batteries used for the Project and whether molten batteries would be best	The Proponent communicated that batteries have not yet been sourced	Ongoing
Regulatory process and community engagement	Concerns about signing into meetings and how information will be used	The Proponent communicated that to fulfill project screening requirements consultation records are shared with NPC/NIRB including meeting minutes and participant names	Resolved
Regulatory process and community engagement	Lack of awareness of NIRB and its role	The Proponent shared more information on NIRB following the meeting	Resolved

Issue / concern type	Issue / concern summary	Proponent response	Status
Regulatory process and community engagement	Interest in understanding project authorizations	The Proponent communicated that the Project must meet the regulatory authority requirements of the federal government	Resolved
Regulatory process and community engagement	Lack of awareness of SDC and its role	The Proponent communicated that it was reluctant to speak on behalf of SDC but indicated intention to work with the community to make decisions and build partnerships SDC has since dissolved	Resolved
Regulatory process and community engagement	Concerns about lack of consultation; interest in ongoing engagement on the Project	The Proponent is developing a communications plan that will include more frequent virtual connections and be shared with the community	Ongoing
Regulatory process and community engagement	Recommendation for translated, easily understood documents to enable community to better identify risks and opportunities	The Proponent is developing a communications plan that will include more frequent virtual connections and be shared with the community	Ongoing
Regulatory process and community engagement	Recommendation to use various communication methods to mitigate internet connection issues	The Proponent is developing a communications plan that will include more frequent virtual connections and be shared with the community	Ongoing
Regulatory process and community engagement	Interest in understanding Project benefits	The Proponent is developing a communications plan that will include more frequent virtual connections and be shared with the community	Ongoing
Regulatory process and community engagement	Recommendation for community liaison to ensure Project success	Proponent is looking into opportunities to support hiring a community liaison	Ongoing
Safety and site security	Safety concerns - children, wildlife near equipment	The Proponent communicated that it will be to exploring possible options, including educating community on clean energy	Ongoing
Safety and site security	Security concerns - vandalism	The Proponent communicated that it will be to exploring possible options, including, educating community on clean energy The Proponent will also explore the potential for security cameras to be installed on the Project site	Ongoing
Safety and site security	Emergency response procedures need to be established	The Proponent communicated that it will have a health and safety and an emergency response plan	Resolved
Safety and site security	Concerns about possible capacity issues in health centre created by additional workers	The Proponent will ensure all WSCC requirements are met	Resolved
Safety and site security	Concerns about potential diesel/fuel spills or leaks	The Proponent communicated that potential spills will be continuously monitored throughout Project construction and operation	Resolved

Alternative Energy Security

The Hamlet of Sanikiluaq Council has been supportive of the Project. Council recognized Sanikiluaq is a smaller community within the territory of Nunavut but wanted to be among the first to establish a community-level wind project to serve as a model for other communities in the region. It was also noted that the Project was expected to help reduce dependence on diesel and the associated infrastructure. Advancing clean energy was noted in a letter from the SAO in May 2018 to be in alignment the municipal mandate and environmental values. Council was also keen to learn more about the ownership and revenue sharing opportunities associated with the Project with the SAO noting interest in fostering self-sufficiency and economic development opportunities. Community members were curious to know why Sanikiluaq had been chosen for the Project which the Proponent advised was related to community interest.

The 2016 QEC commissioned *Potential for Wind Energy in Nunavut Communities* report identified that Sanikiluaq was within in the top ten Nunavut communities for having the best conditions for a wind power project. With this information and as the community had expressed interest to Qikiqtaaluk Business Development Corporation (QBDC) in alternative energy, Sanikiluaq was selected for the proposed Project.

Community members questioned why solar has not been considered as a clean energy source and recommended additional education and information sharing on the benefits of green energy. The Proponent noted that solar could be possible but battery storage, battery space, and winter versus summer solar production would need to be considered. The Proponent also indicated willingness to support ongoing community education on green energy and to collaborate with the schools and college to facilitate information sharing.

Solar energy was considered at project conception and was subsequently ruled out as the goal was to demonstrate high diesel displacement through an alternative energy system. Wind was the more viable and economical option for achieving this goal.

Community members voiced concerns about the lack of information on the pricing of wind energy for their community and families. Council also requested additional information on pricing. The Proponent indicated that the pricing will be up to the energy provider to determine and will follow up with QEC to see if additional information is available at this time. The Proponent also noted a need for ongoing communications related to pricing to clarify whether overall energy cost increases in future are related to wind energy or diesel energy.

The Proponent will continue to provide communication on how the rates residents see on their electricity bills are set by QEC and will not be affected by the wind project. It will be communicated that the Project will provide energy to QEC at a cost less than QEC's current cost of diesel generation and therefore any increase in electricity rates will not be the result of the Project.

Concerns about possible power outages were also raised. The Proponent responded that power would likely be more reliable based on the second source of power and battery storage of wind energy.

Effects of the Environment on the Project

There were several questions and concerns related to the potential impact of the environment on the Project. These included requests for more information on the minimum wind requirements and the potential impacts of extreme weather on the turbines. The Proponent explained that studies had demonstrated wind to be sufficient and noted safety features, including preventing the blades from spinning and possible

defrosting, to respond to extreme weather. The Proponent noted that different turbine options were being explored. The Proponent further indicated in response to community interest that turbines work well both in the north and south and have an average lifecycle of 30 years.

Community members were also interested to know why information was being collected again given existing data collected at the airport. The Proponent explained that this was to gather additional data at the same height as turbines would operate and closer to the proposed location.

Effects on Land and Resource Use Sites

Clarification on the Project location was requested by Council and the Proponent advised that it would be south of the airport and east of the MET. The MET location was established in consultation with the community and local HTA. Council was supportive of the proposed turbine locations based on the locations being outside prime hunting grounds which was further verified during the in-community work in February 2022. It was agreed that an upgraded access road in the area would benefit berry pickers and hunters to provide improved access onto the surrounding lands and waters. Questions were however raised about whether the Project site impacts egg harvesting, fishing, and berry gathering, and whether compensation would be provided for loss of harvesting grounds. The Proponent advised that any impacts would be limited to the Project site.

Several concerns were raised about the potential impact of the access road on surrounding water sources and fish habitats. These effects are evaluated in the biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions.

Effects on Wildlife

In 2017, community engagement identified concerns about migratory birds and in 2022 additional concerns were raised about potential impacts to geese, snowy owls, and raptors. Concerns related to fox dens were also identified. These impacts are evaluated in the biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions.

Employment and Training Opportunities

The HTA and community members were interested in job opportunities and training and skills development related to the Project. The Proponent indicated the Project includes a training plan to train local residents as operators and hiring locally during construction. Community members also requested the number of possible job opportunities associated with the Project and noted concerns about the lack of employment in the community and its impact on youth. The Proponent explained that the final number will depend on the types of turbines built, as well as the available number of trained workers in Sanikiluaq, and would provide final numbers to residents once they are confirmed.

Housing and Temporary Accommodation Impacts

A lack of housing availability was noted as being an issue requiring early coordination with the community. Comments also included the stress of having additional workers and researchers in the community on the already limited housing supply. Domestic violence was a noted stressor related to the limited availability of housing and victims being unable to find alternate accommodations. Recommendations from community members included building worker housing that could have longer-term benefits for the community. The Proponent advised that options were still being explored.

Prior to construction, the Project team will assess the availability of temporary accommodations in the community. If the available accommodations cannot accommodate the non-local Project workers, the Proponent will explore the potential of a temporary lodging camp for the workers.

Noise Impacts

Noise from the turbines and its impact on both humans and wildlife was noted as a concern. Although a supplier has not been confirmed, turbine noise levels will be a factor in the selection criteria for turbines. These effects are evaluated in the biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions.

Operation, Maintenance, Costs and Risks

Concerns related to turbine operation, including whether the community had capacity to maintain and operate the turbines, as well as the associated costs, were identified. The Proponent noted that turbines are still being sourced and maintenance costs will depend on the model. The Proponent similarly indicated that batteries had not yet been sourced in response to questions about the types and whether molten batteries could be used.

Operation and maintenance and the associated costs are a responsibility of the Proponent and not a community responsibility. The goal of the Project is to employ a local operator who will be provided training in operation and maintenance of the turbines.

Limited construction resources were also raised as a possible issue. The Proponent indicated necessary construction materials and resources, not currently available will be brought into community

Money leaving the community, rather than being reinvested, was also a concern. The Proponent noted that the goal was to keep money in the community and is the impetus behind the Community Benefits Sharing initiative.

The Community Enhancement Fund will allow revenue from the Project to be reinvested in the community as desired by the community committee overseeing the Fund.

Questions were raised about whether smaller turbines could be installed on cabins and the Proponent indicated there were additional risks associated with these models, including that they are more likely to break. There was also some concern about the Project appearance including related to wire distribution. The Proponent indicated that, because of distance from community, the visual impact of the Project will remain low.

Regulatory Process and Community Engagement

Community members had several questions and concerns related to NIRB, Sanikiluaq Development Corporation (SDC), and authorizing authorities, including a general lack of awareness about these organizations and their roles on the Project and in the community. The Proponent provided additional information on NIRB's role in the project. SDC is no longer in operation.

Community members indicated interest in ongoing information sharing and engagement on the Project and noted the need to use a variety of communication methods given limited internet access. In response, the Proponent used a variety of methods in the week-long February 2022 in-community visit to engage community members.

During this visit, the community expressed general support for the Project and anticipated benefits for the community.

The Hunters and Trappers Association was supportive and recommended a community liaison to help ensure the success of the Project. Council similarly noted the need for a community liaison. However, the HTA alluded to deficiencies in communications. The HTA indicated that the community was not aware of the job posting for a community liaison for the Project that had been advertised in the community prior to the February 2022 in-community visit and recommended additional communication. A concern raised by both the HTA and the municipal council was a lack of community awareness and engagement related to the Project with council members indicating hesitancy to discuss the project until they had sufficient knowledge of the details from the Proponent.

As in 2017, more information on the final impacts and benefits of the Project were sought and are assessed in this document. The results of the assessment will be shared with the community at a planned future visit in the spring of 2022. It was also noted by community members that translation and an increase in information that could be easily understood would assist in the identification of potential impacts and benefits.

The Proponent is developing a communications plan to support future phases of the Project consultation and to facilitate regular information sharing and more frequent virtual engagement to respond to these comments.

Safety and Site Security

The installation of fencing around the turbines was requested by the HTA and community members for the safety of children and wildlife, and to prevent vandalism by bored youth throwing rocks or shooting arrows as target practice. However, it was also noted by community members that fencing had been cut in the past by those trespassing on other project sites. The Proponent will be implementing safety measures and promoting education to youth to address these concerns. Community members suggested a possible option could include adding a cell receiver to the towers as internet access is highly valued and may deter vandalism; however, the Proponent is not responsible for cellular infrastructure.

Effective emergency response procedures and safety measures were recommended. Concerns were also raised about whether the health centre capacity would be sufficient to support the Project. This effect is evaluated in the below socio-economic impact assessment.

Finally, there were some concerns about the potential for diesel or fuel spills and leaks which are evaluated in the below socio-economic impact assessment and in the biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions.

3.5. Planned Future Consultation Activities

During the in-community work in February 2022, several individuals indicated possible interest in a Community Liaison role with the Project. The Proponent will be exploring funding opportunities to support this role in future engagements.

The Arctic College also noted interest in possible collaboration on the Project through student internship opportunities that could facilitate further community engagement. The Arctic College also offered space and support for future videoconferencing consultation activities.

Further in-community engagements to review the results of the impact assessment for the Project are planned in the spring of 2022. A communications plan is in development and will include increased virtual consultations additional radio call-in shows, Facebook engagement, and the creation of additional translated plain language material. Transparent and regular consultation is intended to continue throughout Project planning activities through to implementation.

4. Socio-Economic Environment Conditions

This section describes the socio-economic baseline conditions in Sanikiluaq. This section is informed by valued socio-economic components (VSECs) recommended by Nunavut Impact Review Board (NIRB), as well as the spatial and temporal boundaries under which the VSECs were considered.

4.1. Selection of Valued Components

VSECs refer to the components of the socio-economic environment that are of particular interest to the Sanikiluaq residents and are guided by the NIRB. While the baseline follows criteria based on the NIRB recommended VSECs, final findings from the baseline, as well as from public and stakeholder input, have caused slight modifications to the final VSECs list, which is available below in Table 4.1. Final VSECs were determined through baseline research, consultation and engagement with Sanikiluaq residents, landowners, and stakeholders, publications provided by regulatory authorities including the NIRB, and the professional judgment of the assessment team. Issues noted during consultation and engagement were essential in determining whether VSECs may potentially be impacted by the Project.

Table 4.1 lists and summarises each of the VSECs and indicators that could potentially be impacted by the Project. Each indicator is described further in the sections that follow. A list of potential Project effects on each VSEC and indicator can be found in Table 4.1. Note that visual impact was not included in the VSEC list, although it was mentioned during consultation. This decision was made due to the low number of inquiries about the visual impact of the Project, as well as the distance of the turbines eliminating almost all visual impact to the Hamlet.

Table 4.1: Valued Socio-Economic Components and Indicators

VSEC	Indicator	Description
Economic Development and Opportunities	Fisheries	Ability to harvest marine and freshwater fish and benthic animals for economic gains, without the risk of contamination or scarcity.
	Energy Affordability	Ability for individuals to afford energy on a long-term basis in order to meet personal and family needs.
	Infrastructure Development	Ability to develop community infrastructure to meet individual needs for services that are vital to community well-being.
	Mining and Aggregate Resources	Ensuring that any mining activity in the Belcher Islands continues to run safely, without any impacts from the Wind Energy Project
Business, Employment and Income	Employment	Access to employment opportunities, employment benefits, and cultural sensitivity in workplaces.
	Income Levels	Access to employment that provides income for individuals and families to meet their basic needs and further well-being.
	Business Contracts and Potential for New Business Development	Support, development, and opportunities for local businesses.
Education and Training	Availability of Training Programs	Access to education (primary, secondary, and post-secondary), as well as capacity training and training opportunities for higher level employment positions.

VSEC	Indicator	Description
Traditional Activities	Hunting and Egg Gathering	Ability to hunt and gather traditional wildlife species and their eggs, without the risk of contamination or scarcity.
	Fishing	Ability to harvest traditional marine and freshwater fish and benthic animals, without the risk of contamination or scarcity.
	Plants, berries and Medicines	Ability to harvest traditional plants and medicines from the land, without the risk of contamination or scarcity.
	Minerals	Ability to harvest and access traditional rocks and minerals.
Cultural, Archeological and Paleontological Resources	Artifacts and Culturally Significant Sites	Ensure that archeological and paleontological resources and culturally significant sites are protected against contamination or destruction.
Individual and Community Wellness	Health Services	Ability to access necessary health services to maintain and increase physical mental, and spiritual health.
	Health and Well-being	Ability to live in a safe environment, protection against contaminants, noise, and air pollution, and without chronic illness.
		Ability to maintain a work-life balance in environment free from discrimination.
		Ability to perform spiritual practices on the land as a part of community health and well-being.
	Gender Equity	Balance between genders in the community, workplaces, and colleague relationships.
	Language	Respect and inclusion of Inuktitut and English languages. Access to language training classes and translation of documents.
Community Infrastructure and Public Services	Drinking Water	Availability and community confidence in continuous access to clean drinking water.
	Cultural Services	Ability to maintain cultural services that support cultural continuity, including traditional language classes, traditional skills workshops, and cultural ceremonies.
	Road Access	Ability to maintain access to road infrastructure.
	Access to energy	Ability to maintain continuous and adequate access to energy resources.
	Housing and Temporary Accommodations	Sustainable family life, balanced parental influence, and non-abusive relationships between couples.
	Household Affordability	Housing available of adequate quality for both community members and workers.
	Safety, Crime and Security	Ability to feel safe within one's community; lack of vandalism of private and public property.

Spatial and Temporal Boundaries

The socio-economic effects assessment considers spatial and temporal boundaries defined by their socio-economic context and resulting potential impacts. These boundaries vary depending on each VSEC, and identification of each boundary is determined by considering the following:

- The construction and operations phases of the proposed physical works and activities.
- The natural variation of a population or socio-economic indicator.
- The time required for an effect to become evident.
- The time required for a population or socio-economic indicator to recover from an effect and return to a pre-disturbance or baseline condition.
- The area directly affected by proposed physical works and activities.
- The area in which a population or socio-economic indicator functions and within which a Project effect may be experienced.

Based on this criteria, the following spatial boundaries have been determined:

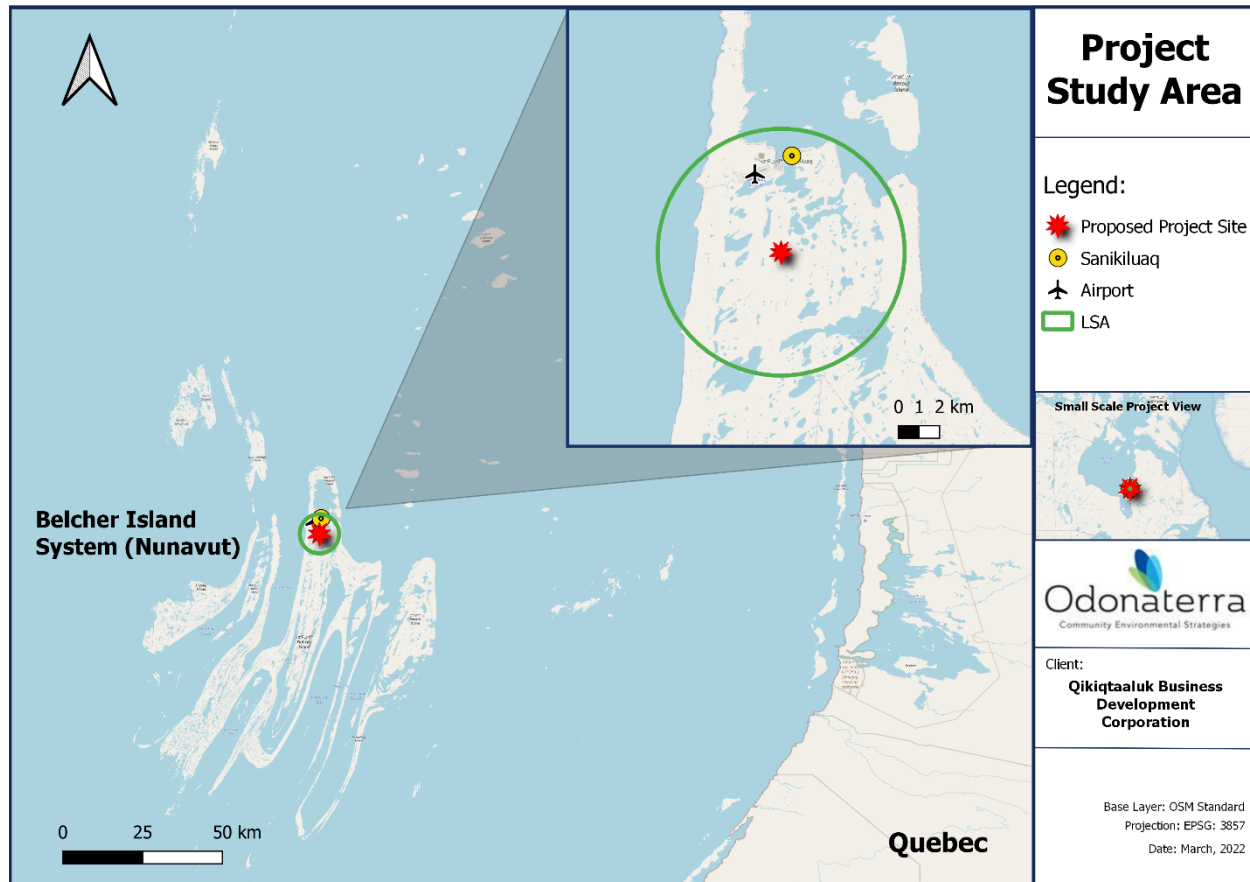
- **Project footprint:** The Project footprint includes the area within 5 meters of the turbine site. This area will be most likely affected by direct construction activities.
- **Local study area (LSA):** The LSA refers to the study area within a 6 km radius of the Project. This includes Sanikiluaq and infrastructure/services available in the hamlet. The LSA is the most likely spatial boundary for socio-economic effects as this area is where most socio-economic activities occur.
- **Regional study area (RSA):** The RSA refers to the greater Belcher Island system. The RSA is less likely to be affected but may experience indirect effects and/or cumulative effects, as later described in the report. While the greater Qikiqtani Region was considered, no socio-economic effects were determined for this boundary. Therefore, for the context of this study, the RSA remains the Belcher Island system.

Additionally, the following temporal boundaries have been identified, based on various Project activities:

- **Construction period:** The construction period is anticipated to last approximately two years and include site clearing and construction of the wind turbines.
- **Operation and maintenance:** The operation is anticipated to last 30 years, which is the average turbine lifetime.
- **Decommissioning/refurbishment:** Decommissioning and refurbishment may vary depending on whether decisions include taking down the wind turbines or refurbishing them to continue providing energy. This phase will be further determined closer to the end of the Project life.

The following map shows the Project location, including the Project footprint, LSA and RSA (Belcher Island System).

Map 4.1: Proposed Study Areas of the Sanikiluaq Wind Energy Project



(Odonaterra Inc., 2022)

The Project is expected to begin in June 2023 with the construction of an access road to the site location. The construction of the wind turbines is expected to begin in October 2023 and continue until June 2024. Operations of the turbines are expected to continue throughout the 30-year life expectancy. In the event that the turbines become inoperable, they will either be fixed, replaced, or decommissioned. If it is decided that the turbines will be decommissioned or replaced, the socio-economic effects are expected to be the same as during the construction phase.

Methods of Data Collection

Data for this baseline report was collected through secondary research from online data sources, and primary research conducted to verify and strengthen secondary research findings through in-community consultation and engagement. Most of the data collected from online sources came from Statistics Canada¹ census reports and data from the Nunavut Bureau of Statistics. Other online data was derived from the

¹ For statistics Canada Data: "To ensure confidentiality, the values, including totals, are randomly rounded either up or down to a multiple of '5' or '10.' To understand these data, you must be aware that each individual value is rounded. As a result, when these data are summed or grouped, the total value may not match the individual values since totals and sub-totals are independently rounded. Similarly, percentages, which are calculated on rounded data, may not necessarily add up to 100%." See: <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/about-apropos/about-apropos.cfm?Lang=E>.

Hamlet of Sanikiluaq's website, Sanikiluaq's school websites, local news sources, and the World Wildlife Fund. Beyond online sources, data was collected from background reports generated for community and through consultation. Background reports that were used for this analysis include the Sanikiluaq Community Plan (2014), Infrastructure for Sustainable Sanikiluaq report (2011), Sanikiluaq Community Economic Development Plan Update, 2019-2023 (2019), Wood's Environmental Impact Assessment Report (2021), and Voices from the Bay: Traditional Ecological Knowledge of Inuit and Cree in the Hudson Bay Bioregion (1997). Data gathered from community consultation and engagement was collected through in person interviews, video conferencing, telephone communications, and email communications. The public and stakeholders consulted included the Hunters and Trappers Association (HTA), the Hamlet of Sanikiluaq Council, students and teachers from Sanikiluaq's public schools and Arctic College Learning Centre, a nurse employed at the Sanikiluaq Health Centre, social service representatives, and economically active individuals in the community.

Baseline Results

The following section shows the baseline results collected to help determine the socio-economic background of Sanikiluaq residents and help to further inform potential impacts resulting from the Project. The following sections are based on the recommended Valued Socio-Economic Components from NIRB. These categories may be changed slightly in the Impact Assessment section, depending on final findings and connections to the community context.

Population, Age, and Gender Characteristics

Sanikiluaq's population is increasing. Between 2006 and 2016, the population increased by 18.8% from 745 to 885 individuals. The population distribution between men and women is mostly even, with 50.6% identifying as male and 49.4% identifying as female as of 2016. In 2006, there was a larger gap between the distribution of men and women, with 51.7% identifying as male (Statistics Canada, 2007, 2017a).

Most of the residents in Sanikiluaq are Indigenous (98.35%), of which, 94.4% are Inuit, 2.8% are First Nations, and 1.1% are Métis.

Sanikiluaq has a young population and nearly 70% of individuals were younger than 35 in 2016. The median age in Sanikiluaq increased by 1.9 years from 20.4 in 2006 to 22.3 in 2016. Table 4.2 shows population demographics in 2006 and 2016 by age group, sex, and Indigeneity (Statistics Canada, 2007, 2017a).

Table 4.2: Sanikiluaq Population Demographics

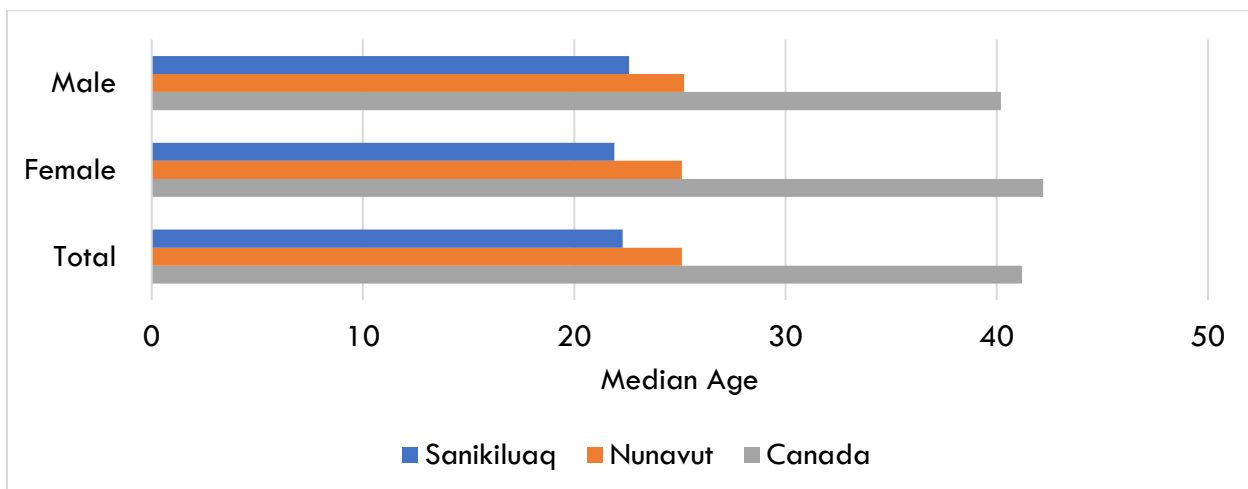
Population Demographics	2016			2006		
	Total (N)	Male (N)	Female (N)	Total (N)	Male (N)	Female (N)
Total Number (N) of persons	885	445	435	745	385	360
Indigenous	870	440	435	710	365	345
Inuit	835	425	415	N/A	N/A	N/A
First Nations	25	15	20	N/A	N/A	N/A
Métis	10	0	0	N/A	N/A	N/A
Age 0-14	320	150	170	295	145	140
Age 15-24	165	95	75	135	75	55
Age 25-34	130	75	60	95	40	55
Age 35-44	95	40	55	105	55	45

Population Demographics	2016			2006		
	Total (N)	Male (N)	Female (N)	Total (N)	Male (N)	Female (N)
Age 45-54	95	50	40	50	25	30
Age 55-64	45	25	25	45	30	20
Age 65 and over	35	20	20	20	15	10
Median Age	22.3	22.6	21.9	20.4	20.4	20.4

(Statistics Canada, 2007, 2017a)

Both Sanikiluaq and Nunavut had very low median ages compared to the national average in 2016. In 2016, Canada's median age was 41.2 years, whereas Nunavut's median age was 25.1 years, and Sanikiluaq's median age was 22.3 years. The median age of women, 42.2 years, was higher than men, 40.2 years, in Canada. In Sanikiluaq however, the reverse was true as the median age was 21.9 years for women and 22.6 years for men. Figure 4.1 compares the differences in median age between the sexes and regions.

Figure 4.1: Canada, Nunavut, and Sanikiluaq 2016 Median Age



(Statistics Canada, 2017, 2017a)

Currently, no programs are known to be available for gender advocacy. However, the Arctic Eider Society is in the process of developing a research centre which will be providing opportunities for women to pursue and teach traditional practices such as preparation of hides, clothing, and bedding from Eider down, etc. (J. Heath, personal communication, February 28, 2022).

Household Characteristics

As of 2016, there were 220 dwellings in Sanikiluaq. The most common type of household in Sanikiluaq is a census family. A census family is defined by Statistics Canada as “a married couple and the children, if any, of either and/or both spouses; a couple living common law and the children, if any, of either and/or both partners; or a parent of any marital status in a one-parent family with at least one child living in the same dwelling and that child or those children” (2021). It is uncommon for community members to live alone as there are only 30 reported one person households in Sanikiluaq. The majority of census families in the municipality rent; 185 dwellings are rented out of 220 total households. Of the 220 dwellings, 85 have been deemed as being unsuitable meaning that there are not enough bedrooms to accommodate the number of people living in the home (Statistics Canada, 2007, 2017a). See Table 4.3 for more information.

Table 4.3: Sanikiluaq 2006 versus 2016 Household Characteristics

Household and Dwelling Characteristics	2016	2006
Household type		
Total Number (N) of private households	220	160
One census-family households	145	N/A
Without children in a census-family	15	10
With children in a census-family	125	65
Multi-family census households	45	N/A
One-person households	30	20
Two-or-more person non-census-family households	10	N/A
Other household types	N/A	65
Selected Occupied Private Dwelling Characteristics		
Total number of dwellings	220	160
Number of owned dwellings	30	35
Number of rented dwellings	185	130
Suitable housing conditions	135	N/A
Non-suitable housing conditions	85	N/A

(Statistics Canada, 2007, 2017a)

Housing utility costs are based on subsidization which depends on household income. During a visit to Sanikiluaq in February 2022, Daniel Qavvik, Sanikiluaq's current MLA, explained that utilities cost Sanikiluaq households between \$60 and \$140 per month (D. Qavvik, personal communication, February 22, 2022).

Prices to build a home in Sanikiluaq are too high to be a realistic option for nearly all residents. As of February 2022, building a home in Sanikiluaq could cost between \$700,000 and \$900,000, while value of housing in Sanikiluaq is only between \$70,000 and \$120,000. As a result, there is a housing shortage in Sanikiluaq. Many Sanikiluaq residents (approximately 60%) live in public housing to alleviate costs to the family (A. Rumbolt, personal communication, February 25, 2022).

Impacts experienced from the difficulty to expand housing in Sanikiluaq has resulted in overcrowding in at least 85 households. In 2017, the Nunavut Housing Corporation (NHC) built 20 housing units in Sanikiluaq through a territorial funding initiative. This addition greatly benefited members. Nevertheless, the demand for housing continues to exist and increase with a quickly expanding population in Sanikiluaq (M. Rowan, personal communication, February 28, 2022). With the high housing demand, temporary accommodations can be difficult to access. Beyond the Inns North Amaulik Hotel, which is planned to re-open in the summer of 2022, there is one house in the community with four bedrooms and five beds that offers temporary rental accommodations. The research centre in the community, due to open fall of 2022, will include temporary accommodations with three rooms for up to six people that will be prioritized for visiting researchers, but may be offered to other visitors and workers when available (J. Heath, personal communication, March 17, 2022).

Language

Most residents of Sanikiluaq speak both English (94.9%) and Inuktitut (84.7%). Knowledge of English increased from 73.2% in 2006 to 94.9% in 2016. Knowledge of other languages excluding English, French, and Inuktitut decreased between 2006 and 2016 from 24.5% to 4.5% (Statistics Canada, 2007, 2017a) as shown in Table 4.4.

Table 4.4: Sanikiluaq 2006 vs. 2016 Knowledge of Languages

Language Characteristics	2016			2006		
	Total (N)	Male (N)	Female (N)	Total (N)	Male (N)	Female (N)
Language Knowledge – Total Number (N)	880	450	435	745	380	360
Indigenous language(s)	0	0	0	20	10	15
English	835	430	405	545	280	265
French	0	0	0	10	0	0
English & French	10	5	10	15	10	10
Inuktitut	745	375	375	N/A	N/A	N/A
Other	40	15	20	185	90	90

Source: (Statistics Canada, 2007, 2017a)

Cost of Living

Cost of living is very high in Sanikiluaq, particularly related to food prices. Food prices, while subsidized by the Government of Canada (Canada, 2014), remain higher than the Canadian average, although relatively similar to the average prices in Nunavut. In comparison to prices in Ottawa, Sanikiluaq food prices are on average 40.5% more expensive (Nunavut Bureau of Statistics, 2018). In general, food items considered to be healthier are more highly subsidized, and do not have as high of a price difference than other, more processed foods. For example, ground beef is about 40% less expensive in Sanikiluaq than in Ottawa, and fruits and vegetables are about double the price of Ottawa averages. In contrast, flour is 6 times more expensive than in Ottawa and processed food such as pre-cooked dinners are 4 times more expensive than in Ottawa. Some examples of food prices and their differences between Sanikiluaq, Nunavut and Ottawa, are listed in Table 4.5.

Table 4.5: 2018 Food Prices in Sanikiluaq, Nunavut, and Ottawa

Cost of Individual Food Items 2018 (\$)			
Item and Size	Sanikiluaq	Nunavut	Ottawa
Butter [454g]	14.30	17.45	14.30
Processed Sliced Cheese [450-500g]	18.71	18.74	12.98
Yogurt [650g]	7.80	10.53	7.94
Flour [2.5kg]	12.15	12.04	2.13
Soda Crackers [450-454g]	15.20	17.69	8.87
White Bread [570g]	9.05	7.15	4.62
Bananas [0-1.36kg]	4.69	5.39	1.43
Potatoes [2.27kg Bags]	3.33	3.66	1.93
Tomatoes [0-2kg]	7.09	7.62	2.18
Canned Pink Salmon [213g]	30.00	26.45	7.87

Cost of Individual Food Items 2018 (\$)			
Item and Size	Sanikiluaq	Nunavut	Ottawa
Ground Beef [0-2kg]	16.49	16.13	23.65
Peanut Butter [1kg]	8.79	9.87	2.99
Chocolate Bars [50-54g]	52.55	53.06	27.09
Frozen Pre-Cooked Dinners [250-299g]	24.26	25.13	9.96
Potato Chips [240-259g]	30.76	24.11	11.63
Milk 2% [2L]	3.70	3.14	2.99
Apple Juice [960ml-1 L]	8.59	6.09	1.99
Total Cost of Listed Items	267.46	264.25	144.55
Total Cost of 35 Items (not all are included in the list)	481.02	484.75	285.98

(Nunavut Bureau of Statistics, 2018)

Food insecurity has been mentioned as a prominent issue in Sanikiluaq (M. Rowan, personal communication, February 28, 2022). It is not uncommon for Sanikiluaq residents to run out of food between paycheques and to receive help from other residents through the Facebook group or personal connections. Other ways to help address food insecurity is through the Hunters and Trappers Association, which shares traditional foods with Sanikiluaq residents. Other occasional hunters also provide traditional foods such as seal, reindeer, and polar bear meat, and fish in the summer, to be distributed among Sanikiluaq residents (A. Rumbolt, personal communication, February 26, 2022). Currently, a community freezer exists to help store traditional foods, however, due to high energy costs, this freezer is not being used. As a result, food storage is more difficult in the summertime (J. Heath, personal communication, February 21, 2022).

Safety, Crime, and Security

Incidents of criminal violation have increased in Sanikiluaq between 2006 and 2017 by 99%. The rate of criminal violations was 11.6% higher per capita in Sanikiluaq compared to Nunavut. Mischief is the most common crime in the community making up of 24% of violations, assault follows at 21% of all violations. Table 4.6 shows the percent of each criminal violation type and Table 4.7 shows all violations in comparison to population.

Table 4.6: Percent of Criminal Violations

Criminal Violations	Sanikiluaq		Nunavut
	2006 (%)	2017 (%)	2017 (%)
Sexual Assault	4	2	1
Assault	27	21	11
Harassment and threats	11	8	3
Breaking and entering	7	8	2
Theft	7	3	3
Mischief	11	24	38
Disturbing the peace	15	15	34
Administration of justice	7	9	4
Impaired driving	1	2	2
Drug violations	3	2	1
Other violations	7	6	2

(Nunavut Bureau of Statistics, 2018)

Table 4.7: Total Criminal Violations

	Sanikiluaq		Nunavut
Total (all criminal violations)	113	225	4,972
Population	745	885	35,944

(Nunavut Bureau of Statistics, 2018)

Governance and Leadership

Sanikiluaq is the southernmost community in Nunavut, and is part of the Qikiqtani Region, one of three regions within the territory (QIA, 2022). The municipality is governed by a mayor and council. The position of mayor is currently held by Johnnie Cookie. The municipal offices are responsible for managing services within the community, which include departments for Finance, Recreation, Economic Development, Community Lands, Justice, and Alcohol and Drug Control (Hamlet of Sanikiluaq, 2009).

The representative for Sanikiluaq residents at the territorial level is the Member of the Legislative Assembly (MLA) for Hudson Bay. The position is currently held by Daniel Qavvik who was elected in October 2021. The MLA is responsible for advocating for beneficial legislation and resources for constituents, including the Project (D. Qavvik, personal communication, February 21, 2022).

Economic Development and Opportunities

The economy of Sanikiluaq is sustained by construction, social work, and traditional activities including hunting, fishing, hide tanning, and art (M. Rowan, personal communication, February 28, 2022).

The Sanikiluaq Economic Development Plan (2019-2023) lists several economic development goals in the five-year action plan (NVision Insights, 2019). These include:

1. Increase community economic development planning capacity and ensure that the Community Economic Development Plan is implemented, and its initiatives communicated.
2. Increase income and employment in the community.
3. Maximize opportunities in the renewable resources sector.
4. Support and develop small businesses.
5. Stay updated on developments in the mining and tourism sector.

Many local economic opportunities have been impacted by the COVID-19 pandemic. During a visit to Sanikiluaq in February 2022, Sanikiluaq's Economic Development Officer, Michael Rowan, explained that economic opportunities have decreased, including tourism, construction, and social activities, which had previously sustained the economy (M. Rowan, personal communication, February 28, 2022). Nevertheless, several economic development opportunities have been prospected and/or started and are described further in the following sections.

Commercial Fisheries

While commercial fisheries do not yet exist officially in Sanikiluaq, several initiatives are proposed to kickstart sustainable fisheries. To realize fishing as a business venture, locals have been working with the World Wildlife Fund-Canada (WWF) since 2015 to develop a sustainable ocean-based economy (also known as a blue economy). Some opportunity for exports include Icelandic scallops, sea urchins, and sea cucumbers. Additionally, harvests of the 4,500kg quota of Arctic Char are being prospected. In 2019, the community began collaborating with WWF, University of Quebec at Rimouski, and Memorial University in Newfoundland to study availability of the species near the Belcher Islands to assure sustainable harvesting (Chiasson, 2021).

In 2021, the Qikiqtaaluk Corporation (QC) Fisheries department conducted baseline surveys in Sanikiluaq among other communities in Nunavut, on possible fish stock development in the region for commercial

inshore fisheries (E. Mentink, personal communication, March 29, 2022). QC Fisheries has been using its research vessel, called “Ludy Pudluk”, together with Inuit Traditional Knowledge, to better understand future prospects for this development. Four crew members are on the vessel; two members from the Marine Institute and two Inuit technical crew trainees from Nunavut. The vessel plans to continue research in Sanirajak and Igloodik in 2022, to collect more complete data for the whole of Nunavut (Nunavut News, 2021).

In 2017, four communities including Sanikiluaq, Cape Dorset, Hall Beach, and Igloodik, formed the Qikiqtani Fisheries Alliance (QFA), whose priorities include:

- Harvesting fish commercially according to the Minister of the Department of Fisheries and Oceans, and following recommendations of the Nunavut Wildlife Management Board (NWMB).
- Investing in offshore fisheries and in community economic and social development projects.
- Developing other projects and infrastructure related to fisheries.
- Conducting studies and surveys to determine species present in local and nearby communities.
- Developing inshore and near-shore fisheries near Nunavut waters for harvests of species such as sea cucumber, scallops, clams, sea urchins, mussels, char, shrimp and/or crab. (NVision Insight, 2019)

Throughout these developments, the Qikiqtaaluk Corporation (QC) has been supporting the QFA in its establishment and is likely to play a more long-term management role in the activities. It is possible that should QFA obtain quota, QC will harvest QFA allocations through their wholly owned company Qikiqtaaluk Fisheries Corporation and will return royalty payments to the QFA for distribution to its members (NVision Insight, 2019). These activities are an example of fishery developments growing in the region.

In 2021, the Government of Nunavut received \$3.2 million from the federal government to invest in the fisheries development project. With the funding, Sanikiluaq’s HTA is planning to invest in a fishing vessel, processing plant, and a new community freezer for storage. One third of stored produce could be exported to other communities outside of Nunavut. In addition, with the growth of their blue economy, employment opportunities are expected to expand. For example, between Sanikiluaq, Arviat, and Kinngait, 35 new jobs are expected to become available in the industry (Rogers, 2021).

Power

Energy in Sanikiluaq, like the rest of Nunavut, is derived 100% from diesel fuel. This fuel is used both for electricity and heating. Diesel fuel is shipped to Sanikiluaq in the summer months from Montreal, in sea containers (M. Rowan, personal communication, February 28, 2022), and stored in tank facilities in the community (QEC, n.d.). Because of its remote location, Sanikiluaq is not connected to a regional power transmission grid system and relies solely on its own energy transmission system.

The Qulliq Energy Corporation (QEC) is the only utility providing electricity and district heating to Sanikiluaq and the rest of Nunavut. QEC currently has 25 power plants operating in 25 Nunavut localities. Because of seasonal changes in demand, QEC power plants typically have multiple generators allowing some or all to be online depending on demand. This is an example of how the system is able to adapt to the unique conditions in the harsh Nunavut climate (QEC, n.d.).

QEC has stated on its website the intention to move toward wind in the Nunavut region (QEC, n.d.a).

With the proposed transition to wind-powered electricity in Sanikiluaq, QEC could significantly decrease its dependence on diesel fuel for electricity production, by 50%.

Mining and Aggregate Resources

Mineral exploration decreased by almost half in Nunavut within the first year of the COVID-19 pandemic (CIRNAC Nunavut Regional Office, 2020).

To date, the primary quarrying activity in Sanikiluaq is the local gravel pit which is owned by the Hamlet of Sanikiluaq, and currently employs four workers on a seasonal basis. Gravel extracted from the pit is used for local infrastructure projects, such as the construction and maintenance of local roads (M. Rowan, personal communication, February 28, 2022).

In 2012, mining prospectors had considered the development of iron mining on the Haig Inlet of Flaherty Island, 22 km south of Sanikiluaq. In 2012, Canadian Orebodies began exploratory drilling for the proposed Haig Inlet Iron Project, to confirm the estimated amount of 230 million tons of iron ore deposits. The islands were considered a beneficial location where the Hudson Bay tidewaters would allow resources to be shipped globally without the use of trains (Hemlo Explorers, 2012). The property is 14,180 hectares large, with 2,680 hectares being Inuit-owned land. Presently, 64 drill sites exist, and although Canadian Orebodies maintain their mining claims in the region, prospecting activities ceased shortly after exploratory drilling began, due to low resource demand and community opposition. (Chaisson, 2021; Hemlo Explorers, personal communication, Feb. 15, 2022).

Art

Artists in Sanikiluaq are known to produce soapstone art, baskets from lyme grass, and eider down clothing and blankets (Hamlet of Sanikiluaq, 2022a). Other products sold in auctions around Canada include animal hides such as polar bear (K., personal communication, February 23, 2022). Before the COVID-19 pandemic, several art rooms existed in Sanikiluaq where vendors could sell and create art. However, since 2020, this has been removed to align with COVID-19 safety restrictions (M. Quittusuk, personal communication, February 28, 2022).

Soapstone has been locally extracted and used for artwork by Sanikiluaq residents. Sanikiluaq has a unique type of soapstone called argillite. This type of stone is only found on the Belcher Islands and is known for its depth and colours ranging from near black to vibrant green (Hudson Canada, n.d.). Local artists are able to extract their own soapstone at local quarries, or access previously extracted soapstone from several sea containers. Soapstone reserves are especially important in the winter when access to the quarries become difficult after snowfall (A. Rumbolt, personal communication, February 26, 2022).

Exports of carvings throughout Canada occurred in the past but are not common today. Exports of raw soapstone were considered by Sanikiluaq residents in the past, but due to sustainability concerns, it was decided to retain extracted soapstone for local use only (A. Rumbolt, personal communication, February 26, 2022). Currently, the major seller of soapstone carvings is Canadian Arctic Products (CAP) which buys the carvings from the Mitiq Co-op. However, current lack of demand has led to minimal sales. Another purchaser of local art is the Inns North Amaulik Hotel, which sells and displays local art (NVision Insight, 2019). Due to current hotel construction activities, this sales venue is also temporarily unavailable.

The Arctic Eider Society is currently planning a research centre which is to include cultural facilities to support the production of traditional clothing and art, as well as a space to share tools for these purposes. The centre is expected to open in the fall of 2022 (J. Heath, personal communication, February 27, 2022).

Tourism

Several tourism opportunities exist in Sanikiluaq, such as canoeing, kayaking, fishing, bird and wildlife watching, scenery viewing, snowmobiling and all-terrain vehicle riding, skiing and igloo camping in the winter, and hiking and camping in the summer (Hamlet of Sanikiluaq, 2022a). Nevertheless, tourism is uncommon due to the remoteness of Sanikiluaq. Consequently, the services are rarely used, and much less sustain community livelihoods.

Travel is also expensive for tourists; most flights are operated by Calm Air from Winnipeg which runs twice a week and costs approximately \$1,000 to \$2,000 round-trip. Depending on demand, flights are also available from Montreal to Sanikiluaq through Air Inuit (Hamlet of Sanikiluaq, 2022; Air Inuit, 2022), and a pilot project is currently also providing flights from Iqaluit until August 2022 (McKay, 2022).

Moreover, accommodations are limited in Sanikiluaq. One Inns North Amaulik Hotel currently exists in the municipality. It is under renovation and will be available for use in the summer of 2022. The previous Amaulik Hotel offered six rooms each of which can accommodate two guests per night. The new hotel will provide 12 suites, and an additional conference centre, dining room and kitchen (Co-op manager, personal communication, March 18, 2022).

Employment and Income

Impacts to employment from the Project is an important consideration, as current employment opportunities are limited due to the small size and remote location of Sanikiluaq. Currently, the top employers in Sanikiluaq are the Government of Nunavut and the Hamlet of Sanikiluaq which provide positions mainly related to health care, education, and social services (Statistics Canada, 2017a; M. Rowan, personal communication, February 28, 2022). In 2016, the unemployment rate in the community was 28.3%, which was 8.3% higher than in 2006. The majority of individuals were employed in the health and education sector (95 individuals), followed by other services (60 individuals), wholesale and retail (35 individuals), manufacturing and construction (20), and business service (15). Table 4.8 provides workforce characteristics for Sanikiluaq (Statistics Canada, 2007, 2017a).

Table 4.8: Sanikiluaq 2006 vs. 2016 Workforce Characteristics

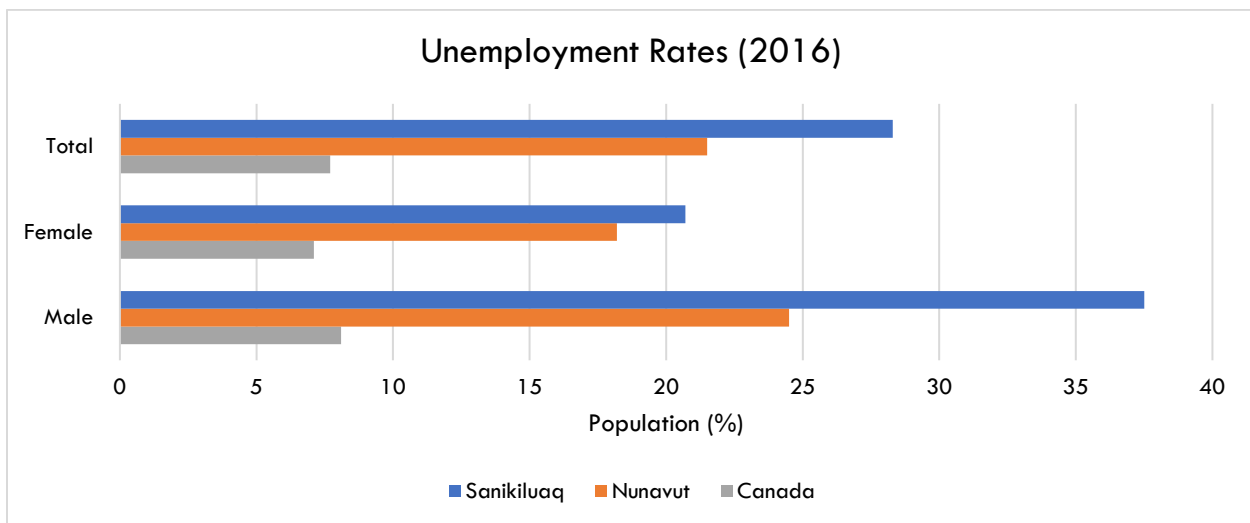
Workforce Characteristics	2016			2006		
	Total	Male	Female	Total	Male	Female
Labour Force Indicators						
Participation rate (%)	53.6	53.3	54.7	55.6	53.2	58.1
Employment rate (%)	38.4	35.0	43.4	45.6	44.7	46.5
Unemployment rate (%)	28.3	37.5	20.7	20	20	20
Industry						
Working age population 15-64 (N)	530	275	245	430	225	210
Labour force 15 years + (N)	300	155	145	240	125	115
Agriculture, resource based (N)	10	10	0	0	10	0
Manufacturing, construction (N)	20	20	0	25	15	0
Wholesale, retail (N)	35	15	20	35	30	15
Finance, real estate (N)	10	10	0	10	10	10
Health, education (N)	95	10	80	70	10	55
Business services (N)	15	10	0	15	10	10
Transportation, warehousing (N)	10	0	0	10	10	10
Other services (N)	60	50	15	90	50	35
Occupation						
Management (N)	15	10	10	10	0	0

Workforce Characteristics	2016			2006		
	Total	Male	Female	Total	Male	Female
Business and administration (N)	30	10	25	25	10	20
Natural sciences, health (N)	0	0	0	10	0	0
Social sciences, gov't (N)	85	15	70	50	10	45
Art, culture, recreation & sport (N)	10	0	0	15	15	0
Sales and service (N)	50	20	25	70	25	45
Trades and related (N)	50	45	10	50	45	0
Primary industry (N)	20	10	0	0	10	0

(Statistics Canada, 2007, 2017a)

In 2016, unemployment in Sanikiluaq was 6.8% higher than in Nunavut and 20.6% higher than the national average. National unemployment rates tend to be higher among men than women and this is also true for Nunavut and Sanikiluaq; however, the percent margin between men and women is the largest in Sanikiluaq as men were 16.8% less likely to be employed (Statistics Canada, 2017, 2017a). Figure 4.2 compares the unemployment rate between men and women for Sanikiluaq, Nunavut, and Canada.

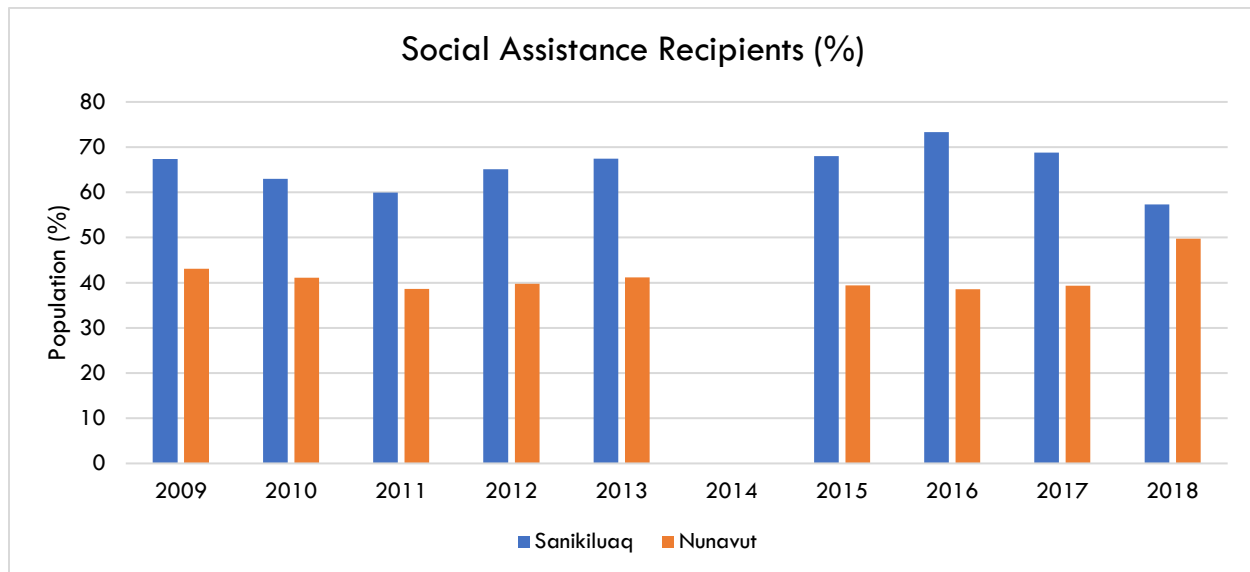
Figure 4.2: 2016 Unemployment by Gender



(Statistics Canada, 2017, 2017a)

Most Sanikiluaq residents receive social assistance benefits. In 2018, 57.3% of individuals received benefits. Between 2016 and 2018, the percent of people receiving assistance in Sanikiluaq decreased by 16%, whereas the Nunavut average increased by 11%. In 2016, there was a 34.7% difference in total social assistance recipients between Sanikiluaq and the Nunavut average; however, this gap decreased to 3.6% in 2018 (Nunavut Department of Family Services, 2019). No data is currently available to provide a reason for this change. Figure 4.3 shows the percentage of Sanikiluaq and Nunavut residents receiving social assistance.

Figure 4.3: Percent of Sanikiluaq and Nunavut Residents Receiving Social Assistance



(Nunavut Department of Family Services, 2019)

Note: Data for 2014 was not published by the Nunavut Department of Family Services, not the Nunavut Bureau of Statistics

According to Sanikiluaq's Income Support Coordinator, Martha Quittusuk, employment levels have decreased since 2020 as a result of the COVID-19 pandemic. As of February 2022, approximately 300 Sanikiluaq residents of working age (18-59) are on income support (M. Quittusuk, personal communication, February 28, 2022). This accounts for approximately 56.6% of the total of 530 residents who are working age in Sanikiluaq, according to the 2016 census data (this number may vary slightly as the Statistics Canada working age is 15-64, and the population date differs).

Median income of individuals in Sanikiluaq increased from \$14,364 in 2006 to \$18,368 in 2016. When considering the rate of inflation of the Canadian dollar, \$14,364 in 2006 would be \$16,863 in 2016 (Bank of Canada, 2022), which implies that the median income increased by 8.9%. Median income increased substantially among women moving from \$13,216 to \$25,579 annually but decreased among men moving from \$15,264 to \$9,493 annually. Three quarters (75.2%) of Sanikiluaq's income comes from the market, which includes earnings from employment, investments, and private pension income, with the rest coming from government transfers (24.8%). A greater portion of women's income comes from government transfers (28.7%) compared to men (18.2%) in Sanikiluaq. Table 4.9 and Figure 4.4 show Sanikiluaq income characteristics.

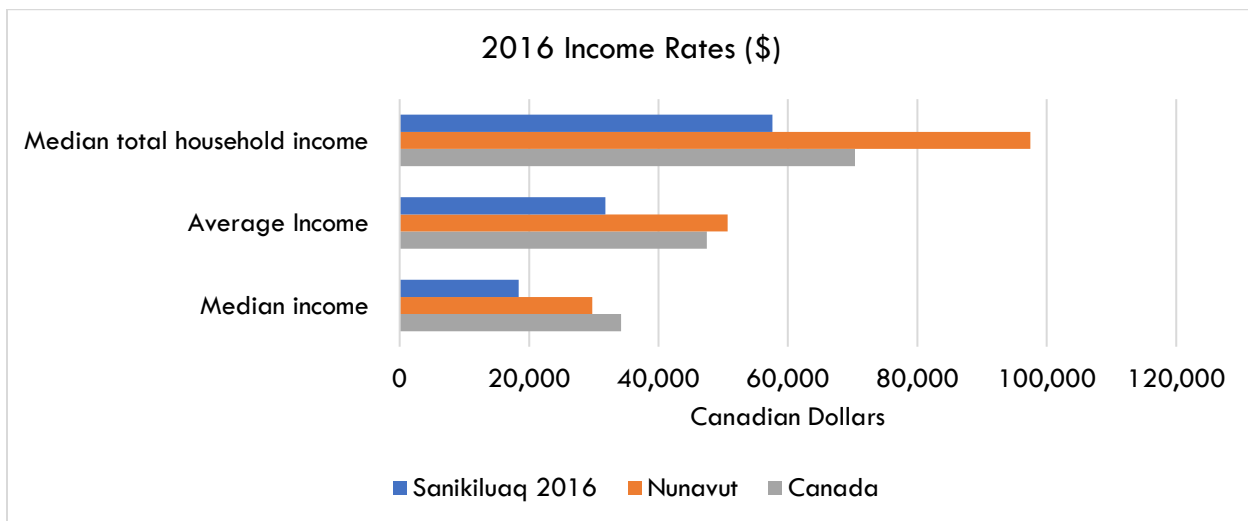
Table 4.9: Sanikiluaq 2006 and 2016 Income Characteristics

Income characteristics	2016			2006		
	Total	Male	Female	Total	Male	Female
Persons 15 years of age and over with income	515	265	250	405	210	195
Median Income (\$)	18,368	9,493	25,579	14,368	15,264	13,216
Average earnings (\$)	31,805	26,015	38,016	N/A	N/A	N/A
Market Income (%)	75.2	81.4	70.8	76.2	79.8	67.7

Income characteristics	2016			2006		
	Total	Male	Female	Total	Male	Female
Employment Income (%)	71.5	80.8	68.0	N/A	N/A	N/A
Government transfer (%)	24.8	18.2	28.7	22.7	15.8	28.5
Median Total Household Income (\$)	57,600			43,520		

(Statistics Canada, 2007, 2017a)

Figure 4.4: Canada, Nunavut, and Sanikiluaq 2016 Income



(Statistics Canada, 2017, 2017a)

Education and Training

Sanikiluaq has a primary school, secondary school, a daycare, and an adult education program. Table 4.10 below shows the breakdown of students attending these programs as of February 2022.

Table 4.10: Sanikiluaq Education Facilities

School	Type	Number of Students
Najuqsivik Daycare	Daycare	N/A
Nuiyak School	Kindergarten Primary (grades 1-6)	160
Paatsaali School	Secondary (grades 7-12)	130
Nunavut Arctic College (Community Learning Center)	Post-Secondary Education Adult Education	3

(Hamlet of Sanikiluaq, 2022)

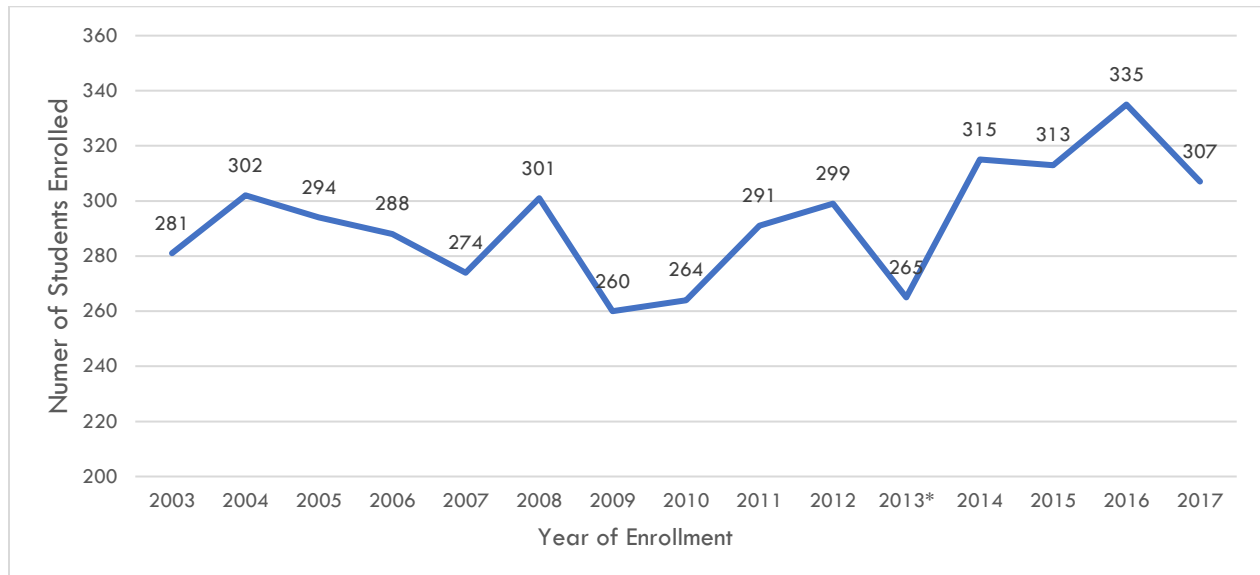
Nuiyak School is a kindergarten and primary school for approximately 200 children supported by 25 staff. The curriculum is primarily in Inuktitut until grade 4 when the language is transitioned to 75% English. Students at Nuiyak School can participate in extracurricular activities throughout the year, including sports and student council (NTIP, 2022).

Paatsaali High School is located next to Nuiyak School, and has about 177 students (NTIP, 2022a). The high school supports student access to supplementary education programs, athletics and health programs, Sanikiluaq Wind Energy Project Socio-economic Impact Assessment Report, April 2022

financial aid, and post-secondary education options as outlined in its Education and Financial Opportunities Handbook (Tamiomik, 2019).

Figure 4.5 shows the number of enrolled students from kindergarten to grade 12, in Sanikiluaq public schools, based on numbers collected by the Government of Nunavut's Department of Education and prepared by the Nunavut Bureau of Statistics (2018).

Figure 4.5: Public-School Enrollment Between 2003 and 2017



(NBS, 2018)

Note: In 2013, enrollment started on October 31 instead of September 30.

It is important to note that as with other activities, COVID-19 has had a major impact on schools in Sanikiluaq. Currently, the elementary school and high school run at half capacity, to prevent potential spread of the virus. Classes are split in half with children from families grouped together and students attending school half weeks at this time. According to the Nuiyak School principal, many parents have withdrawn their students from school completely to prevent possible contraction of COVID-19. Currently, approximately 20% of students are attending school based on family decisions to protect their children from possible contraction of COVID-19 (A. Crabb, personal communication, February 25, 2022).

Nunavut currently has one post-secondary institution, the Nunavut Arctic College (NAC). NAC has five campuses and community learning centers located in all 25 communities. There is a community learning center located in Sanikiluaq. Residents generally prefer to stay in their community, which limits the use of post-secondary institutions outside of Sanikiluaq (D. Thomas, personal communication, February 25, 2022). Often, if students choose to attend post-secondary school, they most commonly attend NAC. As of February 2022, three students are attending the local learning centre for its Office Administration program. This program has been running for the last two years with two students attending in the previous 2020/2021 cohort. Currently the learning centre is aiming to combine both cohorts to develop a two-year diploma program, instead of a one-year certificate program. Other programs have existed in the past, such as a translation program and a Nunavut Teachers Education Program. Each year, the learning Centre undergoes a needs assessment in which NAC decides which program will be taught in the community. Other programs that have been requested in the past but have not been accepted, such as a camp cooking and industrial cooking program, and a program for fur design (D. Thomas, personal communication, February 25, 2022).

Another popular program that exists on the main NAC campus in Iqaluit, is the Environmental Technology Program. This program takes two years to complete and has had several graduates from Sanikiluaq in the past (D. Thomas, personal communication, February 25, 2022).

Between 2006 and 2016, the percentage of Sanikiluaq residents aged 15 and above with a high school diploma increased by 9.5%, from 27.5% to 37%. In 2006, 30.2% of women and 20% of men graduated high school, and in 2016, these numbers increased to 40% and 37.3% respectively. The slightly lower rate of graduation by men may be attributed to their cultural role in providing traditional foods to the community. With hunting activities being a major part of community lifestyle, some males in Sanikiluaq do not see a purpose in continuing education and prefer to pursue hunting, and at times, commercial harvesting activities for income generation (HTA meeting, personal communication, February 23, 2022). Most people in Sanikiluaq that complete high school further their education (72% of men and 54.5% of women) through either trades, apprenticeship, or university programs. While more men further their education in trades and apprenticeships, a greater percentage of women graduate from university. The number of women with a bachelor's degree or higher increased slightly between 2006 and 2016 from 7% to 7.3% and decreased in men from 4.4% to 3% (Statistics Canada, 2007, 2017a). More information about education in Sanikiluaq can be found in Table 4.11.

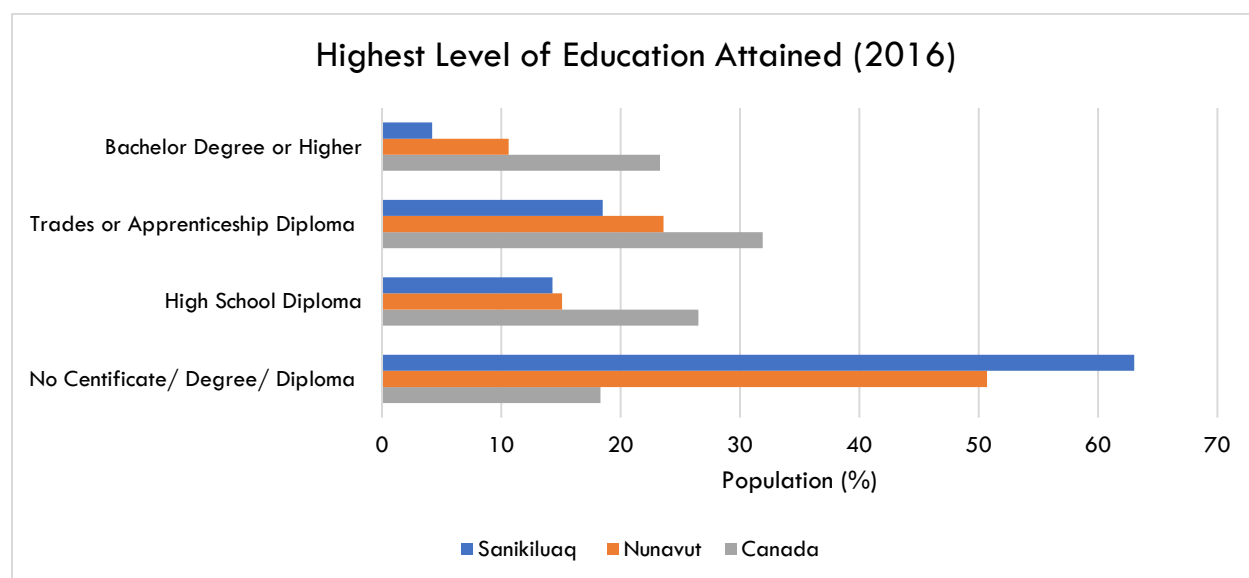
Table 4.11: Sanikiluaq 2006 and 2016 Education Characteristics

Education characteristics	2016			2006		
	Total (N)	Male (N)	Female (N)	Total (N)	Male (N)	Female (N)
Highest Degree or Certificate – by number of individuals (N)						
Population 15 years and over	560	295	260	450	235	215
No degree, certificate or diploma	375	210	165	330	180	150
High school diploma or equivalent only	85	35	50	30	0	25
Trades/apprenticeship or other non-university certificate	110	80	40	65	35	25
University certificate below bachelor level	0	0	0	10	0	0
University degree (bachelor level or higher)	25	10	20	20	10	15

(Statistics Canada, 2007, 2017a)

Nunavut has the lowest rates of certificate diploma and degree attainment out of any province or territory in Canada. In 2016, 49% of Nunavut residents above the age of 15 completed high school or an equivalent, whereas the national average was 81.7%. High school completion is even lower in Sanikiluaq with a 37% completion rate. Rates of furthering education are also lower in Nunavut and Sanikiluaq than the national average. Nearly one in five (18.5%) Sanikiluaq residents, 24% of Nunavut residents, and 31.9% of all Canadians have furthered their education through trades, apprenticeship, college, and other non-university programs. For university programs, 4.2% of Sanikiluaq residents, 11% of Nunavut residents and 23.3% of all Canadians have completed a bachelor's degree (Statistics Canada, 2017, 2017a). Statistics comparing education attainment in Sanikiluaq, Nunavut, and Canada, can be found in Figure 4.6.

Figure 4.6: Percent of Population per Highest Level of Education Attained (2016)



(Statistics Canada, 2017, 2017a)

Contracting and Business Opportunities

Sanikiluaq has several businesses which offer services to residents. Some prominent businesses include the Mitiq Co-operative Association Limited, which owns the retail store, convenience store, a fueling station, hotel and restaurant (currently under construction), and provides cable television services (providing dish, installment and repair services; members choose their own provider), and on occasion, distributes Inuit carvings (Co-op, 2022). Other businesses include the Northern Store, which provides groceries, an ATM machine, and Canada Post office. Sanikiluaq also has two construction companies, Kawtaq Construction Ltd. and Gary's Construction, that are available to work on future infrastructure projects (A. Rumbolt personal communication, February 25, 2022; M. Rowan, personal communication, February 28, 2022). The construction companies have particularly high capacity in drivers and loaders; however, specialized services occasionally require external experts to come to Sanikiluaq (A. Rumbolt, personal communication, March 9, 2022).

Another organization which may offer business opportunities to support infrastructure projects is the Arctic Eider Society, which owns a crane that can be rented out for future infrastructure projects. Additionally, the Arctic Eider Society is in the process of developing a research centre powered by green energy and is looking for collaboration opportunities to make this possible (J. Heath, personal communication, February 28, 2022).

Table 4.12 shows businesses and organizations that could provide services to future infrastructure projects.

Table 4.12: Businesses and Organizations Offering Services in Sanikiluaq.

Business	Services	More Information
Mitiq Co-operative Association Limited	Several services: <ul style="list-style-type: none"> • Retail store • Convenience store • Hotel and restaurant • Cable television services • Fueling Station 	Services provided throughout Nunavut by the Arctic Co-operative Association Limited.

Business	Services	More Information
	<ul style="list-style-type: none"> Inuit carvings (Co-op, 2022) 	
Northern Store	Sells groceries, art, hides; includes an ATM and Canada Post	Chain serving northern communities across Canada.
Kawtaq Construction Ltd.	Several services: <ul style="list-style-type: none"> Residential home construction Home complete renovation Building gravel pads and gravel roads Light and heavy equipment rental Beach handling sealift delivery services (Hamlet of Sanikiluaq, 2022) 	100% Inuit-owned, locally.
Gary's Equipment	General construction company	Provide general services. Will be receiving two loaders and a dump truck on the sea lift in summer 2022.
The Arctic Eider Society	Community-based charity providing the following services: <ul style="list-style-type: none"> Community-driven outreach Education and outreach Stewardship 	Non-Profit Organization. Own a crane that can be rented for construction work. Are looking to collaborate on green energy development in the community.
Hamlet of Sanikiluaq	Providing economic and social services to the community of Sanikiluaq	Have a rock crusher that can be rented (ideally reserved 6 months in advance of rental date).

(Hamlet of Sanikiluaq, 2022)

Traditional Activities

Current Use of Lands and Resources

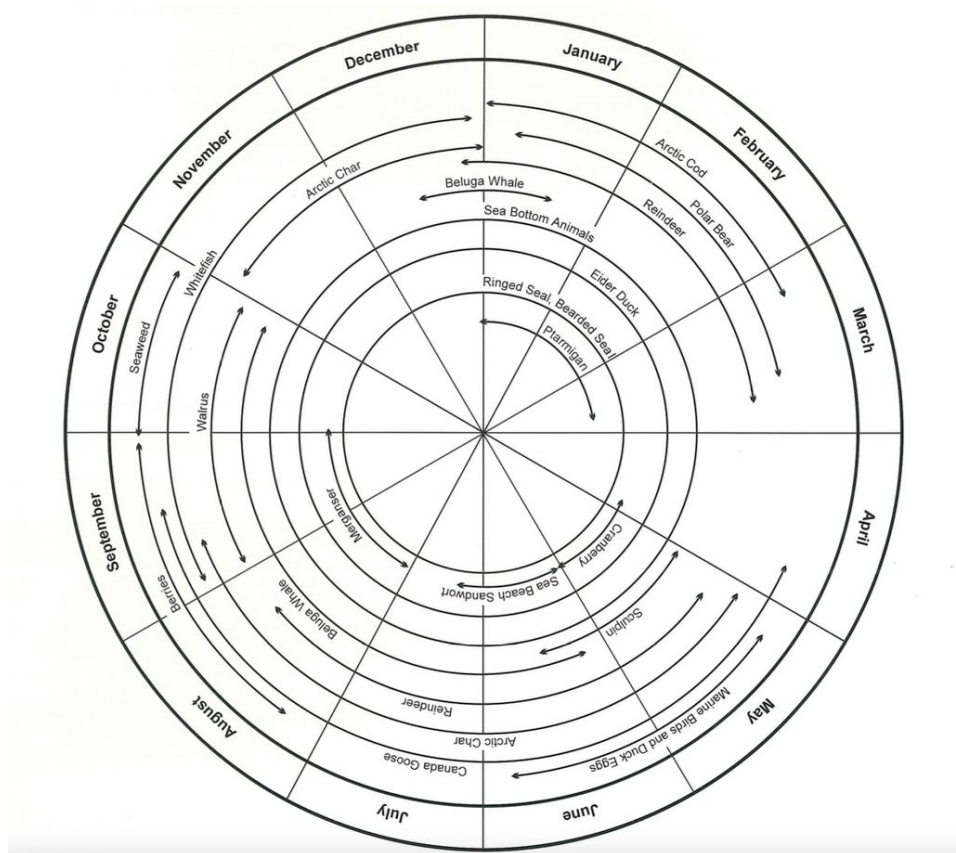
Sanikiluarmuit (Inuit residents of Sanikiluaq) have broad and deep knowledge of the environments in which they live and travel, and of the natural processes within these environments. Inuit Qaujimajatuqangit (IQ) refers to this knowledge base and includes the relations and responsibilities that Inuit have to the environment, one another, and their communities. IQ is culturally distinct knowledge passed down from generation to generation over thousands of years that has allowed Inuit to thrive on their lands and waters, while remaining adaptable to the high level of variability experienced in the Arctic environment. IQ is continually evolving and incorporating new information, and includes knowledge of weather and climate, natural history of plants and animals, water, snow, and ice conditions and dynamics, stars and northern lights. In addition, it includes practices and world views that demonstrate respect for biotic and abiotic elements of the environment, the practices and skills involved in successful land-based activities, and interpersonal conduct and responsibility to community. With respect to sustenance, IQ allows Inuit to access a diversity of nutritious food from a wide range of species, while ensuring the sustainability of local resources which is particularly important given the high price of food in Sanikiluaq.

Sanikiluarmuit harvest a diversity of seasonally available plant and animal species throughout the year (see Figure 4.7). The most commonly harvested and consumed species are ringed seal, bearded seal, common eider, and benthic animals including mussels, sea urchins, sea cucumbers, clams, and starfish (McDonald, Arragutainaq, & Novalinga, 1997). Labour related to traditional activities tends to be divided by gender with partnered men and women acting as a “working unit” with men responsible for the hunting, and women responsible for the household activities, gathering, fishing, and hunting small game (Quintal-Marineau, Wenzel, 2019). With the rise of the mixed wage/subsistence economy in the twentieth and twenty-first centuries, these roles shifted slightly, with wage employment becoming an important part of Nunavummiut women’s identity and women attaining higher levels of education, demonstrating a preference for permanent, full-time wage engagement, and having fewer opportunity conflicts (Quintal-

Marineau, Wenzel, 2019). From the available employment data and research conducted in the community, this pattern holds true in Sanikiluaq.

Harvesting in the Belcher Islands follows seasonal weather patterns with specific environmental patterns marking the turn towards the colder months at the end of August or beginning of September, including the migration of birds, beluga, and seal, walrus moving inshore, and changes in vegetation colour (McDonald et al., 1997). The spring is marked by the arrival of warm air, often followed by a return to colder temperatures and accompanied by freeze-thaw cycles of accumulated snow that can make feeding on resources under the snow difficult for animals like caribou, reindeer, fox, Arctic hare, and ptarmigan (McDonald et al., 1997).

Figure 4.7: Seasonal Foods of Belcher Islands Inuit (McDonald et al., 1997).



Hunting

The Belcher Islands host a variety of terrestrial and marine species. Sanikiluarmuit harvest a diversity of these terrestrial and marine species for subsistence purposes across the Belcher Islands, and up to 50 km north and west on the sea ice in the winter months towards the King George and Sleeper Islands (QIA, 2013). Sea ice provides a platform that allows for hunting certain species, including seals at breathing holes, and beluga at leads in the ice that form in the spring (QIA, 2013). Sanikiluaq does not have a quota for beluga whale, and will harvest 30-100 whales per season with additional *muktuk* (the skin and blubber layer) being sold to other communities that have a quota. In addition to harvesting for subsistence, some species, like eider, reindeer, polar bear, fox, and hare, are also harvested for clothing material.

Eider duck harvesting is of particular importance to the community. Eider ducks are harvested by the community for skins and feathers which are used to make clothing, while also being used for subsistence purposes. This practice is unique amongst Inuit, and first occurred around 1880 when the local caribou herd disappeared when ice covered their feeding grounds (Qikiqtani Truth Commission, 2013). The down used by eider ducks to construct their nests is also gathered by the community once the ducklings have fledged and is used for insulating clothing. Reindeer were introduced to the islands in 1978 as a replacement for the caribou that had disappeared 100 years prior (Travel Nunavut, 2021). In addition to eider ducks, several other bird species are harvested including merganser, Canada geese, and ptarmigan. Eggs are also harvested from some species, mainly geese and gull eggs. Reindeer are harvested to a limited extent in the winter as needed when other subsistence species are scarce.

Several marine mammal species are harvested by the community for subsistence and material, including ringed seal, bearded seal, beluga whale, and walrus. Each of these species provides food and material for hunters, and are often distributed throughout the community, especially in the case of the larger beluga and walrus, which are considered “community foods” (McDonald et al., 1997).

Land and marine use activities, including harvesting and research projects, are managed at the local level by the Hunters and Trappers Association (HTA) led by a board comprised of Elders and community members. The Arctic Eider Society (AES) operates collaboratively with the HTA to lead research and conservation efforts in Sanikiluaq focusing on the eider duck and its particular importance to the community. A community conservation officer is stationed at the environmental office, and is responsible for enforcement of environmental laws, as well as for sampling and data collection to support territory-level environmental monitoring, such as tooth sampling of harvested polar bears (J. Qittusuk, personal communication, February 21, 2020).

Marine and Freshwater Fish and Sea-Bottom Animals

The environment around Sanikiluaq provides abundant marine resources, but the unique landforms of the Belcher Islands also include an abundance of freshwater ecosystems, including the 113-kilometer long Kasegalik Lake, named after the unusual freshwater black seal that inhabits its waters (QIA, 2013). Sanikiluaq harvest several freshwater and marine species through the ice and with nets after breakup, including Arctic char, Arctic cod, whitefish, and sculpin (QIA, 2013). Numerous sea bottom animals are also harvested, including mussels, sea urchins, sea cucumbers, clams, and starfish (McDonald et al., 1997).

In the 2010s, the Sanikiluaq HTA worked with several agencies to assess the feasibility of a commercial shellfishery to diversify and support the economy of Sanikiluaq. Research into the fishery established that two species in particular were suitable for commercialization, the Iceland scallop (*Chlamys islandica*) and Northern Bay mussels (*Mytilus trossulus*) (Deslauriers, 2021a). These studies are ongoing and are considering other species, including sea cucumbers and urchins, as species of commercial interest.

Trapping

Trapping was noted to be limited in the community to less than five members for recreational/personal purposes (A. Rumbolt, personal communication, February 25, 2022). The only species that are trapped are Arctic foxes.

Plants, Berries, and Medicines

Sanikiluaq harvest some of the limited plant species that grow on the Belcher Islands. Lyme grass is harvested and used for basket weaving. These baskets are used for storage and gathering purposes and are also produced as art for sale. Berries are gathered throughout the spring and summer months, namely cranberries in the spring, as well as crowberry, cloudberry, blueberry, and bearberry. Plants that are harvested include Greenland lousewort. Numerous marine plants are harvested including some seaweeds, such as sea beach sandwort, kelp, and wracks (McDonald et al., 1997).

Minerals

The harvesting of minerals is of particular importance to Sanikiluaq. The community is renowned for its carvings from local stone, including argillite, and soapstone. These minerals are quarried from several sites in the Belcher Island archipelago, including soapstone or argillite on Tukarak Island (Qikiqtani Inuit Association, 2022). These quarries local to Sanikiluaq support a thriving carving community, with many active carvers. The soapstone quarries are separate from the aggregate quarries used by the town. The importance of these minerals to the community led to the Mitiq Co-op, which was created in 1968 to stake a mineral claim to protect the principal soapstone deposit on the islands and to operate a warehouse and handling facility (QIA, 2013). Carvings are also sold by individual artists directly as they are available. Disruptions to the supply of suitable stone from the quarries due to COVID-19 restrictions limited the production of carvings for some artists in 2021.

Physical and Cultural Heritage

Sanikiluaq's visual arts, including carving and sewing, are an important component of Sanikiluaq's cultural heritage, with up to 22% of Sanikiluaq's labour force being employed in the visual arts at times (Travel Nunavut, 2022). Dorset and Thule sites and ancestral Sanikiluaq habitation and land use areas exist across the archipelago, although there have been little to no systematic archaeological surveys or studies conducted (Travel Nunavut, 2022). To date, no archaeological surveys or studies have been conducted on the Project site or access road.

Non-Traditional Land and Resources Use

Protected Land and Marine Areas

There are two proposed areas in proximity to Sanikiluaq and the Project site that are currently under development/consideration for designated protected areas. Kinngaaluk Territorial Park, located on the peninsula adjacent to the northwest end of Sanikiluaq is proposed as an area for cultural activities and subsistence harvesting (see Figure 4.9). The park also creates opportunities for tourism through guiding and outfitting. Qikiqtait Protected Area is proposed as a pan-Belcher Island Archipelago conservation area (see Figure 4.8). The Sanikiluaq-led initiative under the Qikiqtait Inuit Association (QIA) is aimed at promoting the "conservation economy" of the area, by protecting resources and identifying opportunities for the community to benefit through sustainable use and received \$5.5 million in funding to lay the groundwork in 2019 from the Canada Nature Challenge Fund (Straightupnorth.ca, 2020). The initiative seeks to promote infrastructure development, Inuit-led governance, Inuit stewardship, and local fisheries in order to foster the blue economy in the region (QIA, 2020).

Figure 4.8: Qikiqtait Protected Area (QIA, 2020)

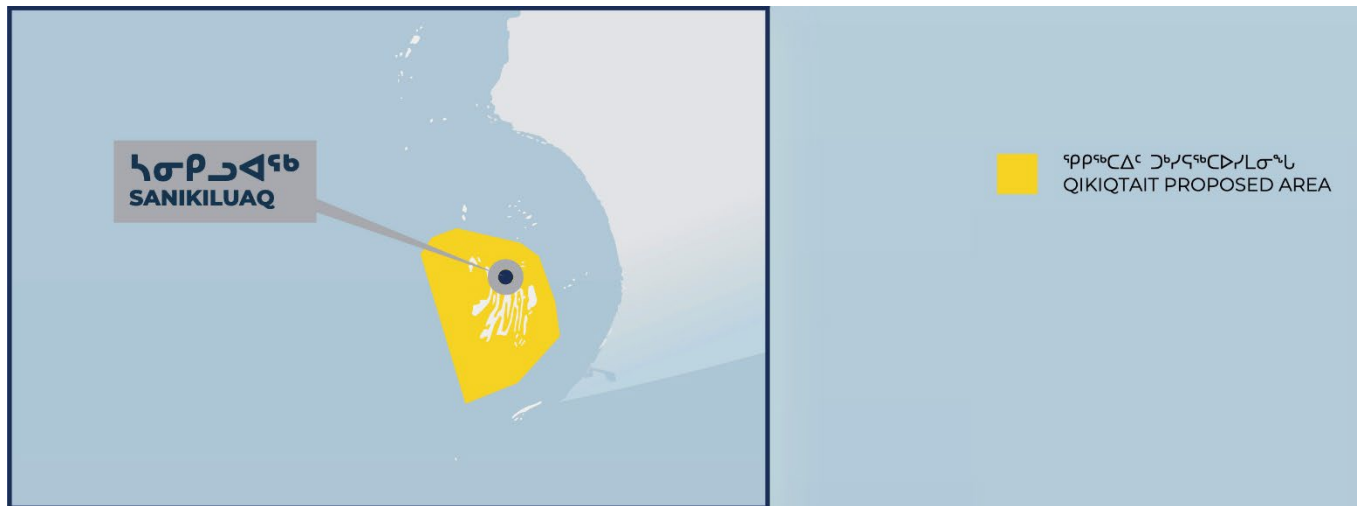
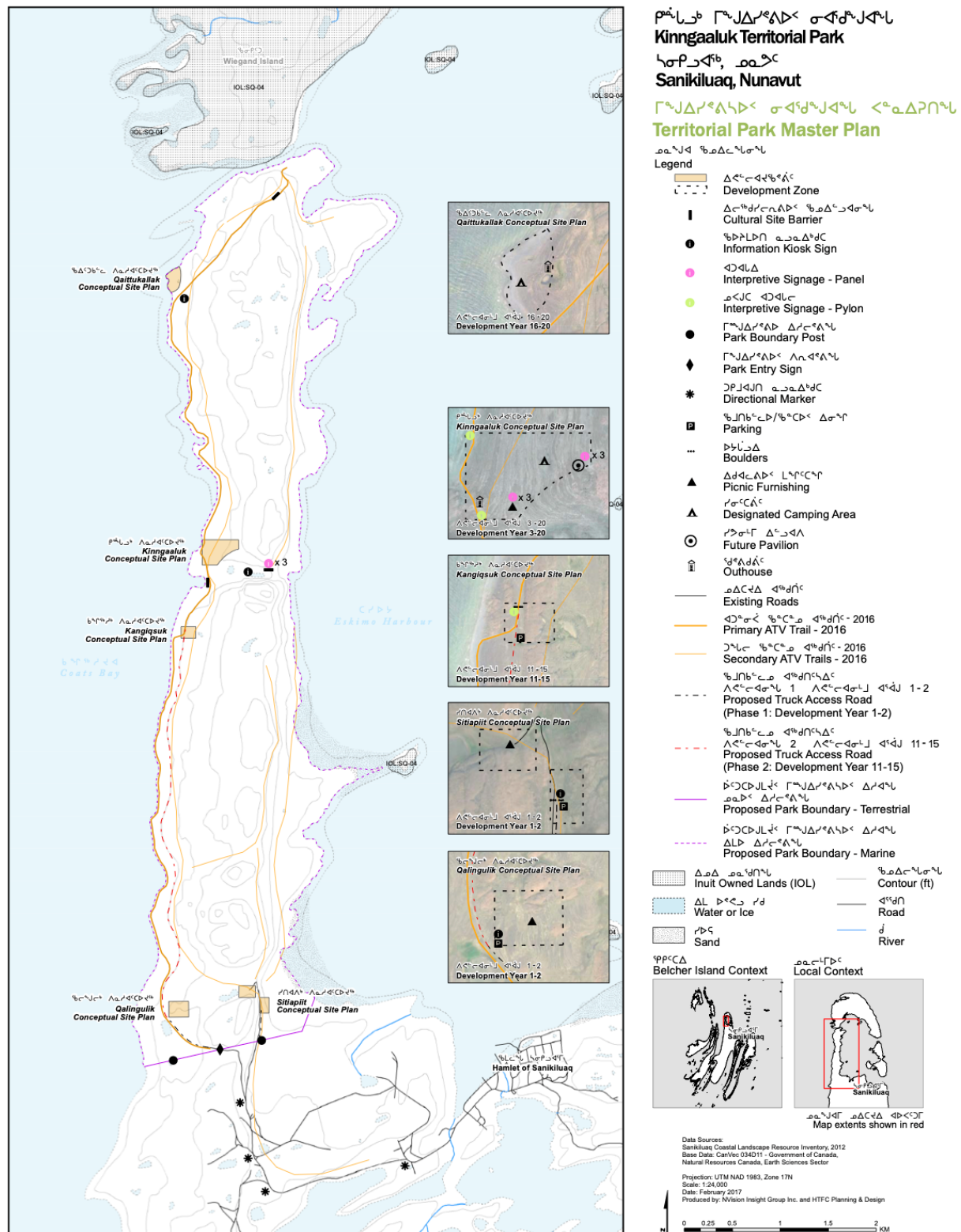


Figure 4.9: Kinngaaluk Territorial Park Plan (NVision Insight Group & HFTC Planning and Design, 2017)



Arctic Eider Society and SIKU

The Arctic Eider Society (AES) is a non-profit organization based in Sanikiluaq. The organization delivers community-based programs “that build capacity and self-determination across three pillars: community driven research, education and outreach, and stewardship” (AES, 2022). The organization was formed to research the impacts of Hydro Quebec dams on the marine ecosystems, and in particular the populations of eider ducks that the community relies on for food and material for parkas. The organization has since expanded to continue research on eider ducks and the broader marine environment around Sanikiluaq, as well as to promote and support the “eider economy” amongst Sanikiluarmuit which refers to harvesting, processing and sewing eider skins, and does not assume monetary exchange. Research on the eider duck includes the impacts of climate change on species, as well as conducting outreach programs to distribute eider skins and down, and to provide instruction for producing eider skin and down parkas. This includes funding for harvesters, purchasing eider skins and down, and facilitating knowledge transfer of eider skin processing, and parka sewing techniques and skills.

The AES has also collaboratively developed the Indigenous Knowledge Social Network, referred to as SIKU (see-coo), a community based social network and data gathering online/digital application that allows harvesters to record their trips on the land, document environmental and ecological conditions, including sea ice conditions, and record data about harvested wildlife. The SIKU application has been popular with the community with hundreds of data points having been recorded and uploaded to the database. The application is also beneficial for analyzing and comparing the return on investment of time, effort, and money by individual harvesters, providing valuable data that can be used to improve harvester support programs and protected area planning for Kinngaaluk and Qikiqtait Protected Areas (J. Heath, personal communication, February 28, 2022).

Arctic Eider Society Research Centre

The AES has funded and is building a research centre in Sanikiluaq due to be completed in fall 2022. The centre includes offices for the local Hunters and Trappers Association, a lab, accommodations for researchers, a garage for equipment and snowmobiles, a tool repository for community use, and space for eider duck economy-related teaching and preparation. The building is designed to be highly energy efficient, with above average insulation and some solar power. The AES has indicated their desire to purchase a percentage of wind energy capacity from the Project in order to run the centre fully with renewable energy, which would make it the territory’s first net-zero building. There are several challenges to overcome to achieve this goal, including coordinating with the local utility for the use of energy infrastructure, buying electricity through the utility at a fixed rate, or bypassing the utility entirely. The AES has expressed that it would be simplest to purchase power at an agreed rate with the utility, or to purchase a turbine for installation at the wind farm and use the existing or developed electricity infrastructure.

The AES indicated that if they were able to purchase a turbine or an agreement with the utility that resulted in excess power being available to them, they would donate the additional power to run the community freezer. The community freezer was built in 2016 but has since proven to be too expensive for the community to operate at current electricity rates and has not been used. Studies indicate that community freezers can help to improve access to country foods and food security in northern communities, and the freezer in Sanikiluaq would likely do the same for the community (Organ et al., 2014, Chan et al., 2006).

Polar Bear Hides

The auctioning of polar bear hides is an important source of income for harvesters. The polar bear hunt operates under a quota system that provides an allocation of bears for communities to harvest each year.

Bears are harvested traditionally for meat and material for clothing, but harvesters can choose to prepare full hides which can be sold at auction. Price varies based on the size and quality of the hide, but harvesters can expect to receive a minimum of \$3,000 for a hide that is at least 10 ft in length and of good quality (J. Qittusuk, personal communication, February 26, 2022).

In previous years, harvesters could receive an advance for the hides, and receive the difference once the hides were auctioned; however, advances were not offered in the 2022 season due to a lower demand for hides in general. Hides can still be sold at auction, which provides an important source of income for harvesters (K., personal communication, February 23, 2022). Sanikiluaq may harvest bears subject to the quota limits, and while non-Inuit residents of Sanikiluaq may also harvest bears, they must first apply for a harvesting licence and species authorization tag. Quotas have been used for 40 years in Sanikiluaq, with a flexible quota system developed and used since 2005 under a Memorandum of Understanding (MOU) between the Government of Nunavut and Sanikiluaq. The flexible quota system allows credits to be carried forward from previous years, with a 2:1 male to female sex harvesting ratio (Sanikiluaq Hunters and Trappers, 2016).

Cultural, Archeological and Paleontological Resources

Cultural and Archeological Resources

In 2013, the Nunavut Planning Commission (NPC) conducted a series of community meetings with Sanikiluaq residents to identify land with cultural importance to help inform the Nunavut Land Use Plan. From these meetings, maps were generated that showed historical campsites, cabins, sod houses, Thule sites, archaeological sites, and burial grounds across the Belcher Islands. According to these maps, the selected site location and its adjacent footprint show no archaeological or cultural grounds (NPC, 2013). However, the maps were hand-drawn and are difficult to read. Therefore, to confirm the results of the NPC meeting, a desktop review was conducted, and no cultural or archaeological areas of importance have been identified to be within or adjacent to the proposed Project footprint. Community input for the site selection of the Project included considerations for avoiding culturally and archaeologically significant sites.

Paleontological Resources

Sanikiluaq is situated on the Belcher Island system, which is comprised of a number of unique landforms and geological formations. Some of the geological formations within the Belcher Island group contain important paleontological resources. The Kasegalik and McLeary formations within the Belcher Supergroup contains microfossils from organisms from the Precambrian period, dating to 1.9 billion years ago, which represent some of the earliest known examples of cyanobacteria fossils found in Canada (Hofmann, 1976).

Individual and Community Wellness

The following section describes individual and community wellness trends in Sanikiluaq, including access to health services, as well as prominent health conditions within the community. Information was gathered primarily through Census Canada data, as well as through primary research conducted in-community.

Health Services

The Sanikiluaq Health Centre and the Community Well-Being Program provide health services to Sanikiluaq residents. The new health centre's primary objectives are to provide acute, chronic, and emergent care, while the Community Well-Being Program provides preventative services for the community. Preventative services include:

- Pre-natal nutrition program.
 - Exercise program (currently on hold due to COVID-19).
- (Hamlet of Sanikiluaq, 2009; M. Rowan, personal communication, February 28, 2022).

The Sanikiluaq Health Centre is equipped with an emergency room, birthing room, an X-ray room, a pediatric room, and negative pressure rooms which can be used to prevent spread of disease and are adapted to pandemic circumstances. The health centre also includes a COVID-19 testing station, several general treatment rooms, a mental health clinic, a permanent pre-natal clinic, and a kitchen for health care staff. Currently, there are no blood transfusions available at the health centre (J. Kelly-Wilson, personal communication, February 28, 2022).

The Sanikiluaq Health Centre was recently opened (February 15, 2022) to replace the old health centre, built in 1984 which required structural updates and increased capacity to serve Sanikiluaq's growing population (Nunavut Bureau of Statistics, 2018). While the old facility provided capacity for a population of 500, the new facility now has enough space to better accommodate the current population of over 800 residents. Staff capacity has not changed since the change to the new building (J. Kelly-Wilson, personal communication, February 28, 2022). Instead, the new facility allows different departments to have their own units with offices and treatment facilities, which allow more services to be provided by existing practitioners at the same time (Sharma, 2020).

The current health centre receives approximately 80-100 patients per month and, according to the head nurse, capacity within the facility has been manageable, although more nurses would always be welcome (J. Kelly-Wilson, personal communication, February 28, 2022).

Additional medical specialists, such as dentists and optometrists, visit the community every two months. A physician who makes referrals and prescribes medications visits the community five days each month (J. Kelly-Wilson, personal communication, February 28, 2022).

The health centre is not equipped to treat serious emergencies and/or surgeries. For such services, patients are flown to Winnipeg to receive treatment. This can take up to 24 hours, and only stable patients are able to be taken by plane to Winnipeg (J. Kelly-Wilson, personal communication, February 28, 2022). Ambulance services are not officially available, but the health Centre collaborates with the RCMP and the Fire Department to transport patients when needed. The governments of Manitoba and Nunavut share an agreement that allows Nunavut residents to receive treatments that are not provided in their local health units (Office of the Auditor General of Canada, 2017).

A Community Well-being Coordinator provides educational and preventative measures for chronic health issues in the community, which includes information sharing, as well as nutrition and exercise programs.

The health centre is open Monday to Friday from 8:00am to 4:30pm. Nurses are also in the health centre on weekends if treatment is needed. The old health centre is currently being used for other social services and office space.

Community Well-Being Index

The Community Well-Being (CWB) index measures well-being for communities across Canada. It has four components: education, labour force activity, income, and housing (ISC, 2019). It is a useful metric for the purposes of this study as it provides a quantitative measure of several socio-economic components that can be compared across communities.

Inuit communities in Nunavut have relatively low CWB indices compared to non-Indigenous Canadians. For example, in 2016, Inuit communities' CWB score was 19% lower, their education score was 22% lower, their labour score was 11% lower, their income score was 10% lower, and their housing score was 35% lower compared to non-Indigenous Canadians (ISC, 2019).

Sanikiluaq's CWB indices are lower than those of other communities in Nunavut, with a 7% lower CWB score, a 6% lower education index, a 7% lower labour index, an 8% lower income score, and a 4% lower housing score (ISC, 2019).

Table 4.13: Sanikiluaq, Nunavut, and Canada Community Well-Being Indices

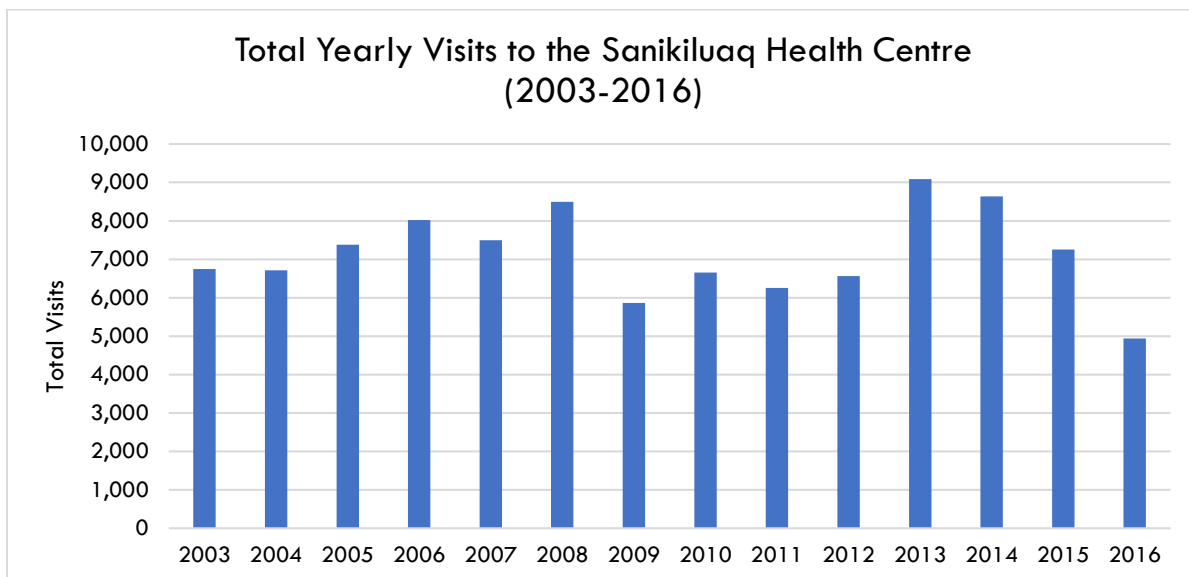
CWB Index Score (%)	Sanikiluaq	Nunavut	Non-Indigenous Canadians
Community Well-Being	52	59	78
Education	28	34	56
Labour	66	73	84
Income	58	66	76
Housing	56	60	95

(ISC, 2019)

Physical Health

Physical health in Sanikiluaq has remained relatively stable in the last ten years. 2016 was the year with the least recorded activity at the health centre with a total of 4,936 visits, averaging 13.5 per day. 2016 had a much lower average number of visits compared to previous years; for example, the health center received 32% fewer visits compared to 2015. Averaging every year surveyed between 2003 and 2016, the health centre, on average, would receive 21 patients per day (Nunavut Department of Health, 2018).

Figure 4.10: Total Yearly Visits to the Sanikiluaq Health Centre (2003-2016)



(Nunavut Department of Health, 2018)

Table 4.14 shows a complete list of visitations by diagnostic category in Nunavut for 2016 and for Sanikiluaq in 2004, 2007, 2010, 2013, and 2016. The percentages of Sanikiluaq visits in 2016 in each category are relatively similar to the Nunavut averages. Sanikiluaq did see a higher percentage of cases in the *signs and symptoms of illness, cause unknown* category with 4% more cases than Nunavut (Nunavut Department of Health, 2018). The most common reason for medical visits in both Sanikiluaq and Nunavut

was for diagnostics including lab exams, counselling, newborn assessments, STI screenings, and wound care/aftercare, which made up 34.9% of visits in Sanikiluaq.

Table 4.14: Sanikiluaq Health Centre Percent of Visitations by Category

Diagnostic Group: Most Common Visitation Categories	Sanikiluaq					Nunavut
	2004 (%)	2007 (%)	2010 (%)	2013 (%)	2016 (%)	2016 (%)
Infectious diseases: viral infection, tuberculosis of the lung, genital yeast infections, viral warts, candida stomatitis (%)	2.2	3.6	2.2	2.0	5.7	4.6
Respiratory system diseases: upper respiratory infection, pharyngitis, lower respiratory infection, COPD, tonsillitis (%)	23.8	15.9	20.7	12.6	13.7	13.4
Endocrine, metabolic nutritional disorders: type 2 diabetes, hyperlipidemia, hypothyroidism, pure hypercholesterolaemia, dehydration (%)	3.6	3.7	4.0	2.4	1.5	2.2
Mental and behavioural disorders: schizophrenia, depression, anxiety, acute and transient psychotic disorder, bipolar affective disorder (%)	3.4	1.6	2.1	6.1	3.9	5.9
Circulatory system diseases: hypertension, cardiovascular disease, congestive heart failure, stroke, atrial fibrillation (%)	15.2	13.8	9.7	3.1	1.6	3.2
Digestive system diseases: periapical abscess, gastro-oesophageal reflux disease (gerd), non-infective gastroenteritis and colitis, constipation, gastritis (%)	7.2	8.5	9.5	4.3	4.3	4.7
Skin and subcutaneous tissue diseases: dermatitis, cellulitis, impetigo, skin infection, cutaneous abscess, furuncle, and carbuncle (%)	6.4	6.6	3.8	3.0	5.4	5.3
Musculoskeletal system diseases: arthritis, backache, pain in lower limb, myalgia, muscle strain (%)	8.9	7.3	5.1	2.1	4.3	4.9
Genitourinary system diseases: urinary tract infection, acute vaginitis, tubulo-interstitial nephritis, amenorrhoea, unspecified lump in breast (%)	4.9	4.1	7.0	5.4	5.9	3.9
Pregnancy, childbirth, and the puerperium: prenatal assessments, spontaneous abortion, threatened abortion, anemia complicating pregnancy, morning sickness (%)	3.8	3.5	4.0	3.0	4.1	3.3
Signs and symptoms of illness, cause unknown: abdominal pain, fever, headache, chest pain, cough (%)	9.1	12.4	11.5	7.9	14.0	10.0
Injuries and poisonings: allergy, open wound of finger, open wound of unspecified body region, unspecified injury, wrist and hand injury (%)	6.9	7.9	7.9	4.0	10.0	7.3
Ear diseases: otitis media, earache, otorrhoea, otitis externa, hearing loss (%)	6.2	2.6	4.5	3.6	3.6	4.1
Nervous system diseases: epilepsy, migraines, insomnia, carpal tunnel syndrome, bell's palsy (%)	2.8	3.8	1.1	0.6	0.6	0.8

Diagnostic Group: Most Common Visitation Categories	Sanikiluaq					Nunavut
	2004 (%)	2007 (%)	2010 (%)	2013 (%)	2016 (%)	2016 (%)
All other diagnoses and factors influencing health status and contact with health services: lab exams, counselling, newborn assessments, STI screenings, wound care/aftercare (%)	7.4	8.5	14.2	33.4	34.9	38.5
Immunizations (%)	5.1	9.0	4.2	6.4	4.2	5.9
Tuberculosis (TB) daily observed therapy (DOT) (%)	0.0	0.2	0.0	7.8	5.1	8.4
TB screening (%)	1.0	0.5	0.2	3.3	2.2	2.4
General medical examination (%)	0.8	0.8	2.0	13.9	5.2	4.2
Family planning (%)	0.9	0.9	1.1	0.8	1.4	1.9
Medicine administration/refill (%)	3.5	1.5	0.4	3.3	1.2	2.6
Well Woman (%)	1.0	0.9	0.9	0.8	0.8	0.5
Well Child (%)	3.0	2.9	2.6	2.5	4.4	3.5

(Nunavut Department of Health, 2018)

Community health centre visits are not measures of disease incidence or prevalence. Instead, visits may indicate demand on local health care services. The total of all the categories does not add up to 100% as patients visiting the hospital for numerous reasons were counted under each relative category. Percentages were then calculated by dividing the number of cases in each category by the total number of visits.

Upon further communication with a Sanikiluaq Health Centre nurse, current health visitations as of February 2022, include the following:

- Alcohol and drug use;
- Domestic abuse;
- Bad nutrition (from Western diet), often seen as gall bladder issues;
- Skin issues due to inadequate living conditions; and,
- Dental issues.

(J. Kelly-Wilson, personal communication, February 28, 2022).

Mental Health

Statistics regarding the state of Sanikiluaq residents' mental health are unknown; however, locals have spoken to media sources regarding the need for increased mental health resources. Sanikiluaq's former MLA, Allan Rumbolt, stated in an interview regarding the new health centre that he hoped the new centre would provide better services. According to Rumbolt, there is always a great need for more mental health in the community, similarly to other northern communities (Sharma, 2020). Another Sanikiluaq resident who ran in the 2021 Nunavut MLA election also stated in an interview that mental health was one of the biggest issues in the constituency and that, "the biggest issues for Nunavut in this election [2021] are mental health and addictions, which could be improved with more housing" (George, 2021).

In an effort to reduce addiction, the community has an alcohol and addictions department with a local counsellor (Hamlet of Sanikiluaq, 2022). Currently alcohol is prohibited in the community, making it illegal to transport it by flight or boat. In 2019, the community held a local plebiscite regarding lifting the alcohol

ban to allow it in small quantities; however, the vote failed with 63% of people voting in support of prohibition (Grandmaison, 2019).

Drinking Water

Sanikiluaq has faced several issues related to the state of drinking water. In June of 2016, residents were advised to not drink the water due to high levels of sodium. The water was deemed sufficient for bathing and cooking, but residents were required to collect bottled water from the community hall for drinking purposes. In August of 2016 however, a boil water advisory was announced due to e-coli contamination. Residents were advised to no longer use the water for cooking, bathing, or brushing teeth without boiling it first and were still required to collect drinking water from the community hall (Arkus, 2016).

In late 2016, the community managed to clear the water of e-coli and installed reverse-osmosis units in each home to remove the salt from the water to make it potable. These reverse osmosis systems are still used community-wide, and the Nunavut government posts official reminders for residents to only consume water from the reverse osmosis systems (Sommerville, 2021). While reverse osmosis makes the water consumable by filtering sodium, it also removes minerals with essential health benefits (Kozisek, 2005).

Water that is filtered in a factory setting is restabilized with nutrients including fluoride, magnesium, and calcium, however home systems do not. According to an article published by the World Health Organization (WHO), “studies show that higher water magnesium is related to decreased risks for Cardiovascular Disease (CVD) and especially for sudden death from CVD. It has also been suggested that intake of water low in magnesium may be associated with a higher risk of motor neuronal disease, pregnancy disorders, sudden death in infants, and some types of cancer. Recent studies suggest that the intake of soft water, i.e. water low in calcium, is associated with a higher risk of fracture in children, certain neurodegenerative diseases, pre-term birth and low weight at birth and some types of cancer” (Kozisek, 2005). As a result, Koziek has recommended that reverse-osmosis water treatment systems should not be a long-term filtration option for individuals (Kozisek, 2005)

COVID-19

Sanikiluaq was the first community in Nunavut to report an active COVID-19 case on November 6, 2020 (Nunavut Department of Health, 2020). As of March 9, 2022, Sanikiluaq had reported a total of 56 historic cases in community and had no current active cases (J. Kelly-Wilson, personal communication, March 11, 2022).

The first vaccine available to residents was Moderna’s SPIKEVAX. As of February 22, 2022, SPIKEVAX remains the only available vaccine for residents over 18, with Pfizer’s Comirnaty vaccine being offered to residents between 5 and 17. Of all the residents above 5 years old, 97% have received their first dose of a COVID-19 vaccine, 63% have received their second dose, and 33% of all residents above 12 have received a booster as of February 22, 2022 (Nunavut Department of Health, 2022).

COVID-19 restrictions in Nunavut are revised every two to four weeks by the Chief Public Health Officer (CPHO). Restrictions differ per community and are based on three factors: 1. if there are no active COVID-19 cases in the community, 2. if there is an introduction of COVID-19 to the community, and 3. If there is an active outbreak of COVID-19 in the community. Sanikiluaq was the last community in Nunavut to implement the Government of Nunavut’s COVID-19 restrictions (A. Crabb, personal communication, February 25, 2022). As of February 21, 2022, restrictions in Sanikiluaq included gatherings of up to five additional guests in a household; indoor gatherings of up to 10 in a non-dwelling; indoor conference gatherings at 25% capacity up to 25 people; arenas, places of worship, libraries, and museums to operate at 25% capacity; a mandatory mask mandate; restaurants open for take-out only; long-term care facility residents can only receive one guest that is immediate family; and non-essential travel is strongly discouraged (Nunavut Department of Health, 2022). Due to the delay in restriction implementation, many community

members have felt a sense of insecurity regarding measures being taken to protect the community (A. Crabb, personal communication, February 25, 2022).

COVID-19 has also placed strain on the health care services provided in Sanikiluaq. As of April 15, 2021, all non-urgent medical travel in the Qikiqtani region, all non-urgent bloodwork, and all visits by Iqaluit physicians were postponed, and lab services were reduced (Nunavut Department of Health, 2021). By December 21, 2021, services at the Sanikiluaq Health Centre were further restricted to emergency services only, and residents were advised to call the health centre before arriving (Nunavut Department of Health, 2021).

Community Infrastructure and Public Service

Several services in Sanikiluaq are provided through funding from the Government of Nunavut and/or the Government of Canada, including a health centre, RCMP, a fire department, and other support services, such as a pre-natal nutrition program, community justice support, drug and alcohol support, and recreation activities (Hamlet of Sanikiluaq, 2022).

Other services include a community radio located in the community centre. The community centre is also an important resource for Sanikiluaq residents and is used for meetings, sports, and school events. Sanikiluaq also has a Canada Post office located in the Northern Store, and two ATM machines located in the Co-op and the Northern Store. No bank currently exists in Sanikiluaq (Hamlet of Sanikiluaq, 2022).

Groceries can be bought at the Co-op and the Northern Store, which are subsidized by the Government of Canada to remain affordable (Hamlet of Sanikiluaq, 2022) although prices remain much higher than in southern Canada as shown above in Table 4.5. In the past, a community freezer was also available to store and share traditional foods harvested from the land. This freezer is currently closed due to unmanageable operational costs (J. Heath, personal communication, February 21, 2022).

There are currently five new infrastructure projects occurring in Sanikiluaq which are all in early stages of development. Table 4.15 lists each project, their proponent, and their estimated completion date.

Table 4.15: Current Infrastructure Projects

Project	Proponent	Estimated Completion Date
Four health centre staff housing units to be built beside the Sanikiluaq Health Centre	Nunavut Housing Corporation (NHC)	October 2022
Construction of the new Local Housing Authority (LHO) office	Nunavut Housing Corporation (NHC)	September 2023
Construction of a new Sanikiluaq municipal office	Community Government Services	March 2023
Reconstruction of Amaulik Inns North Hotel	Inns North and Co-op	Summer 2022
Construction of a new research centre (will include: interpretive centre, lab, offices for Hunters and Trappers Association, accommodations for researchers, eider economy space for processing and sewing duck skins, garage for equipment and tools)	Arctic Eider Society	December 2022

As Sanikiluaq's population is growing, some of the current infrastructure is reaching its maximum capacity. The Hamlet of Sanikiluaq is currently striving to upgrade the local landfill, create a new sewage lagoon, and build a new water treatment facility; however, these projects remain aspirations as planning and development have yet to begin (A. Rumbolt, personal communication, February 25, 2022).

5. Project Interactions

A summary of VSEC selection and pathway analysis is presented in Table 5.1. As identified in Section 4.1, VSECs were determined through baseline research, consultation and engagement with Sanikiluaq residents, landowners, and stakeholders, publications provided by regulatory authorities including the NIRB, and the professional judgment of the assessment team. Table 5.1 presents each VSEC and identifies interactions with the Project and rationale for inclusion as a VSEC. This table also presents the potential effects for each VSEC. These potential effects are brought into the socio-economic impact assessment, presented in Section 6.0.

Table 5.1: Summary of VSEC Selection and Pathway Analysis

Potential Valued Socio-Economic Components (VSEC) Based on NIRB Guidelines	Potential Indicators Identified	Pathway		Valued Socio-Economic Component (VSEC) Confirmed		Interactions with the Project and Rationale	Potential Effects
		Yes	No	Yes	No		
Economic Development and Opportunities	Energy Affordability and Commercial Fisheries	X		X		Energy prices are very high in Sanikiluaq due to being 100% diesel powered. Many businesses and services could profit from lower energy costs.	Electricity subsidy for Sanikiluaq residents, businesses, and the Hamlet of Sanikiluaq through the community enhancement fund.
	Infrastructure Development	X		X		Infrastructure development is currently not very affordable in Sanikiluaq, and as a non-taxed based community the Hamlet does not have the revenue to build their own infrastructure.	Increase opportunity for community-led infrastructure development through the community enhancement fund.
Business, Employment, and Income	Business Contracts and Potential for New Business Development	X		X		Local businesses and contractors in Sanikiluaq are able to partner with other projects by subcontracting their employees, thereby improving company profits and providing more jobs for local residents.	Increased contracting and procurement opportunities. Increased business in gravel extraction from increased Project demand.

Potential Valued Socio-Economic Components (VSEC) Based on NIRB Guidelines	Potential Indicators Identified	Pathway		Valued Socio-Economic Component (VSEC) Confirmed		Interactions with the Project and Rationale	Potential Effects
		Yes	No	Yes	No		
	Employment	X		X		As of February 2022, 300 local working-aged residents are unemployed, and many are looking for jobs. Many have mentioned interest in finding a job with the Project.	Increased employment from direct, indirect, and induced employment in Sanikiluaq.
	Income Levels	X		X		Income levels in Sanikiluaq are below the territorial average due to unemployment rates, which has been affecting spending ability within the community.	Increased personal spending by Project workers during construction.
Education and Training	Availability of training programs	X		X		Currently, no specific training opportunities for specialized construction work are available in Sanikiluaq.	Increased local training opportunities.

Potential Valued Socio-Economic Components (VSEC) Based on NIRB Guidelines	Potential Indicators Identified	Pathway		Valued Socio-Economic Component (VSEC) Confirmed		Interactions with the Project and Rationale	Potential Effects
		Yes	No	Yes	No		
Traditional Activities	Hunting and Egg Gathering	X		X		Currently, community members harvest wildlife and gather eggs in all parts of the Belcher Islands. While some areas (such as near the proposed project location) are used less frequently, wildlife and eggs are found here, and harvested on occasion.	<p>Reduced availability of wildlife/eggs due to noise.</p> <p>Degradation of harvesting experience for wildlife/eggs due to visual effect/noise</p> <p>Reduced availability of wildlife/eggs due to habitat destruction from clearing/grubbing.</p> <p>Reduced availability of wildlife/eggs due to barrier effect, blade strikes.</p>
	Fishing	X		X		Community members rely on fish as part of their diet during the summer (fishing) months. This traditional food needs to be free from contaminants and remain abundant to support human health.	<p>Destruction of freshwater fish habitat from spills, infilling, and sediment during construction.</p> <p>Reduced availability/quality of fish due to spills.</p> <p>Reduced availability of fish due to destruction of habitat.</p>

Potential Valued Socio-Economic Components (VSEC) Based on NIRB Guidelines	Potential Indicators Identified	Pathway		Valued Socio-Economic Component (VSEC) Confirmed		Interactions with the Project and Rationale	Potential Effects
		Yes	No	Yes	No		
	Plants, Berries and Medicines	X		X		Harvesting sites are located near the Project footprint and community members rely on their cleanliness of these plants and medicines as parts of the summer diet.	<p>Reduced access to harvesting areas during road construction.</p> <p>Degradation of plants/berries from dust/emissions.</p> <p>Noise from turbines degrading harvesting experience.</p> <p>Improved access to harvesting areas with upgraded road.</p>
Cultural, Archeological and Paleontological Resources	Cultural, Archaeological, Paleontological Resources	X			X	No past cultural, archaeological, or paleontological studies have been done in the Project area, and therefore it cannot be confirmed that no such resources exist.	Destruction of/damage to undiscovered archeological artifacts of cultural importance.
Individual and Community Wellness	Health Services	X		X		The number of health care staff is limited. Additionally, health facilities in Sanikiluaq are lacking immediate emergency treatments such as operations and blood infusions. Patients need to be flown to Winnipeg to receive the treatment which may take up to 24 hours, if the patient is stable enough to leave the community.	<p>Demand on, and capacity of, Sanikiluaq Health Centre.</p> <p>Demand on, and capacity of, emergency medical response services.</p>

Potential Valued Socio-Economic Components (VSEC) Based on NIRB Guidelines	Potential Indicators Identified	Pathway		Valued Socio-Economic Component (VSEC) Confirmed		Interactions with the Project and Rationale	Potential Effects
		Yes	No	Yes	No		
	Health and Well-being	X		X		<p>Air and noise from project construction activities and from the operation of the wind turbines could increase health risks to residents.</p> <p>There is a potential for non-local workers to transmit viruses and diseases to local residents.</p> <p>Currently, drug and alcohol use is a prominent issue in the community.</p>	<p>Deterioration of health from Project noise and dust.</p> <p>Increased rate of viruses and diseases in local residents.</p> <p>Increased substance abuse in the community as a result of increased substance imports by non-local workers.</p>
	Gender Equity and Language	X		X		<p>Currently, the two main languages spoken in Sanikiluaq are English and Inuktitut. Translation is often required for members in the community who only speak Inuktitut.</p> <p>Currently, more men are working in the construction industry than women. Women and other vulnerable and/or marginalized people may have limited access to Project employment opportunities.</p>	Barriers to employment due to language, sex, sexual orientation.

Potential Valued Socio-Economic Components (VSEC) Based on NIRB Guidelines	Potential Indicators Identified	Pathway		Valued Socio-Economic Component (VSEC) Confirmed		Interactions with the Project and Rationale	Potential Effects
		Yes	No	Yes	No		
Community Infrastructure and Public Service	Drinking Water	X		X		Current drinking water is sourced from a lake that is approximately 4 km away from the Project site. The Project footprint is not within the drinking water source watershed, although there are a few locations where the access road crosses into the drinking water watershed.	Contamination of drinking water from leaks, dust and spills during construction. Contamination from oil leaks from turbine operation.
	Cultural Services	X		X		Currently, no cultural services exist due to high energy costs.	Increased cultural services due to increased affordability of energy.
	Road Access	X		X		The existing trail that will be expanded through the Project is used to access traditional areas for hunting purposes, and access is relied on by several community members for this reason.	Restriction of land access for hunting from existing trail during construction activities Improved access during operations adds to existing road network in the community.
	Energy Reliability / Resiliency	X		X		Currently, energy availability is fixed and limits community growth. Additionally, having only one energy source in the community (diesel fuel) creates market vulnerability should diesel prices increase.	Improved community electricity reliability and resiliency.

Potential Valued Socio-Economic Components (VSEC) Based on NIRB Guidelines	Potential Indicators Identified	Pathway		Valued Socio-Economic Component (VSEC) Confirmed		Interactions with the Project and Rationale	Potential Effects
		Yes	No	Yes	No		
	Housing and Temporary Accommodations	X		X		There are approximately 28 non-local workers that will require temporary accommodations which are limited in Sanikiluaq. Local housing availability is limited, and crowding is common.	Increased demands for temporary housing and hotel accommodations.
	Household Affordability	X		X		Currently, residents are paying high prices for electricity and heating, derived from diesel fuel.	Reduction of electricity costs for households in Sanikiluaq through the community enhancement fund.
	Safety, Crime and Security	X		X		Vandalism is an on-going issue in the community mainly as a result from bored youth. Reported vandalism includes rock throwing at community windows, and rifle target practice in more rural parts of town.	Vandalism and possible destruction of wind turbines, particularly with individuals using wind turbines for target practice.

5.1. Impact Assessment Methods

The physical, biological, and human environment valued components that could be impacted by Project activities, either in the construction, operation, or decommissioning phases, and that are shown in the interactions table in section 5.1 will be brought forward into the impact assessment. Those that have no potential for interactions with Project activities in any phase will be screened out of the impact assessment.

This section presents a method by which an assessment of the significance of residual Project impacts is determined (following application of recommended mitigation measures) on the physical, biological, and human environment valued components. VC/VSECs that are scoped into the assessment, as well as the spatial and temporal boundaries used, are described section 4. The methods to characterize residual effects are also used in the cumulative effects assessment in section 7.

Table 5.2 provides definitions for the following assessment criteria:

Direction of the residual effect: positive, neutral, and negative. If the direction of the effect is neutral or positive there will be no further characterization of the effect.

Geographic extent: footprint, local, regional, territorial, and national. Cumulative impacts are assessed using reasonably foreseeable projects occurring within the region (Belcher Island system).

Temporal context: including the duration (period of the event that causes the impact); frequency (how often the event that causes an effect occurs), and reversibility (if the impact can be reversed with time).

Magnitude: negligible, low, medium, or high.

Likelihood: whether the residual effect is likely to occur.

Confidence: the certainty of the assessment based on a level of understanding of the cause-effect relationships.

Table 5.2: Impact Assessment Criteria Definitions

Assessment Criteria		Definition
DIRECTION – of the residual effect		
Positive		Residual effect is predicted to have a net benefit to the VSEC.
Neutral		Residual effect is predicted to have no net benefit or loss to the VSEC.
Negative		Residual effect is predicted to be a net loss or a detriment to the VSEC.
GEOGRAPHIC EXTENT - Location of the Residual Effect		
Footprint		Within 5 metres of the wind turbine site, transmission line corridor and/or battery storage facility.
Local		Impact extends to the entire Sanikiluaq community.
Regional		Impact extends to the Belcher Island system.
Territorial		Impact extends to the Nunavut territory.
National		The area extending beyond Nunavut but confined to Canada.
TEMPORAL CONTEXT		
Duration – period of the event causing the effect	Immediate	Event is limited to less than or equal to two days during either the construction phase or operations phase.
	Short-term	Event occurs during the construction phase or is completed within any 1 year during the operations phase.

Assessment Criteria		Definition
	Long-term	Ongoing event that is initiated during the construction phase and extends beyond the first year of the operations phase or is initiated during the operations phase and extends for the life of the Project.
Frequency – how often would the event that caused the effect occur	Accidental	Event occurs rarely over assessment period.
	Isolated	Event is confined to a specified phase of the assessment period.
	Periodic	Event occurs intermittently but repeatedly over the assessment period.
	Continuous	Event occurs continually over the assessment period.
Reversibility – period of time over which the residual effect extends	Reversible	Residual effect limited to the construction or operations phase.
	Permanent	Residual effects are irreversible.
MAGNITUDE – of the Residual Effect		
Negligible		No detectable change from existing (baseline) condition and does not impact community or individual livelihoods.
Low		Change is detectable but has no effect on the human environment beyond that of an inconvenience or nuisance value. Impacts the livelihoods of a few individuals.
Medium		Change is detectable and results in moderate modification in the human environment. Impacts the livelihoods of several families.
High		Change is detectable and is large enough to result in a severe modification in the human environment. Impacts the livelihoods of more than half of the community.
LIKELIHOOD – of the Residual Effect		
High		Likely
Low		Unlikely
CONFIDENCE – Degree of Certainty Related to Significance Evaluation		
Low		Determination of significance based on incomplete understanding of cause-effect relationships and incomplete data pertinent to the VSEC.
Moderate		Determination of significance based on good understanding of cause-effect relationships using data from outside the Project area or incompletely understood cause-effect relationships using data pertinent to the VSEC.
High		Determination of significance based on good understanding of cause-effect relationships and data pertinent to the VSEC.

The socio-economic impact assessment and in the biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions provide text descriptions, rationale and summary tables of the potential impact on each VC/VSEC, the recommended mitigation measures (for adverse impacts) or enhancement measures (for positive impacts) and the resulting residual effect after the recommended mitigation/enhancements are applied.

The potential residual effects are then characterized based on the criteria in Table 5.1. The significance of each impact is then given as either significant or not significant. A residual human environment effect is considered **significant** if the effect is predicted to be:

- high magnitude, high probability, reversible and regional, territorial or national in extent and cannot be technically or economically mitigated; or
- high magnitude, high probability, long-term or permanent reversibility, within any spatial boundary and cannot be technically or economically mitigated.

The cumulative effects assessment methods are described in detail in section 7 and will assess the additive effects of the Project and other past, present, and future foreseeable physical activities on any negative residual effects regardless of their significance.

A summary of all physical and biological impacts is presented in the biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions.

6. Socio-Economic Impact Assessment

The following section includes the impact assessment for the socio-economic conditions identified in the baseline study and is based on the resulting valued socio-economic components (VSECs). The impact assessment includes both positive and negative effects potentially resulting from the Project and include mitigation and/or enhancement measures. Any negative residual effects are then given a significance evaluation as is outlined in the methodology. Positive residual effects have not been included in the significance evaluation as they pose no concern for the well-being of the community. Based on the significance evaluation conducted in this section, no residual effects have been deemed significant.

6.1. Economic Development Opportunities

This subsection discusses the potential Project-related effects on economic development and opportunities. Economic development and opportunities were identified through the baseline and community input as one of the primary incentives to develop the Project, due to the potential for positive effects to the community. These effects include the establishment of a community enhancement fund which can be used for economic development and other opportunities at the discretion of the community. The community enhancement fund may help to stimulate future proposed commercial activities, such as sustainable commercial fisheries which have been proposed for the community in the coming years. Other economic opportunities include increased infrastructure development, for example, running the community freezer, which has been shut off due to energy costs in the past. These effects are all projected to be positive.

Table 6.1 presents potential effects associated with the construction and operations of the Project on economic development and opportunities. These interactions are based on the secondary research from online sources, primary research through in-community consultation and engagement, and the professional experience of the assessment team.

Table 6.1: Potential Project Effects on Economic Development Opportunities

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
Energy Affordability and Commercial Fisheries	Electricity subsidy for Sanikiluaq residents, businesses, and the Hamlet of Sanikiluaq through the community enhancement fund.	If desired by committee, provide support and guidance on how the fund could be used to provide electricity subsidies.	Energy related cost savings to Sanikiluaq residents that can help support economic growth.
Infrastructure Development	Increase opportunity for community-led infrastructure development through the community enhancement fund.	If desired by committee, provide support and guidance on how the fund could be used to support infrastructure projects.	Increased opportunities for local infrastructure projects helping to drive the economy.

Because all effects were deemed positive, no significance evaluation is necessary for this VSEC.

Business, Employment, and Income

This subsection discusses the potential Project related effects on business, employment, and income. Most effects on business, employment, and income are projected to be positive during Project construction and operations. The positive residual effects include increased employment opportunities in Sanikiluaq (up to 26 local employees for the construction phase and 1-3 for the operations phase), increased personal

spending by Project workers during construction and associated increased opportunities for businesses, and increased contracting and procurement opportunities with construction companies and the gravel quarry, for example. Increased employment will increase income and could therefore improve the quality of life for employees and their families. Income may be used to support purchasing equipment for traditional activities necessary for sustenance (such as buying a new snow machine or firearms), and/or support well-being of families if income is used to purchase items that improve their quality of life such as household items and groceries.

Table 6.2 presents potential effects associated with the construction and operations of the Project on business, employment, and income. These interactions are based on the secondary research from online sources, primary research through in-community consultation and engagement, and the professional experience of the assessment team.

Table 6.2: Potential Project Effects on Business, Employment, and Income

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
Business Contracts and Potential for New Business Development	Increased contracting and procurement opportunities.	Prioritize hiring local contractors and utilizing local businesses. Ensure contracting and procurement opportunities are communicated to Sanikiluaq residents.	Increased local contracting and procurement opportunities.
	Increased business in gravel extraction from increased Project demand.	Communicate gravel requirements to the Hamlet of Sanikiluaq six months prior to construction start to ensure adequate supply.	Increased business and contracting opportunities in the civil works sector.
Employment	Increased employment from direct, indirect, and induced employment in Sanikiluaq (up to 26 local employees for the construction phase and 1-3 for the operation phase).	Ensure employment opportunities and the necessary training or contracting requirements are communicated to Sanikiluaq residents. Collaborate with local contractors to host a workshop to recruit local workers. Ensure contractors prioritize hiring local residents to optimize the benefits of local income and spending.	Increased employment opportunities in Sanikiluaq.
Income Levels	Personal spending by Project workers during construction and operation	No mitigation measures identified.	Increased personal spending by Project workers and associated increased opportunities for businesses.

Because all effects were deemed positive, no significance evaluation is necessary for this VSEC.

Education and Training

This subsection discusses the potential Project related effects on education and training. Increase in local training to take on Project employment was identified as a potential positive effect of the Project. Currently, Sanikiluaq has low employment rates which could be improved in the short-term through construction jobs and longer-term in operations and maintenance jobs. Long-term job opportunities provide incentive for residents to complete high school and to seek secondary education and training in trades and other fields that are beneficial to the Project, for example, a community liaison could be educated in communications, community relations, or similar.

An enhancement to this positive effect is to collaborate with local construction companies to provide on the job training and sustain that training throughout the life of the Project. The residual effect is positive as it results in skills training for Sanikiluaq residents.

Table 6.3 presents potential effects associated with the construction and operations of the Project on education and training. These interactions are based on the secondary research from online sources, primary research through in-community consultation and engagement, and the professional experience of the assessment team.

Table 6.3: Potential Project Effects on Education and Training

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
Skills training Programs	Increased local training opportunities	Provide training opportunities for a local long-term operator(s). Ensure contractor(s) provides on the job training if required during construction phase.	Enhancement of skills training for Sanikiluaq residents.

Because all effects were deemed positive, no significance evaluation is necessary for this VSEC.

Traditional Activities

Noise impacts on animal abundance

Hunting and egg gathering are potentially impacted by the location, sound and visual impacts of Project infrastructure, namely the road, transmission lines, and turbines. The turbines produce sound when in operation, which could have several impacts. Sound from turbine operation, and the visual impact of the turbines on the ridgeline may cause animals that are harvested by the community, or animals that produce eggs that are harvested by the community, to avoid the Project area thus reducing their availability to community harvesters. The sound produced by the turbines and the visual impact may also degrade land users' experience, causing them to avoid this area for harvesting, particularly where the sound will be the greatest near the turbines.

To mitigate impacts on harvesting QBDC worked with the HTA to select a site that holds lower value for harvesting than other areas near Sanikiluaq. Furthermore, local residents noted that the access road provides better all-season access to hunting and harvesting areas. Another mitigation measures is including turbine sound level as a factor in the selection criteria for turbines. Turbine operational noise cannot be fully mitigated and therefore turbines will produce some noise during the 30-year operations phase, which will remain as a potential residual effect on animal abundance in the vicinity of the wind turbines. The potential residual effect of these impacts was deemed to be negative, local in extent, long-term in

duration, continuous in frequency, reversible at the end of the Project life, low in magnitude, and likely. The confidence in the potential residual effect is low, as it is difficult to predict how harvesters, animals, and birds will respond to the noise and visual impacts of the Project. The potential residual impacts to the availability of harvested animals and eggs, and to harvesters' experience in the Project area was thus deemed to be not significant.

Habitat loss and bird strike impacts on animal / resource abundance

The Project construction and operation phases may also impact traditional activities through the reduced availability of wildlife/eggs due to habitat loss from clearing and grubbing, barrier effects (project components impeding animals' natural movements) of the turbines at the Project site, and from blade strikes on birds. The biophysical impact assessment prepared by Wood Environment and Infrastructure Solutions provides additional details regarding these Project impacts on terrestrial wildlife and bird habitat, including feeding, breeding, and resting areas that may be degraded or lost. Reduced animal/egg abundance impacts the availability of these resources for harvesting and in turn could negatively impact diet, health and well-being of harvesters in the region.

Mitigation measures for these impacts include Project team monitoring of construction activities for protection of wildlife and halting of activities if at risk of environmental disturbance and limiting activities to Project footprint, where possible. There are expected to be some impacts to bird and terrestrial fauna habitat from grubbing and clearing. The potential residual effect on traditional harvesting activities from habitat loss causing reduced wildlife abundance due to clearing and grubbing were deemed to be negative, within the Project footprint, long-term in duration, continuous in frequency, permanent, low in magnitude, unlikely and with a moderate level of confidence. It was determined that the residual impact on traditional harvesting due to habitat loss from Project activities was not significant. The potential residual effect on traditional harvesting from the barrier effect of the turbines on wildlife and blade strikes of birds was deemed to be negative, local in extent, long-term in duration, continuous in frequency, reversible at the end of Project operations, low in magnitude, highly likely, with a moderate level of confidence. It was determined that the potential residual impact on traditional harvesting due to the barrier effect and blade strikes of the Project was not significant.

Fishing Impacts

Potential effects on traditional activities related to fish and fishing activities include loss of fish habitat, and reductions in the quantity and quality of harvested fish. Construction activities may result in the reduced availability and quality of fish either directly or from the destruction of fish habitat from spilled contaminants like fuel and oil, infilling, and release of sediments into freshwater bodies adjacent to and downstream of project components, which are used for fishing activities. These include several small lakes along the proposed Project road, as well as Sanikiluaq Lake, the community's drinking water source. The Project footprint is not within the watershed of the drinking water source for Sanikiluaq. There are however some sections of the Project access road that cross into the watershed of Sanikiluaq Lake. The biophysical impact assessment outlines details of these possible impacts on fish habitat and fish, finding the impact to be low. These findings were taken into consideration when determining how this would impact traditional activities related to fish and fishing.

Mitigation measures for these potential impacts include employment of best practices techniques for culverts at water bodies/water crossings, inclusion of sediment barriers at water crossings/vulnerable waterbodies and the development and implementation of a spill prevention and response plan. These mitigation measures should greatly lower the impact of Project activities on fish and fishing, but some potential residual effects will remain. The potential residual effect of contaminant spills, infilling, and the release of sediment on the availability of fish was determined to be negative, local in extent, short-term in

duration, accidental in frequency, permanent, medium in magnitude, low in likelihood, with moderate level of confidence. The potential residual effects were determined to be not significant.

Plants, Berries and Medicine Harvesting Impacts

Potential effects on traditional activities related to plants, berries, and medicines include reduced access to harvesting areas during road construction, degradation of plants/berries due to dust/emissions from Project activities, degradation of land users' experience due to noise from Project operations, and destruction of areas that may be used for harvesting within the Project footprint. During operations, the access road will improve access to plant harvesting areas which was considered positive by local residents.

Mitigation measures to reduce the potential effects include providing notice to the community of when the access trail will be closed for construction and providing direction on a safe alternative passage to harvesting areas by four-wheeler, snow machine, encouraging harvesting in areas that may be affected by road closure prior to construction activities, and the identification and protection of sensitive/high productivity areas.

Due to the unavoidable loss of plant habitats needed for Project infrastructure placement, the potential residual effects are still predicted after the application of mitigation measures. The potential residual effect on plant harvesting from loss of harvesting areas, dust deposition on plants, and noise (on harvesting experience), during construction was deemed to be negative, local in extent, short-term, isolated in frequency, irreversible since the loss of harvesting areas continues for the life of the Project, low in magnitude, highly likely, with a low level of confidence. This was determined to be a not significant effect.

Table 6.4 presents potential effects associated with the construction and operations of the Project on traditional activities. These interactions are based on the secondary research from online sources, primary research through in-community consultation and engagement, and the professional experience of the assessment team.

Table 6.4: Potential Project Effects on Traditional Activities

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
Hunting and Egg Gathering	Reduced availability of wildlife/eggs due to noise.	Turbine noise levels will be a factor in the selection criteria for turbines.	Reduced availability of wildlife/eggs.
	Degradation of harvesting experience for wildlife/eggs due to visual effect/noise.	Turbine noise levels will be a factor in the selection criteria for turbines.	Avoidance of harvesting areas due to visual and noise effects.
	Reduced availability of wildlife/eggs due to habitat destruction from clearing/grubbing.	Project team monitoring of construction activities for protection of wildlife and halting of activities if at risk of environmental disturbance. Limiting activities to Project footprint where possible.	Habitat loss due to clearing and grubbing.
	Reduced availability of wildlife/eggs due to barrier effect, blade strikes.	Limiting activities to Project footprint where possible.	Reduced availability of wildlife/eggs.
Fishing	Destruction of freshwater fish	Project team monitoring of construction activities for protection of	Loss of fish habitat during construction activities.

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
	habitat from spills, infilling, and sediment during construction.	wildlife and halting of activities if at risk of environmental disturbance (ie. spill). Employ best practice techniques for culverts at water bodies/water crossings. Inclusion of sediment barriers at water crossings/vulnerable waterbodies.	
	Reduced availability/quality of fish due to spills.	Project team monitoring of construction activities for protection of wildlife and halting of activities if at risk of environmental disturbance (ie. spill). Implementation of spill prevention measures (barriers, emergency spill kits) at water crossings. Develop and implement spill prevention and response plan.	Reduced fish availability in the event of a spill during construction.
	Reduced availability of fish due to destruction of habitat.	Project team monitoring of construction activities for protection of wildlife and halting of activities if at risk of environmental disturbance. Silt/sediment barriers to protect sensitive areas from runoff.	Fish habitat destruction and decreased availability during construction.
Plants, Berries and Medicines	Reduced access to harvesting areas during road construction.	Provide notice to community of when access trail will be closed for construction, and provide direction on safe alternative passage to harvesting areas by four-wheeler, snow machine etc. Encourage harvesting in areas that may be affected by road closure prior to construction activities.	Reduced access to harvesting areas during road construction. Improved access during operations.
	Degradation of plants/berries from dust/emissions.	Encourage harvesting of areas that may be affected by dust/emissions prior to construction activities. Encourage harvesting prior to construction activities to avoid contamination from dust/emissions. Identify and protect sensitive/high productivity areas.	Destruction of plants and berries.
	Noise from turbines degrading harvesting experience.	Turbine noise levels will be a factor in the selection criteria for turbines.	Avoidance of harvesting areas.
	Improved access to harvesting areas with upgraded road.	None identified.	Improved access to harvesting areas with upgraded road.

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
	Destruction of harvesting areas within Project footprint.	Restrict activities to Project footprint. Identification and protection of sensitive/high productivity areas.	Loss of harvesting areas.

Table 6.5 provides a summary of the significance evaluation of the potential residual effect of the construction and operations of the Project on traditional activities.

Table 6.5: Significance Evaluation of Potential Project Effects on Traditional Activities

Potential Residual Effect	Direction	Geographic Extent	Duration	Frequency	Reversibility	Magnitude	Likelihood	Confidence	Significance
Reduced availability of wildlife/eggs	Negative	Local	Long-term	Continuous	Reversible	Low	High	Low	Not significant
Avoidance of harvesting areas due to visual and noise effects	Negative	Local	Long-term	Continuous	Reversible	Low	High	Low	Not significant
Habitat loss due to clearing and grubbing	Negative	Footprint	Long-term	Continuous	Permanent	Low	Low	Moderate	Not significant
Reduced availability of wildlife/eggs due to barrier effect and blade strikes	Negative	Local	Long-term	Continuous	Reversible	Low	High	Moderate	Not significant
Loss of fish habitat during construction activities	Negative	Local	Short-term	Accidental	Permanent	Medium	Low	Moderate	Not significant
Reduced fish availability in the event of a spill during construction	Negative	Local	Short-term	Accidental	Permanent	Medium	Low	Moderate	Not significant
Fish habitat destruction and decreased availability	Negative	Footprint	Short term	Isolated	Permanent	Medium	Low	Moderate	Not significant

Potential Residual Effect	Direction	Geographic Extent	Duration	Frequency	Reversibility	Magnitude	Likelihood	Confidence	Significance
during construction									
Reduced access to harvesting areas during road construction	Negative	Local	Short-term	Isolated	Reversible	Low	High	Low	Not significant
Destruction of berries and plants	Negative	Local	Short-term	Periodic	Reversible	Low	High	Low	Not significant
Avoidance of harvesting areas	Negative	Local	Long-term	Continuous	Reversible	Low	High	Moderate	Not significant
Loss of harvesting areas	Negative	Footprint	Long-term	Continuous	Reversible	Low	High	High	Not significant

The following potential residual effects were deemed “positive” and therefore not carried through in the significance rating:

- Improved access to harvesting areas with upgraded road

Cultural, Archeological, and Paleontological Resources

During Project siting, the public and stakeholders were engaged to ensure the Project location avoided sensitive areas and valued components as much as possible. This included considerations for cultural, archaeological, and paleontological resources. However, there remains a possibility that cultural, archaeological, and paleontological resources remain undiscovered in the Project area since it has never been subjected to an archaeological assessment. These resources could be damaged or destroyed during the Project construction phase. To mitigate this potential effect, the Project team will monitor construction areas for cultural, archaeological, and paleontological resources and, if found, halt construction activities until a licensed archaeologist can assess the area and provide recommendations to prevent damage or destruction. After mitigation is applied, the destruction of/damage to archeological artifacts of cultural importance could still occur. This potential residual effect was deemed to be negative, within the Project footprint, long-term, accidental in frequency, permanent, medium in magnitude, low in likelihood, with a moderate level of confidence. This potential effect was determined to be not significant.

Table 6.6 presents potential effects associated with the construction and operations of the Project on cultural, archaeological, and paleontological resources. These interactions are based on the secondary research from online sources, primary research through in-community consultation and engagement, and the professional experience of the assessment team.

Table 6.6: Potential Project Effects on Cultural, Archaeological, and Paleontological Resources

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
Cultural, Archaeological, Paleontological Resources	Destruction of/damage to undiscovered archeological artifacts of cultural importance.	Project team monitoring of construction activities for protection of archaeological resources, and halting activities if at risk of disturbance.	Destruction of/damage to archeological artifacts of cultural importance.

Table 6.7 provides a summary of the significance evaluation of the potential residual effect of the construction and operations of the Project on cultural, archaeological and paleontological resources.

Table 6.7: Significance Evaluation of Potential Project Effects on Cultural, Archaeological, and Paleontological Resources

Potential Residual Effect	Direction	Geographic Extent	Duration	Frequency	Reversibility	Magnitude	Likelihood	Confidence	Significance
Destruction of /damage to archeological artifacts of cultural importance	Negative	Footprint	Long-term	Accidental	Permanent	Medium	Low	Moderate	Not significant

Individual and Community Wellness

This subsection discusses the potential Project related effects on individual and community wellness. These include potential effects on health services, health and well-being and gender equity, and language. In this context, health and well-being refers to physical, mental, emotional, and spiritual health and well-being.

Health Services

The Project has the potential to affect demand on and capacity of the Sanikiluaq Health Centre and emergency medical response services. With up to 28 workers in a construction setting, injury is always possible. If there are multiple injuries at a time that require medical attention or emergency response, local health care services may be overwhelmed. While emergency air lift services are available for Sanikiluaq patients, these services may only arrive within 24 hours, and only stable patients can be transported by air to the nearest hospital in Winnipeg. This poses a risk for seriously injured patients who require immediate medical attention from a hospital, such as surgery or blood transfusion (neither of which are available in Sanikiluaq).

Mitigation measures for this potential effect include sharing health and safety plans with the local Health Centre, ensuring strict adherence to all WSCC requirements when on site, and consulting with Sanikiluaq HTA if there is a concern of polar bears in the area and hiring a bear monitor if needed. Lastly, contractors will be required to provide training, during project orientation, to the workforce on safety, specifically contextual to the climate and weather conditions. The potential residual effects are deemed to be negative, experienced locally as any impact will be contained on the job site or at the health centre in Sanikiluaq. The potential residual effect is also expected to occur on an immediate, accidental basis, and is expected to be reversible following construction. The magnitude of the residual impact is expected to be low, with a low likelihood and a high level of confidence. The final rating is deemed not significant.

Health and Well-being

The Project has the potential to increase dust and exhaust emitted from vehicles and heavy equipment during Project construction. This potential effect could result in sensory disturbances for construction workers as a result of air emissions, noise, and visual disturbances. Due to the municipality's 4.5 km distance from the construction site, residents will not be likely to experience disturbances from dust, emissions or visual impacts. Additionally, with up to 28 employees hired for the Project during construction (June 2023 - June

2024) with the peak occurring in the September to October 2023 timeframe, the impact of dust and emissions in the community during travel is not expected to be large enough to have a measurable impact on community health and well-being.

Mitigation measures for on-site disturbances include adhering to speed limits and restricting idling, when possible, having a contractual obligation for contractor(s) to employ best practices to reduce dust such as not overloading trucks and minimizing drop height of trucks during construction, requiring contractors to provide safety equipment to construction workers including masks when working in high-dust and emission zone, limiting construction vehicles from passing through high-populated locations, when possible and following the contractor's Health and Safety Plan. The potential residual effect of sensory disturbance for local residents and land users (air emissions, noise and visual), is predicted to be experienced on the Project footprint, on a short-term, periodic basis, and the impacts are deemed reversible by ceasing with Project construction activities. The magnitude of the potential residual effect is predicted to be low, with a low likelihood and high level of confidence. The final potential effect is anticipated to be not significant, due to the reversibility and low magnitude of the potential effect.

Another health impact resulting from Project activity includes increase in resident contraction of viruses and diseases, including COVID-19, and/or sexually transmitted diseases and infections (STD/STIs). Mitigation measures for this potential effect include developing a Code of Conduct for employees and contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions. Additional mitigation measures include enforcing and monitoring safety measures taken against the spread of COVID-19 as recommended and regularly updated by Health Canada. By applying these mitigation measures, potential residual effects are envisioned to reduce, although not disappear. These potential effects could occur on a local community scale, on a short-term basis during the construction phase. The potential effect is isolated since it is only possible during construction. The potential residual effects are reversible following construction and medium in magnitude, and high in likelihood with a moderate confidence rating. The potential residual effect is not significant due to its short-term duration and reversibility.

A current health issue that may be exacerbated during construction due to the influx of non-local workers, is drug and alcohol abuse in the community. Although Sanikiluaq is currently a dry community and passengers arriving by plane to the municipality require their luggage to be screened for substances, the effectiveness of screening is not always successful and drug/alcohol abuse remains one of the top reasons for Sanikiluaq Health Centre visits. As a result of external workers coming into the community, drug and alcohol quantities in the community may increase, thus exacerbating the issue.

Mitigation measures include ensuring Project contractor(s) has, and enforces, a zero-tolerance policy for drugs and alcohol, while in Sanikiluaq and the development of a Code of Conduct for employees and contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions. After the application of mitigation measures the potential residual effect of an increased rate of addictions and substance abuse among Sanikiluaq residents may still be experienced locally, on a long-term, periodic basis. The potential residual effect is deemed to be reversible, as workers not respecting the no-alcohol/drug policy will be subject to appropriate disciplinary measures and the risk will cease when construction is completed. The magnitude of the potential residual effect is deemed to be medium level, with a high likelihood and medium level of confidence. The potential residual effect is projected to be not significant.

Gender/Racial Equity and Language

There is a potential for barriers to employment for women, LGBTQ+ or racial minorities as a result of gender and racial stereotypes and work inequalities arising from a predominantly male-dominated workforce. Due to the general male-dominated trades sector, minorities in Sanikiluaq may feel intimidated about applying for a job with the Project. Additionally, workplace harassment as a result of gender and racial discrimination may also be an issue. Language barriers between local and non-local workers may create a barrier for employment of local residents if the work site language is English or French.

Mitigation measures include providing and promoting equal opportunity hiring policies and ensuring Code of Conducts, policies and all health and safety documentation and signage are dual language. The potential residual effect is local in geographic extent, on a long-term, continuous basis, and is reversible if non-compliant employees are fired. The potential residual effect is also deemed to be low in magnitude and high in likelihood, with a medium level of confidence. The potential residual effect is deemed to be not significant.

Table 6.8 presents potential effects associated with the construction and operations of the Project on individual and community wellness. These interactions are based on the secondary research from online sources, primary research through in-community consultation and engagement, and the professional experience of the assessment team.

Table 6.8: Potential Project Effects on Individual and Community Wellness

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
Health Services	Demand on, and capacity of, Sanikiluaq Health Centre.	Share health and safety plans with local Health Centre. Ensure strict adherence to all WSCC requirements when on site. Consult with Sanikiluaq HTA on if there is a concern of polar bears in the area and hire a bear monitor if needed.	Increased demand on Sanikiluaq Health Centre.
	Demand on, and capacity of, emergency medical response services.	Consult with Sanikiluaq HTA on if there is a concern of polar bears in the area and hire a bear monitor if needed. Provide training to the workforce on safety, specifically contextual to the climate and weather conditions during project orientation. Ensure strict adherence to all WSCC requirements when on site.	Increased demand on emergency medical response services.
Health and Well-being	Dust and exhaust emitted from vehicles and heavy equipment during Project construction.	Adhere to speed limits and restrict idling, when possible, of construction vehicles. Have a contractual obligation for contractor(s) to employ best practices to reduce dust such as not overloading	Sensory disturbance for local residents and land users (air emissions, noise and visual).

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
		<p>trucks and minimizing drop height of trucks during construction.</p> <p>Require contractors to provide safety equipment to construction workers including masks when working in high-dust and emission zones.</p> <p>Limit construction vehicles from passing through high-populated locations, when possible.</p> <p>Follow contractor's Health and Safety Plan.</p>	
	Increased spread of disease, including cold/flu, COVID-19 and/or STI/STDs.	<p>Develop a Code of Conduct for employees and contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions.</p> <p>Enforce and monitor safety measures taken against the spread of COVID-19 as recommended and regularly updated by Health Canada</p>	Increased contraction of infections and diseases within the community.
	Increased drug and alcohol use in the community as a result of increased substance imports by non-local workers.	<p>Ensure Project contractor(s) has, and enforces, a zero-tolerance policy for drugs and alcohol, while in Sanikiluaq.</p> <p>Develop a Code of Conduct for employees and contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions.</p>	Increased rate of substance abuse among community members.
Gender/racial Equity and language	Barriers to employment.	<p>Provide and promote equal opportunity hiring policies.</p> <p>Ensure Code of Conducts, policies and all health and safety documentation and signage are dual language.</p>	<p>Barrier to women/racial minorities applying for employment opportunities.</p> <p>Language barriers between local and non-local workers.</p>

Table 6.9 provides a summary of the significance evaluation of the potential residual effect of the construction and operations of the Project on individual and community wellness.

Table 6.9: Significance Evaluation of Potential Project Effects on Individual and Community Wellness

Potential Residual Effect	Direction	Geographic Extent	Duration	Frequency	Reversibility	Magnitude	Likelihood	Confidence	Significance
Increased demand on Sanikiluaq Health Centre	Negative	Local	Long-term	Accidental	Reversible	Low	Low	High	Not significant
Increased demand on emergency medical response services	Negative	Local	Short-term	Accidental	Reversible	High	low	Medium	Not Significant
Sensory disturbance for local residents and land users (air emissions, noise and visual)	Negative	Local	Long-term	Continuous	Reversible	Low	Low	High	Not significant
Increased contraction of infections and diseases within the community	Negative	Local	Short-term	Isolated	Reversible	Medium	Low	High	Not significant
Increased rate in substance abuse among community members	Negative	Local	Long-term	Periodic	Reversible	Medium	Low	Medium	Not significant
Barrier to women/racial minorities applying for employment opportunities	Negative	Local	Long-term	Continuous	Reversible	Low	High	Moderate	Not significant
Language barriers between local and non-local workers	Negative	Local	Short-term	Continuous	Reversible	Low	Low	Moderate	Not significant

Community Infrastructure and Services

Drinking Water

This section discusses the potential Project related effects on community infrastructure and public services. The potential effects of the Project on drinking water include contamination of drinking water sources such as Sanikiluaq Lake as a result of leaks and spills of fuel, oil, and other contaminants from equipment during the construction phase. In addition, there is the potential for contamination from oil leaks from turbines during the operations phase. Mitigation measures include Project team monitoring of construction activities for environmental disturbance (i.e., spills), the development and implementation of a spill prevention and response plan, the implementation of spill barriers at water crossings and project operator monitoring during project operations for leaks. Even after the implementation of mitigation measures an impact to drinking water is still possible. The potential residual effect of impact to drinking water from construction activities after mitigation measures was deemed to be negative, local in extent, long-term in duration, accidental in frequency, permanent, medium in magnitude, low in likelihood, with a moderate level of confidence. Based on these factors it was determined that this potential effect was not significant.

Cultural Services

Although the Project will not be increasing the amount of energy produced, the Project nevertheless strengthens the capacity for future energy growth. With several cultural projects currently on hold in the

community due to unfeasible operational costs (such as the community freezer which has been shut since 2016), cultural organizations like the Arctic Eider Society may profit from the diverse energy sources in the future in terms of energy cost and/or energy availability. With a research centre being built for the Arctic Eider Society, energy availability and costs will also impact these growing projects. Although there is no certainty regarding increased availability or future energy costs, any changes in this regard are deemed to be positive, and thus do not need to be mitigated nor have a significance rating applied.

Road Access

The Project is expected to have two potential effects on road access for the community. The Project may restrict access to the existing trail that will be upgraded to a road during construction activities. Mitigation measures for this impact include providing notice to the community of when access trail will be closed for construction and encouraging hunting in areas that may be affected by road closure prior to construction activities. Once construction of the road is completed, it improves access to harvesting areas. The potential residual effect on road access to harvesting areas is considered neutral during construction as it does not change access to harvesting areas, and during operations is considered positive. Neither potential residual effect requires a significance evaluation.

Energy Reliability / Resilience

The Project is expected to improve access to energy by contributing to the reliability of Sanikiluaq's energy system and increasing generation capacity. Currently, the municipality's electricity needs are met entirely by diesel generation. The Project will contribute a second source of electricity and a battery storage system, which improves the reliability of the electricity supply, as well as increasing the amount of electricity that can be generated, as the diesel system will retain its current capacity. This potential residual effect was deemed to be positive, and thus do not need to be mitigated nor have a significance rating applied.

Temporary Accommodations

There is potential for the Project to cause an increased demand for temporary housing and hotel accommodations which could decrease housing opportunities for local community members and further contribute to overcrowding in current homes. Sanikiluaq experiences a range of issues with housing, including shortages, unsuitable housing, overcrowding, and affordability. The Project will require non-local construction workers at various times during the construction phase, which could peak at 26 in the period between September and October 2023. If the construction of the municipal office (freeing up beds in the construction trailers/buildings that are being used as temporary municipal offices), and the hotel is completed on time, there should be enough beds in temporary accommodations available in Sanikiluaq during this later phase of construction. So it is possible that the estimated peak number of construction workers in the community at one time could be accommodated. At the time of construction, if accommodation is not available in the hotel or temporary accommodations, the Proponent will house construction workers in a construction camp. Given these measures this potential residual effect is considered neutral.

Household Electricity Affordability

While it is unclear whether electricity prices will decrease as a result of the Project, it is possible that prices will be more stable as a result of wind energy, as opposed to fluctuating diesel prices. The results of this effect are deemed positive. Possible enhancement measures include providing support and guidance on how the community enhancement fund could be used to provide electricity subsidies. Due to the resulting positive effects on household electricity and affordability, no significance determination is necessary.

Community Safety, Crime and Security

The potential effect to safety, crime, and security is related to the demand for emergency, protective and social services during construction and Project components becoming targets for vandalism and damage. Community members expressed concerns that youth might damage turbine blades and towers, with firearms and thrown rocks, and thereby threaten the safety of any person who may be near the turbines, as well as the provision of electricity to the community.

Mitigation measures for demand for emergency, protective and social services include preparing a Project Emergency Response Plan that covers the Project construction phase, sharing Health and Safety and Emergency Response Plans with the local Health Centre and strict adherence to all WSCC requirements when on site. After the application of mitigation measures the potential residual effect of increased demand on emergency, protective, and social services during construction is still possible. This residual effect is negative, local in extent, short-term and reversible. It was determined that this potential residual effect was not significant.

Mitigation for the potential of vandalism and damage include education for youth from Elders, teachers, community liaison, parents and is installing security cameras to monitor vandalism activity. Since not all individual behaviours can be fully mitigated, the potential residual effect of vandalism and damage remains after mitigation measures. The potential effect is deemed negative, local in extent, long-term, continuous, permanent, medium in magnitude, highly likely, with a low level of confidence. It was determined that this potential residual was not significant.

Table 6.10 presents potential effects associated with the construction and operations of the Project on community infrastructure and public services. These interactions are based on the secondary research from online sources, primary research through in-community consultation and engagement, and the professional experience of the assessment team.

Table 6.10: Potential Project Effects on Community Infrastructure and Public Services

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
Drinking water	Contamination of drinking water from leaks, spills during construction.	Project team monitoring of construction activities for environmental disturbance (i.e., spills). Develop and implement spill prevention and response plan. Implementation of spill barriers at water crossings.	Impacts to drinking water.
	Contamination from oil leaks from turbine operation.	Project operator monitoring during project operations for leaks.	
Cultural Services	Increased energy generation for cultural services.	No enhancement measures identified.	Generation of energy could benefit cultural facilities in the community.

Indicator	Potential Effect	Mitigation/Enhancement Measures	Potential Residual Effect
Road Access	Restriction of land access from existing trail during construction activities.	Provide notice to community of when access trail will be closed for construction. Encourage hunting in areas that may be affected by road closure prior to construction activities.	Restriction of land access due to construction activities.
	Improved access adds to existing road network in the community.	No enhancement measures identified.	Improved access adds to existing road network in the community.
Energy Reliability / Resilience	Positive impact on community energy reliability and resiliency due to expanding power generation source to wind	No enhancement measures identified.	Improved energy reliability and resiliency
Housing and Temporary Accommodations	Increased demands for temporary housing and hotel accommodations could stretch capacity of current temporary accommodation availability.	House workers at available hotels. Utilize existing available temporary work camp housing if/when it becomes available (for example, current temporary municipal offices). Establish temporary accommodations to house the Project workforce.	Housing pressure from non-local workers is expected be neutral.
Household Affordability	Reduction of electricity costs for households in Sanikiluaq as a result of the community enhancement fund.	If desired by committee, provide support and guidance on how the fund could be used to provide electricity subsidies.	Reduction of household energy costs.
Safety, Crime, and Security	Demand for emergency, protective and social services during construction.	Prepare a Project Emergency Response Plan that covers the Project construction phase. Share Health and Safety and Emergency Response Plans with local Health Centre. Ensure strict adherence to all WSCC requirements when on site.	Increased demand on emergency, protective, and social services during construction.
	Vandalism and possible destruction of wind turbines, particularly with individuals using wind turbines for target practice.	Education for youth from Elders, teachers, community liaison, parents. Install security camera near wind turbines to monitor vandalism activity.	Vandalism and possible destruction of wind turbines.

Table 6.11 provides a summary of the significance evaluation of the potential residual effect of the construction and operations of the Project on community infrastructure and public services.

Table 6.11: Significance Evaluation of Potential Project Effects on Community Infrastructure and Public Services

Potential Residual Effect	Direction	Geographic Extent	Duration	Frequency	Reversibility	Magnitude	Likelihood	Confidence	Significance
Impacts to drinking water	Negative	Local	Long-term	Accidental	Reversible	Medium	Low	Moderate	Not significant
Generation of energy could benefit cultural facilities in the community	Positive	Local	Long-term	Continuous	N/A	Medium	High	Moderate	Not significant
Restriction of land access due to construction activities	Neutral	NA	NA	NA	NA	NA	NA	NA	Not significant
Improved access adds to existing road network in the community	Positive	Local	Long-term	Continuous	N/A	Medium	High	Moderate	Not significant
Housing pressure from non-local workers	Negative	Local	Short term	Continuous	Reversible	Medium	High	Moderate	Not significant
Reduction of household energy costs	Positive	Territorial	Long-term	Continuous	N/A	Medium	High	Moderate	Not significant

Potential Residual Effect	Direction	Geographic Extent	Duration	Frequency	Reversibility	Magnitude	Likelihood	Confidence	Significance
Increased demand on emergency, protective and social services during construction	Negative	Local	Short term	Isolated	Reversible	Low	Low	Low	Not significant
Vandalism and possible destruction of wind turbines	Negative	Local	Long term	Continuous	Permanent	Medium	High	Low	Not significant

7. Cumulative Effects Assessment

This section of the Project Proposal presents a cumulative impact assessment to determine the effect of the Project, in conjunction with other past, present, and future foreseeable activities, that could impact the valued components (VCs) or valued socio-economic components (VSECs). This section outlines the methods used to assess cumulative impacts, including valued components, spatial and temporal boundaries, and a list of future foreseeable projects that are reasonably certain to occur.

For those VCs or VSECs that are scoped into the cumulative impact assessment, the following questions will be examined:

- What could be the potential cumulative impact on each VC or VSEC and how will that be avoided, mitigated, or managed?
- What is the significance of the adverse cumulative impact after mitigation has been applied?

The assessment will then determine if a follow up program is required for any specific VC or VSEC to verify the accuracy of the predicted effects and effectiveness of mitigation measures.

7.1. Methods

The methods used in this cumulative effects assessment are based on the guidance provided by the Impact Assessment Agency of Canada and through inspection of other project cumulative impact assessments conducted for NIRB approvals. The steps in the assessment include:

1. Scoping the VC and VSECs that should be considered.
2. Establishing appropriate spatial and temporal boundaries.
3. Determining the physical activities that are reasonably foreseeable to occur and that may impact VCs or VSECs in addition to the Project activities.
4. Determining the likelihood of a cumulative effect on the VC and VSEC.
5. Assessing the significance of the cumulative effect.
6. Determining if a follow up program is needed to verify assessment results and efficacy of mitigation measures.

Significance of the impacts will be determined using the same criteria and ratings for Project impacts described in Section 6.1. Significant residual adverse cumulative effects will be defined as those that, following the application of mitigation measures, are:

- high magnitude, high probability, reversible and regional, territorial, or national in extent and cannot be technically or economically mitigated; or
- high magnitude, high probability, long-term or permanent reversibility, within any spatial boundary and cannot be technically or economically mitigated.

Scoping: Valued Component and Valued Socio-economic Components

VSECs that will be considered for this assessment are those that are considered to have adverse residual human environment effects regardless of whether they are predicted to be significant. Those VSECs include:

- Traditional activities including:
 - hunting;
 - fishing; and

- harvesting eggs, plants, and medicines.
- Cultural, archaeological, and paleontological resources
- Community wellness including:
 - health centre demand;
 - emergency response;
 - sensory disturbances;
 - virus/disease transmission;
 - substance abuse;
 - employment barriers; and
 - language barriers
- Community infrastructure including:
 - drinking water quality;
 - land access during construction; and
 - vandalism of Project infrastructure

The adverse residual impacts on these VSECs are primarily due to the:

- increased demands on community services and infrastructure from non-local workers employed during the construction phase; and/or
- location of the Project relative to traditional use areas.

Spatial and Temporal Boundaries

The spatial boundary for these VSECs is confined to those occurring in the Belcher Island system and for which Sanikiluaq would be the closest location where temporary accommodations and health services are offered. There are no other viable areas where non-local construction workers can reside or obtain these services.

The temporal boundary for these VSECs is confined to the two-year construction phase (2023-2024) since this is the only period when there are non-local workers residing in Sanikiluaq. During the operations phase, Project jobs are assumed to be held by local residents. The temporal boundary to assess potential cumulative effects on traditional use and drinking water VSECs is the 30-year operations and decommissioning phase, since this is the timeframe that these areas would be inaccessible for traditional uses.

Project and Activity Inclusion List

Table 7.1 provides a list of the future foreseeable physical projects and human environment effects that could act in combination with the Project to create an effect on the VSECs. To be included on this list, these projects must be considered highly probable of proceeding and occur within the Belcher Island system. Project information was gathered from interviews with municipal officials during the February 2022 visit and confirmed with Nunavut Community Government Services and Nunavut Housing Corporation.

Table 7.1: Project Inclusion List

Proponent	Project Description	Workforce Size	Construction Completion Date
Nunavut Housing Corporation (NHC)	Health Centre staff housing: 4 units to be built beside the centre	Unknown	October 2022
Nunavut Housing Corporation (NHC)	Construction of a new Local Housing Authority (LHO) office	Unknown	September 2023
Community Government Services	Construction of a new Sanikiluaq municipal office	Unknown	March 2023
Inns North and Co-op	Reconstruction of Amaulik Inns North Hotel	Unknown	Summer 2022
Arctic Eider Society	Research Centre (w/ interpretive centre, lab, offices for HTA, accommodations for researchers, eider economy space for processing and sewing duck skins, garage for equipment and tools)	Unknown	December 2022
Hamlet of Sanikiluaq and QIA	Qikiqtait Project - proposed as a pan-Belcher Island Archipelago conservation area	Unknown	Unknown - currently in the planning stages
Nunavut's Territorial Parks Division	Kinngaaluk Territorial Park, located on the peninsula adjacent to the northwest end of Sanikiluaq is proposed as an area for cultural activities and subsistence harvesting, as well as tourism activities.	Unknown	Unknown - currently in the planning stages
WWF in collaboration with the Nunavut Government	Commercial fisheries project - community is planning to invest in a fishing vessel, processing plant, and a new community freezer for storage	35 workers distributed between 3 communities: Sanikiluaq, Arviat, and Kinngait	Funding received in 2021, no information on start or completion dates.
Hamlet of Sanikiluaq	Water treatment plant	Unknown	In the planning stages, unlikely to occur in 2023-24.
Hamlet of Sanikiluaq	New landfill	Unknown	In the planning stages, unlikely to occur in 2023-24.
Hamlet of Sanikiluaq	Sewage lagoon upgrade	Unknown	In the planning stages, unlikely to occur in 2023-24.

VSECs that should be scoped into the assessment are those that are likely to be impacted by the Project as well as those projects and physical activities listed in Table 7.1 and that overlap with the spatial and temporal boundaries set for the cumulative impact assessment. Project construction activities, including employment estimates used in this assessment are outlined in Table 7.2

Table 7.2: Project Construction Employment Estimates and Timelines

Construction Component / Activity	Estimated Workforce (Number of local workers)	Estimated Start	Estimated Completion
Road construction	5 - 10 (5 - 9)	June 2023	September 2023
Foundations for towers and e-houses)	2 - 5 (1 - 3)	September 2023	October 2023
Turbine erection	5 - 10 (3 - 8)	October 2023	June 2024
Battery Energy Storage System (BESS) / Microgrid Controller (MGC)	2 - 7 (1 - 2)	October 2023	June 2024
Transmission line installation	3 - 6 (2-4)	September 2023	October 2023

Figure 7.1 shows the estimated non-local construction workers in Sanikiluaq that overlap with the Project in the assessment timeframe (construction phase) with the construction of the NHC housing office construction (June - September 2023). The construction workforce for the latter project is estimated to employ 10 non-local workers.

In June, July and August the Project contributes 1 non-local worker as it is assumed that the road construction can be completed by a local construction company employing local people. The NHC housing office construction workforce contributes an estimated 10 non-local workers for a total of 11 non-local workers in Sanikiluaq. In September, the installation of the Project transmission line and the foundations begins with the Project contributing 11 non-local workers into Sanikiluaq in addition to the 10 for the NHC housing office construction for a total of 21 non-local workers. In October there is a construction peak of 27 non-local workers for the installation of the Project turbines and commissioning of the BESS/MGC which is not expected to overlap with the construction of the NHC housing office. Thus the peak cumulative number of non-local workers residing in Sanikiluaq is anticipated to occur in a two month period from September to October 2023.

Table 7.3 provides a rationale for the VSECs included.

Figure 7.1: Estimated Cumulative Construction Workforce (N) in Sanikiluaq in 2023

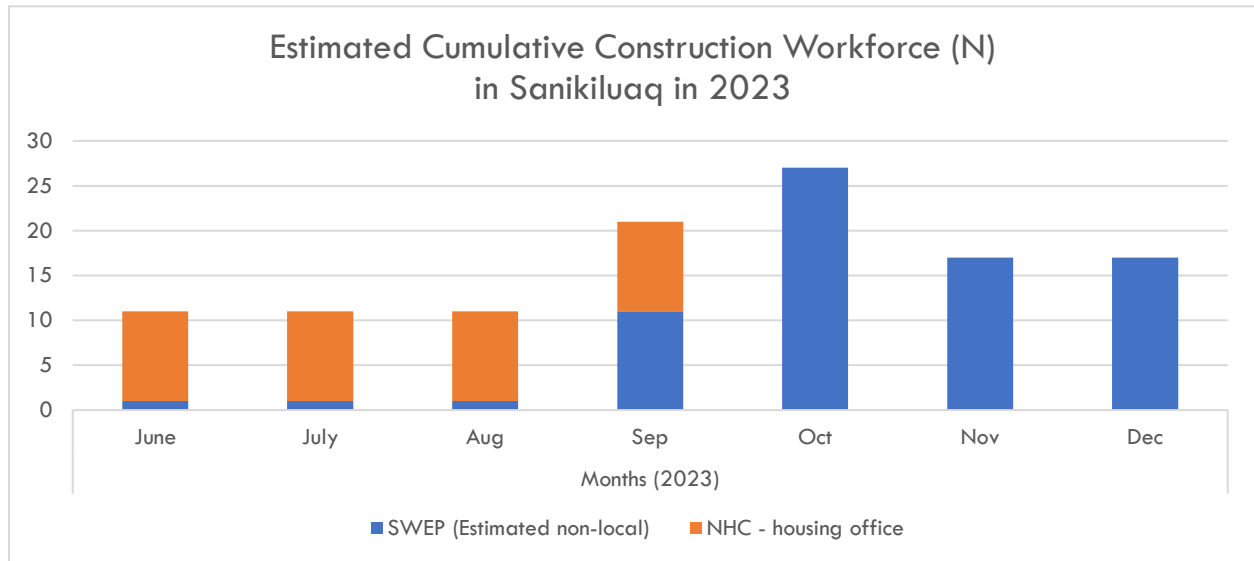


Table 7.3: Determination of VSECs for Cumulative Impact Assessment

Project / Physical Activity	Valued Socio-Economic Component with Predicted Impacts				Rationale for Inclusion / Exclusion from the Assessment
	Community Wellness	Community Infrastructure	Traditional Activities	Cultural, Archaeological or Paleontological Resources	
Nunavut Housing Corporation (NHC) - 4 Staff Housing Units	N	N	N	N	The project will be completed by October 2022 and construction workers in Sanikiluaq are not expected to overlap in the temporal boundary set for the assessment. Further, the location of the housing units within the municipal boundaries is not expected to impact traditional use areas, cultural / archaeological / paleontological resources, the drinking water source, land access, nor Project vandalism.
Nunavut Housing Corporation (NHC) - housing office	P	N	N	N	The construction work force for this project is expected to overlap with the construction phase for the Project from June to September 2023. The location of the municipal office within the municipal boundary is not expected to impact traditional use areas, cultural / archaeological / paleontological resources, the drinking water source, land access, nor Project vandalism.
Community Government Services - Sanikiluaq municipal office	N	N	N	N	The project will be completed by March 2023 and construction workers in Sanikiluaq are not expected to overlap in the temporal boundary set for the assessment. Further, the location of the municipal office within the municipal boundaries is not expected to impact traditional use areas, cultural / archaeological / paleontological resources, the drinking water source, land access, nor Project vandalism.
Inns North and Co-op - Amaulik Inns North Hotel	N	N	N	N	The project will be completed by October 2022 and construction workers in Sanikiluaq are not expected to overlap during Project construction. The hotel will be located within the municipal area and not expected to impact expected to impact traditional areas, cultural / archaeological / paleontological resources, the drinking water source, land access, nor Project vandalism.
Arctic Eider Society - Research Centre	N	N	N	N	The project will be completed by December 2022 and construction workers in Sanikiluaq are not expected to overlap during Project construction. The research centre will be located within the municipal area and not expected to impact expected

Project / Physical Activity	Valued Socio-Economic Component with Predicted Impacts				Rationale for Inclusion / Exclusion from the Assessment
	Community Wellness	Community Infrastructure	Traditional Activities	Cultural, Archaeological or Paleontological Resources	
					to impact traditional areas, cultural / archaeological / paleontological resources, the drinking water source, land access, nor Project vandalism.
WWF in collaboration with the Nunavut Government - Commercial fisheries project	Unknown	Unknown	Unknown	Unknown	Project details and schedule are unknown. Fishing vessel and community freezer are unlikely to create adverse cumulative impacts on these VSECs; construction of the processing plant may create additional strains on these VSECs if constructed by non-local workers during the Project construction phase or if it is located in areas with value to the community.
Hamlet of Sanikiluaq - water treatment plant	N	N	N	N	This project is in the planning stages, unlikely to occur in 2023-24 and therefore not expected to impact these VSECs in the assessment timeframe.
Hamlet of Sanikiluaq - new landfill	N	N	N	N	This project is in the planning stages, unlikely to occur in 2023-24 and therefore not expected to impact these VSECs in the assessment timeframe.
Hamlet of Sanikiluaq - Sewage lagoon upgrade	N	N	N	N	This project is in the planning stages, unlikely to occur in 2023-24 and therefore not expected to impact these VSECs in the assessment timeframe.

Note:

N = No cumulative impact expected

P = Potential cumulative impact expected

Unknown = Not enough information available to determine cumulative impacts.

As a result of this scoping exercise, cumulative impacts on the following VSECs will be conducted:

- Community wellness including:
 - health centre demand;
 - emergency response;
 - sensory disturbances;
 - virus/disease transmission;
 - substance abuse;
 - employment barriers; and
 - language barriers

7.2. Human Environment Cumulative Impact Assessment

Based on the VSEC scoping, this section provides the cumulative impact assessment on community wellness indicators from the Project in conjunction with the construction of the NHC housing office construction in the June to end of September 2023 timeframe.

Health Centre Demand and Emergency Response

With an increase in the number of non-local workers for Project construction, there is a risk that accidents and emergencies could increase placing strain on the limited capacities in health services and emergency response in Sanikiluaq to manage these issues. Mitigation measures include sharing health and safety plans with the local Health Centre, ensuring strict adherence to all WSCC requirements when on site, consulting with Sanikiluaq HTA if there is a concern of polar bears in the area and hiring a bear monitor if needed. Lastly, contractors will be required to provide training, during project orientation, to the workforce on safety, specifically contextual to the climate and weather conditions.

The residual cumulative effect on health services and emergency response is negative as potential for these effects cannot be fully mitigated. The short timeframe in which there could be a peak in non-local construction workers (June to September 2023) and the relatively low proportionate size of the peak workforce to the Sanikiluaq population mean it is unlikely that additional emergency response and health services will be retained by the Hamlet of Sanikiluaq in this period. The effect is therefore considered negative, local (in Sanikiluaq), short-term as it occurs during construction. The frequency of the potential impacts is accidental since accidents and crime/security or incidents requiring health or emergency response could occur, but rarely in the construction phase. The potential impact is reversible following construction. The magnitude and likelihood of the potential impact is considered low. The confidence of this assessment is moderate since there is no information about the actual size of the construction workforce for the NHC housing office and the number of non-local workers for the Project is dependent on local human resource availability, decisions made by the turbine manufacturer, and interest in local training. The residual cumulative impact on health and emergency services is therefore considered not significant.

Capacity issues related to health and emergency services, particularly in the first year of construction, will be monitored in a socio-economic management plan.

Sensory Disturbance

The Project has the potential to increase dust and exhaust emitted from vehicles and heavy equipment during Project construction causing sensory disturbances for construction workers as a result of air emissions, noise, and visual disturbances. Due to the municipality's 4.5km distance from the construction site, relatively small workforce and reversibility of the effect to residual impact was considered low and not significant. With the added 10 construction workers for the NHC housing office, which is located within Sanikiluaq, there is possible sensory disturbances possible within the community in the June to October 2023 timeframe.

Mitigation measures for sensory disturbance include adhering to speed limits and restricting idling, when possible, having a contractual obligation for contractor(s) to employ best practices to reduce dust such as not overloading trucks and minimizing drop height of trucks during construction, requiring contractors to provide safety equipment to construction workers including masks when working in high-dust and emission zone, limiting construction vehicles from passing through high-populated locations, when possible and following the contractor's Health and Safety Plan. These residual cumulative effects are estimated to be experienced locally within Sanikiluaq, on a short-term, periodic basis, and the impacts are deemed reversible at the end of September 2023. The magnitude of the residual effect is predicted to be low, with a high likelihood and high level of confidence. The final effect is anticipated to be not significant, due to the reversibility and low magnitude of the effect.

It is recommended that sensory disturbance, particularly in the first year of construction, be monitored in a socio-economic management plan.

Virus/Disease Transmission

With the introduction of up to 21 temporary non-local construction workers from both projects in Sanikiluaq during construction (June to September 2023) there is potential for the workers to transmit viruses (such as COVID-19) or other diseases to Sanikiluaq residents. This could result in health crises that are not easily managed given current, limited health care provision in the community.

To further avoid virus and disease transmission, mitigation measures for this potential effect include developing a Code of Conduct for employees and contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions. Additional mitigation measures include enforcing and monitoring safety measures taken against the spread of COVID-19 as recommended and regularly updated by Health Canada.

With these additional mitigation measures in place, the residual effect on virus/disease transmission is expected to be negative since there is still a risk for diseases to enter the community from non-local workers and visitors and not all individual behaviours can be managed. The geographic extent of the effect is local within Sanikiluaq and is short-term in duration (during construction). The frequency of the effect is isolated since it is confined to the construction phase and is reversible with the completion of construction. If effectively managed, the impact could be low and but likely. The confidence in this assessment is moderate. The significance of the cumulative effect on virus/disease transmission is considered not significant.

Given the likelihood of the effect and the limited health care services available, it is recommended that cumulative impacts of the two projects, particularly in the first year of construction, be monitored in a socio-economic management plan.

Substance Abuse

Similarly, to the predicted cumulative impacts on virus/disease transmission due to the number of non-local construction workers interacting with residents, the risk of introducing drugs and alcohol into the community is also increased. Sanikiluaq is a dry community, and, although there is airport screening, drugs and alcohol use is persistent in the community. The Hamlet of Sanikiluaq has a drug and alcohol counsellor, and related issues are on the top of those addressed at the health centre. Drug violation rates are relatively low and decreased in the 2006 - 2017 census period dropping from 3% in 2006 to 2% in 2017. The Project effects were considered not significant due to its reversibility following the construction phase.

To reduce this risk, mitigation measures include ensuring Project contractor(s) has, and enforces, a zero-tolerance policy for drugs and alcohol, while in Sanikiluaq and the development of a Code of Conduct for employees and contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions.

The potential residual effect is considered negative as the risk cannot be fully mitigated however, with mitigations enforced, is not expected to change existing conditions negatively or positively. The residual cumulative effect is considered neutral.

It is recommended that drug and alcohol use, particularly in the first year of construction, be monitored in a socio-economic management plan.

Employment and Language Barriers

There is a potential for barriers to employment for women, LGBTQ+ or racial minorities as a result of gender and racial stereotypes and work inequalities arising from a predominantly male-dominated workforce. Due to the general male-dominated trades sector, minorities in Sanikiluaq may feel intimidated about applying for a job with the Project or to construct the NHC housing office. Additionally, workplace harassment as a result of gender and racial discrimination may also be an issue. In addition, language barriers between local and non-local workers may create a barrier for employment of local residents if the work site language is English or French. These cumulative effects could occur cumulatively in the June to September 2023 timeframe and affect an estimated 9 to 16 employment opportunities for local people (depending on interest in training and skills available within the community).

Mitigation measures include providing and promoting equal opportunity hiring policies and ensuring Code of Conducts, policies and all health and safety documentation and signage are dual language. The potential residual effect is local in geographic extent, on a long-term, continuous basis, and is reversible if non-compliant employees are fired. The potential residual effect is also deemed to be low in magnitude and high in likelihood, with a medium level of confidence. The potential residual effect is deemed to be not significant.

Given the likelihood of the effect, it is recommended that cumulative impacts of the two construction projects, particularly in the first year of construction, be monitored in a socio-economic management plan.

7.3. Summary of the Cumulative Effects Assessment

The results of the cumulative effects assessment are that there could be negative residual impacts due to a short-term peak in non-local construction workers residing in Sanikiluaq during overlapping construction of the Project and the NHC staff housing office. Negative impacts may be felt in all VSEC indicators with the exception of substance abuse which is considered neutral. The confidence in the assessment is moderate and therefore it is recommended that potential cumulative impacts, particularly in the first year of construction, be monitored in a socio-economic management plan. Table 7.4 summarizes these results.

Table 7.4: Summary of Cumulative Impact Assessment

Potential Cumulative Residual Effect	Direction	Geographic Extent	Duration	Frequency	Reversibility	Magnitude	Likelihood	Confidence	Significance
Increased demand on health and emergency response services	Negative	Local	Short-term	Accidental	Reversible	Low	Unlikely	Moderate	Not significant
Sensory disturbance for local residents and land users (air emissions, noise and visual)	Negative	Local	Short-term	Periodic	Reversible	Low	Likely	Moderate	Not significant
Increased contraction of infections and diseases within the community	Negative	Local	Short-term	Isolated	Reversible	Low	Likely	Moderate	Not significant
Increased rate of substance abuse among community members	Neutral	NA	NA	NA	NA	NA	NA	NA	Not significant
Barrier to women/racial minorities applying for employment opportunities	Negative	Local	Short-term	Isolated	Reversible	Medium	likely	Moderate	Not significant

8. Sustainability Assessment

In 1987, the United Nations Brundtland Commission (UNBC) defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (UNBC, 1987). The Project promotes and achieves the basic principles of sustainability by eliminating Sanikiluaq’s reliance on fossil fuel resources for energy consumption by harvesting wind energy to enable greater energy security to future generations.

In 2011, Aarluk Consulting Inc. created the Infrastructure for a Sustainable Sanikiluaq (ISS) report which defined the community’s development priorities. The report further defined sustainability by breaking the concept into four pillars, which included:

- Cultural Sustainability: the capacity to develop, retain and protect its culture and identity, and transmit that culture to future generations.
- Economic Sustainability: the capacity of a community to maintain a stable and diversified economy that has minimal negative impacts on the environment and uses appropriate technologies and renewable resources where possible.
- Environmental Sustainability: the capacity of a natural environment to meet human needs while remaining balanced and healthy, without damage to air, land, water, or wildlife.
- Social Sustainability: the capacity of the community, individuals, and families to ensure the basic needs of all residents with respect to food, shelter and safety are met, that there are opportunities for community and personal development, and that there is social equity in the community.

In the absence of recent and specific sustainability goals identified by the community, we have used the 2014 Sanikiluaq Community Plan (SCP), the 2019 Sanikiluaq Community Economic Development Plan (SCEDP), and the 2011 ISS as alternative sources of information. These plans set out a vision for community growth and development for now and the future and, as such, provide sustainability goals and aspirations against which the VSECs assessed in the Project proposal can be measured.

Table 8.1 shows the proposed sustainability goal as identified in either the SCP, SCEDP, or ISS for each VSEC. There is then a statement to determine if and how the Project contributes to the sustainability goal. This table therefore serves as a sustainability assessment of the Project. The assessment demonstrates how social, economic, cultural, and environmental sustainability are considered through the Project’s development.

Table 8.1: Project Sustainability Assessment by VSEC

VSEC	Source	Sustainability Goal	Sustainability Pillar	Project's Contribution to Achieving Sustainability Goal
Economic Development and Opportunities	SCP	Minimize uncertainty with respect to the municipality's prospects for future development.	Economic	The Project provides renewable energy to power the local economy and achieves present and future economic development goals by providing a clean, stable energy supply. The Project will contribute to municipal revenues through a community enhancement fund which may be used to fund other economic development initiatives. The Project reduces the need for outside diesel fuel which is costly and subject to market price fluctuations.
	SCP	Provide a basis for directing more efficient and equitable utilization of the municipality's financial resources.	Economic	
	SCP	Support community projects and local economic development.	Economic	
	SCP	Establish expansion areas that can be economically and efficiently developed on a phased basis to meet the community's future needs.	Economic	
	SCP	Encourage a coordinated approach towards economic and social development with a strong emphasis on energy efficiency; the Hamlet should consider adopting alternative energy supply technology in-order to fulfil the environmental goals of the community.	Economic and Social	
	ISS	Achieve a sustainable economy and self-reliance.	Economic	
Business, Employment and Income	SCEDP	Explore opportunities that will lead to income and employment generation.	Economic	The Project creates new job opportunities within the community, and, through the community enhancement fund established by the Project, creates sustainable revenues for the Hamlet of Sanikiluaq.
	SCEDP	Create jobs and stimulate further economic development.	Economic	The Project provides a clean, stable energy supply that can power small businesses and generate revenues that can support community businesses.
	SCEDP	Support the development of small businesses.	Economic	
	SCEDP	Review infrastructure for small business; the community has no available space for businesses, non-governmental organizations (NGOs) or community groups to use.	Economic	The Proponent may consider leaving construction camp buildings to increase space for other uses following construction.

VSEC	Source	Sustainability Goal	Sustainability Pillar	Project's Contribution to Achieving Sustainability Goal
Education and Training	ISS	Increase training opportunities.	Economic	Training will be available for local residents so that they are able to independently operate and maintain Project infrastructure.
Traditional Activities	No associated goal identified.			
Cultural, Archeological and Paleontological Resources	SCP	Preserve important cultural and historical elements of the community.	Cultural	The Project location was selected in accordance with Nunavut Planning Commission's 2013 Sanikiluaq Land Use Planning Consultation Report to assure that the site location did not overlap with areas of cultural importance.
	SCP	Protect any cemeteries and sites of archaeological, ethnographical, palaeontological, or historical significance from disturbance; any development in or near such sites shall follow the Nunavut Archaeological and Palaeontological Regulations, 2001 of the Nunavut Act (Canada).	Cultural	
Individual and Community Wellness	SCP	Enhance the existing and future quality of life in the Hamlet of Sanikiluaq by ensuring orderly and phased development.	Social	The Project contributes to quality of life and better health through improved air quality by displacing diesel generated power. The Proponent will work in close collaboration with the municipality to ensure development is phased and mitigations are implemented so that the Project does not create unsustainable pressure on the community during construction.
Community Infrastructure and Public Services	SCP	Recognize the principle of separation of land uses as an effective way to promote compatibility and limit adverse impacts; the application of this principle will seek to develop mitigation measures that will lessen adverse impacts on adjacent properties such as the provision of buffers, landscaping, site design, building arrangements on a site and building design to enhance the compatibility of uses and structures.	Environmental, Cultural, and Social	The Project respects the separation of land uses as it is located at an appropriate distance from the community to ensure the reduction of adverse impacts on the community.

VSEC	Source	Sustainability Goal	Sustainability Pillar	Project's Contribution to Achieving Sustainability Goal
	ISS	Increase number of roads providing access to traditional land use areas.	Cultural and Social	The Project access road will provide better, all season access to traditional use areas.
	SCEDP	Maximize benefits associated with the renewable resources sector.	Environmental, Cultural, Economic, and Social	As a renewable resource, the implementation of wind turbines contributes towards Sanikiluaq's maximization of renewable resources.
	ISS	Establish more serviceable housing lots and increase new housing stock, especially 3-to-4-bedroom single family units.	Social	Revenues from community ownership could be used to fund new local housing infrastructure.
	SCP	Plan for a 2029 population of approximately 1098 people.	Social	The Proponent may consider leaving construction camp buildings to increase space for other uses following construction.
Governance and Leadership	No associated goal identified.			

9. Socio-Economic Impacts Monitoring Plan

9.1. Introduction / Approach

The purpose of this socio-economic management plan is to summarize socio-economic mitigation and enhancement measures and to communicate to Project personnel, contractors, Sanikiluaq residents, and stakeholders, in a clear and concise format. These policies, programs and measures are to be implemented during pre-construction and construction of the Project to avoid or reduce potential adverse socio-economic effects and to maximize Project-related economic and community opportunities or benefits.

As defined under the *CEA Act, 2012*, mitigation measures are defined as measures used to eliminate, reduce, or control a project's adverse effects including restitution for any damage to the environment caused by such effects through replacement, restoration, compensation, or any other means. This definition also applies to reducing or managing a project's adverse socio-economic effects. For the purposes of this assessment, enhancement measures are defined as a recommendation that aims to promote the likelihood of potential positive environmental or socio-economic residual effects.

Table 9.1 summarizes the mitigation and enhancement measures that have been designed to manage potential social, cultural, land and resource use, economic and health-related issues, and economic opportunities associated with the Project.

Table 9.1: Mitigation and Enhancement Measures

VSEC	Potential Effect	Mitigation/Enhancement Measures
Economic Development Opportunities	Electricity subsidy for Sanikiluaq residents, businesses, and the Hamlet of Sanikiluaq through the community enhancement fund.	If desired by committee, provide support and guidance on how the fund could be used to provide electricity subsidies.
	Increase opportunity for community-led infrastructure development through the community enhancement fund.	If desired by committee, provide support and guidance on how the fund could be used to support infrastructure projects.
Business, Employment, and Income	Increased contracting and procurement opportunities.	Prioritize hiring local contractors and utilizing local businesses. Ensure contracting and procurement opportunities are communicated to Sanikiluaq residents.
	Increased business in gravel extraction from increased Project demand.	Communicate gravel requirements to the Hamlet of Sanikiluaq six months prior to construction start to ensure adequate supply.
	Increased employment from direct, indirect, and induced employment in Sanikiluaq (up to 26 local employees for the construction phase and 2-4 for the operation phase).	Ensure employment opportunities and the necessary training or contracting requirements are communicated to Sanikiluaq residents. Collaborate with local contractors to host a workshop to recruit local workers.
		Ensure contractors prioritize hiring local residents to optimize the benefits of local income and spending.
	Personal spending by Project workers during construction.	No mitigation measures identified.
Education and Training	Increased local training opportunities	Provide training opportunities for a local long-term operator(s). Ensure contractor(s) provides on the job training if required during construction phase.
Traditional Activities	Reduced availability of wildlife/eggs due to noise.	Turbine noise levels will be a factor in the selection criteria for turbines.
	Degradation of harvesting experience for wildlife/eggs due to visual effect/noise.	Turbine noise levels will be a factor in the selection criteria for turbines.
	Reduced availability of wildlife/eggs due to habitat destruction from clearing/grubbing.	Project team monitoring of construction activities for protection of wildlife and halting of activities if at risk of environmental disturbance. Limiting activities to Project footprint where possible.

VSEC	Potential Effect	Mitigation/Enhancement Measures
	Reduced availability of wildlife/eggs due to barrier effect, blade strikes.	Limiting activities to Project footprint where possible.
	Destruction of freshwater fish habitat from spills, infilling, and sediment during construction.	Project team monitoring of construction activities for protection of wildlife and halting of activities if at risk of environmental disturbance (ie. spill).
		Employ best practice techniques for culverts at water bodies/water crossings.
	Reduced availability/quality of fish due to spills.	Inclusion of sediment barriers at water crossings/vulnerable waterbodies.
		Project team monitoring of construction activities for protection of wildlife and halting of activities if at risk of environmental disturbance (ie. spill).
		Implementation of spill prevention measures (barriers, emergency spill kits) at water crossings.
	Reduced availability of fish due to destruction of habitat.	Develop and implement spill prevention and response plan.
		Project team monitoring of construction activities for protection of wildlife and halting of activities if at risk of environmental disturbance.
	Reduced access to harvesting areas during road construction.	Silt/sediment barriers to protect sensitive areas from runoff.
		Provide notice to community of when access trail will be closed for construction, and provide direction on safe alternative passage to harvesting areas by four-wheeler, snow machine etc.
Cultural, Archeological, and Paleontological Resources	Degradation of plants/berries from dust/emissions.	Encourage harvesting in areas that may be affected by road closure prior to construction activities.
	Noise from turbines degrading harvesting experience.	Encourage harvesting of areas that may be affected by dust/emissions prior to construction activities.
	Improved access to harvesting areas with upgraded road.	Turbine noise levels will be a factor in the selection criteria for turbines.
	Destruction of harvesting areas within Project footprint.	None identified.
	Destruction of/damage to undiscovered archeological artifacts of cultural importance.	Restrict activities to Project footprint.
		Identification and protection of sensitive/high productivity areas.
		Project team monitoring of construction activities for protection of archaeological resources, and halting activities if at risk of disturbance.

VSEC	Potential Effect	Mitigation/Enhancement Measures
Individual and Community Wellness	Demand on, and capacity of, Sanikiluaq Health Centre.	Share health and safety plans with local Health Centre. Ensure strict adherence to all WSCC requirements when on site. Consult with Sanikiluaq HTA on if there is a concern of polar bears in the area and hire a bear monitor if needed.
	Demand on, and capacity of, emergency medical response services.	Consult with Sanikiluaq HTA on if there is a concern of polar bears in the area and hire a bear monitor if needed. Provide training to the workforce on safety, specifically contextual to the climate and weather conditions during project orientation. Ensure strict adherence to all WSCC requirements when on site.
	Dust and exhaust emitted from vehicles and heavy equipment during Project construction.	Adhere to speed limits and restrict idling, when possible, of construction vehicles. Have a contractual obligation for contractor(s) to employ best practices to reduce dust such as not overloading trucks and minimizing drop height of trucks during construction. Provide safety equipment to construction workers including masks when working in high-dust and emission zones. Limit construction vehicles from passing through high-populated locations, when possible. Follow contractor's Health and Safety Plan.
	Increased spread of disease, including cold/flu, COVID-19 and/or STI/STDs.	Develop a Code of Conduct for employees and contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions. Enforce and monitor safety measures taken against the spread of COVID-19 as recommended and regularly updated by Health Canada.
	Increased drug and alcohol use in the community as a result of increased substance imports by non-local workers.	Ensure Project contractor(s) has, and enforces, a zero-tolerance policy for drugs and alcohol, while in Sanikiluaq. Develop a Code of Conduct for employees and contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions.
	Barriers to employment.	Provide and promote equal opportunity hiring policies. Ensure Code of Conducts, policies and all health and safety documentation and signage are dual language.
	Contamination of drinking water from leaks, dust and spills during construction.	Project team monitoring of construction activities for environmental disturbance (i.e., spills). Develop and implement spill prevention and response plan.

VSEC	Potential Effect	Mitigation/Enhancement Measures
Community Infrastructure and Services		Implementation of spill barriers at water crossings.
	Contamination from oil leaks from turbine operation.	Project operator monitoring during project operations for leaks.
	Increased energy generation for cultural services.	No enhancement measures identified.
	Restriction of land access for hunting from existing trail during construction activities.	Provide notice to community of when access trail will be closed for construction.
		Encourage hunting in areas that may be affected by road closure prior to construction activities.
	Improved access adds to existing road network in the community.	No enhancement measures identified.
	Positive impact on community electricity reliability and resiliency due to expanding power generation source to wind	No enhancement measures identified.
	Increased demands for temporary housing and hotel accommodations could stretch capacity of current temporary accommodation availability.	House workers at available hotels.
		Utilize existing available temporary work camp housing if/when it becomes available (for example, current temporary municipal offices).
		Establish temporary accommodations to house the Project workforce, if necessary.
	Reduction of electricity costs for households in Sanikiluaq as a result of the community enhancement fund.	If desired by committee, provide support and guidance on how the fund could be used to provide electricity subsidies.
	Demand for emergency, protective and social services during construction.	Prepare a Project Emergency Response Plan that covers the Project construction phase.
		Share Health and Safety and Emergency Response Plans with local Health Centre.
		Ensure strict adherence to all WSCC requirements when on site.
	Vandalism and possible destruction of wind turbines, particularly with individuals using wind turbines for target practice.	Education for youth from Elders, teachers, community liaison, parents.
		Install security camera near wind turbines to monitor vandalism activity.

9.2. Monitoring

Socio-economic effects monitoring is utilized as a management tool to evaluate the effectiveness of mitigation measures and manage unintended socio-economic impacts of a project, as well as a means of facilitating ongoing communication with stakeholders and Indigenous communities. Socio-economic monitoring plans are designed to facilitate issues tracking and management regarding the intended and unintended impacts and benefits of a project. These plans also provide a feedback mechanism to the socio-economic assessor and proponent, which can introduce greater certainty to future socio-economic assessments and inform proponent initiatives on future projects.

The objectives of socio-economic monitoring are to:

- determine the effectiveness of socio-economic mitigation and enhancement measures;
- identify strategies to adapt /enhance mitigations, if required;
- identify and respond to unanticipated socio-economic effects and issues; and
- provide information to regulators and stakeholders on actual socio-economic outcomes.

By their nature, socio-economic issues are dynamic and are affected by multiple factors. Whether related to health, employment and business opportunities, traffic or access, how socio-economic issues impact communities will be determined by a nuanced consideration of Project components, individual choices, broader economic factors and government policies and programs. Socio-economic management and the discussion of mitigation/enhancement measures relies on shared responsibility. The ability and responsibility to address Project-related socio-economic issues lies with a range of individuals, organizations, and governments, in addition to the proponent. Therefore, the successful implementation of a socio-economic management plan will require the collaboration and shared responsibility between the Project proponent, service organizations, Indigenous communities, and local governments.

In particular, the monitoring of socio-economic effects is particularly useful given the ever-changing nature of socio-economic conditions. In addition, there is an associated challenge of predicting socio-economic outcomes related to the Project during the regulatory assessment process. A socio-economic monitoring plan that is designed to track and respond to the interests of stakeholders and Indigenous communities is an important tool for managing non-technical risk.

A primary challenge of socio-economic monitoring is that at any given time, multiple factors that extend beyond the influence of one project, can influence socio-economic outcomes. For example, individual behaviours or perspectives, changing labour market conditions, and other projects can be occurring at the same time as the Project. It is often difficult to determine which effects are the result of the Project and which are the result of other factors. Other challenges include limited data availability, timing of data releases, and attribution of factors that influence data changes.

Socio-economic monitoring will commence at the start of Project activity and will continue throughout the life of the Project. The frequency of monitoring will be established in consultation with stakeholders and Sanikiluaq residents. The socio-economic monitoring geographic scope will be specific to each topic and will be established in consultation with stakeholders and Sanikiluaq residents. Table 9.2 provides an example table that will be completed as a first step in creating a socio-economic monitoring plan. Topics will be identified, in consultation with stakeholders and Sanikiluaq residents, through an analysis of Project effects, to determine which residual effects can reasonably be monitored. Once topics have been identified, mitigation measures, timing, and accountability will be identified for each topic. Whether each

topic can be monitored will be determined and explained. If it is determined that a topic can be monitored, the next step will be to create a process for monitoring. This will include an identification of data sources and thresholds for action for each topic area.

Table 9.2: Sample monitoring table by topic area

Topic (based on Project effects)	Mitigation Measure	Timing	Accountability	Can this be Monitored (y/n)?	If yes, how? If no, why not?

10. Conclusion

This Socio-Economic Impact Assessment report addresses the socio-economic components of an environmental impact assessment in support of the NIRB proposal screening process of the Sanikiluaq Wind Energy Project. This report finds that no significant adverse potential residual effects on the VSECs identified are likely.

References

- Aarluk Consulting Inc. (2011). Infrastructure for a Sustainable Sanikiluaq: Community Priorities. Sanikiluaq Integrated Community Infrastructure Sustainability Plan Volume One. Prepared for the Government of Nunavut and Approved by the Hamlet of Sanikiluaq May 26, 2011.
- Air Inuit (2022). *Book a Flight*. Retrieved March 2022 from: <https://www.airinuit.com/en>
- Arctic College (2022). *Nunatta Campus*. Retrieved January 2022 from: <https://arcticcollege.ca/new-page>
- Arctic Elder Society (2022). Education. Retrieved February 2022 from: <https://arcticeider.com/education-outreach/>
- Bank of Canada. (2022) Inflation Calculator. Retrieved March 2022 from: <https://www.bankofcanada.ca/rates/related/inflation-calculator/>
- Canada, G.o. (2014, November 9). Nutrition North Canada: Eligible communities [Resource list]. <https://www.nutritionnorthcanada.gc.ca/eng/1415540731169/1415540791407#wb-auto-4>
- Chan, H. M., Fediuk, K., Hamilton, S., Rostas, L., Caughey, A., Kuhnlein, H., Egeland, G., & Loring, E. (2006). Food security in Nunavut, Canada: barriers and recommendations. *International Journal of Circumpolar Health*, 65(5), 416-431.
- Chiasson, D. (2021). *Working with a Nunavut island community to build a sustainable “blue economy.”* WWF. <https://wwf.ca/stories/nunavut-blue-economy-fisheries/>
- CIRNAC, Nunavut Regional Office (2020). *Nunavut Mining, Mineral Exploration and Geoscience*. https://publications.gc.ca/collections/collection_2021/rcaanc-cirnac/R71-39-2020-eng.pdf
- CNGO: Canada Nunavut Geoscience Office (2014). Nunavut Mineral Exploration Mining and Geoscience Overview. Retrieved February 2022 from: <http://cngo.ca/exploration-overview/2014/http://cngo.ca/exploration-overview/2014/>
- CNGO: Canada Nunavut Geoscience Office (2021). Nunavut Mineral Exploration Mining and Geoscience Overview. Retrieved February 2022 from: <https://cngo.ca/exploration-overview/2021/https://cngo.ca/exploration-overview/2021/>
- Co-op: Arctic Co-operatives Limited (2022). Member Co-ops Mitiq. Retrieved March 2022 from: <https://arctic-coop.com/index.php/member-co-ops/baffin-region-co-ops/mitiq/>
- Deslauriers, D. (2021a). *Progress Report: Small-Scale Fisheries in Sanikiluaq*. Institut des sciences de la mer de Rimouski, Université du Québec à Rimouski
- George, J. (2021). *The Candidates: Hudson Bay* | CBC News. CBC. <https://www.cbc.ca/news/canada/north/hudson-bay-candidates-nunavut-votes-2021-1.6209780>
- Grandmaison, D. (2019). *Sanikiluaq to remain prohibited community* | Government of Nunavut. Department of Finance. <https://www.gov.nu.ca/finance/news/sanikiluaq-remain-prohibited-community>
- Hamlet of Sanikiluaq (2014). Sanikiluaq Community Plan. By-Law No.83.

- Hemlo Explorers (2012). Overview. Canadian Orebodies Inc. <https://hemloexplorers.ca/projects/belcher-islands-iron/overview/>
- Hofmann, H. J. (1976). Precambrian microflora, Belcher Islands, Canada: significance and systematics. *Journal of Paleontology*, 1040-1073.
- Hudson Canada (n.d.). *Inuit Sculptures: Sanikiluaq*. Inuit Sculptures Art Gallery. Retrieved March 8, 2022, from <https://www.inuitsculptures.com/pages/sanikiluaq>
- ISC: Indigenous Services Canada. (2018, December 19). *Community Well-Being Index map*. <https://www.sac-isc.gc.ca/SAC-ISC/CWB/index-map-en.html>
- Kozisek, F. (2005). Health Risks from Drinking Demineralised Water. In *Nutrients in Drinking Water* (pp. 148–163). World Health Organization. https://www.who.int/water_sanitation_health/dwa/nutrientsindw.pdf
- McDonald, M., Arragutainaq L., Novalinga, Z. (1997). *Voices from the Bay: Traditional Ecological Knowledge of Inuit and Cree in the Hudson Bay Bioregion*. Canadian Arctic Resources Committee.
- McKay, J. (2022). *Iqaluit to Sanikiluaq flights extended to collect more data on viability*. CBC News. Retrieved March 8th from: <https://www.cbc.ca/news/canada/north/sanikiluaq-iqaluit-flights-extended-1.6342807>
- Hamlet of Sanikiluaq (2022). *About*. Retrieved January 2022 from: <http://www.sanikiluaq.ca/i18n/english/about.html>
- Hamlet of Sanikiluaq (2022a). *Tourism in Sanikiluaq*. Retrieved January 2022 from: <http://www.sanikiluaq.ca/i18n/english/tourism.html>
- NBS: Nunavut Board of Statistics (2018). Education. Retrieved February 2022 from: <http://www.stats.gov.nu.ca/en/Social%20education.aspx>
- NIRB: Nunavut Impact Review Board. (2020). Proponent's guide. <https://www.nirb.ca/publications/guides/NIRB%20Proponents%20Guide.pdf>
- NTIP: Nunavut Teacher Induction Program (2022). *Nuiyak Elementary school*. Retrieved January 2022 from: <https://ntip.gov.nu.ca/qikiqtani-school-operations-qso/sanikiluaq/nuiyak-elementary-school>
- NTIP: Nunavut Teacher Induction Program (2022a). *Paatsaali High School*. Retrieved January 2022 from: <https://ntip.gov.nu.ca/community/school/paatsaali-school>
- Nunavut Bureau of Statistics. (2018). *2018 Nunavut Food Price Survey – Price Comparison Per Kilogram and Litre*. <http://www.stats.gov.nu.ca/en/Economic%20prices.aspx>
- Nunavut Department of Family Services. (2019). *Nunavut Social Assistance Recipients by Community, Region and Territory, 2009 to 2018*. Nunavut Bureau of Statistics. <http://www.stats.gov.nu.ca/en/Social%20assistance.aspx>
- Nunavut Department of Health (2021). *COVID-19 GN Update—April 15, 2021*. Government of Nunavut Retrieved February, 2022, from <https://www.gov.nu.ca/executive-and-intergovernmental-affairs/news/covid-19-gn-update-april-15-2021>

- Nunavut Department of Health (2022). *COVID-19 Department of Health Services update*. Government of Nunavut Retrieved February 2022, from <https://www.gov.nu.ca/executive-and-intergovernmental-affairs/news/covid-19-gn-update-april-15-2021>
- Nunavut News (2021). *Research Vessel Ludy Pudluk on Maiden Voyage to Nunavut*. July 28th, 2021. Retrieved March 29th, 2022 from: <https://www.nunavutnews.com/news/research-vessel-ludy-pudluk-on-maiden-voyage-to-nunavut/>
- Nunavut Planning Commission (2013). *Summary of Community Meetings on the Draft Nunavut Land Use Plan: Sanikiluaq*.
- Nunavut Planning Commission (2013). *Summary of Community Meetings on the Draft Nunavut Land Use Plan: Sanikiluaq*.
- NVision Insight Group Inc. (2019) *Hamlet of Sanikiluaq Community Economic Development Plan Update 2019-2023*. Prepared for the Hamlet of Sanikiluaq
- NVisions Insight Group Inc. (2019). *Hamlet of Sanikiluaq Community Economic Development Plan Update 2019-2023*. March 29, 2019. 488 Gladstone Ave, Ottawa, ON.
- Office of the Auditor General of Canada. (2017). *Health Care Services—Nunavut*. https://www.oag-bvg.gc.ca/internet/english/nun_201703_e_41998.html
- Organ, J., Castleden, H., Furgal, C., Sheldon, T., & Hart, C. (2014). Contemporary programs in support of traditional ways: Inuit perspectives on community freezers as a mechanism to alleviate pressures of wild food access in Nain, Nunatsiavut. *Health & Place*, 30, 251- 259.
- Paatsaali School (2022). *Archive*. Retrieved January 2022 from: <https://www.paatsaali.ca/archive.html>
- QEC: Qulliq Energy Corporation (n.d. a). *Wind*. Retrieved March 2022, from <https://www.qec.nu.ca/power-nunavut/renewable-energy/wind>
- QEC: Qulliq Energy Corporation (n.d.). *Power in Nunavut | Qulliq Energy Corporation*. Retrieved March 2022, from <https://www.qec.nu.ca/power-nunavut>
- QIA: Qikiqtani Inuit Association (2013). *Qikiqtani Truth Commission Community Histories 1950-1975: Sanikiluaq*.
- QIA: Qikiqtani Inuit Association (2020). *Sarvarjuaq And Qikiqtait: Inuit Stewardship and the Blue Economy in Nunavut's Qikiqtani Region*. URL: https://www.qia.ca/wp-content/uploads/2021/01/qia-regional-marine-protection-strategy-new_web.pdf
- QIA: Qikiqtani Inuit Association (2022). *Who we are: Sanikiluaq*. URL: <https://www.qia.ca/about-us/communities/#qikiqtarjuaq>
- Rogers, S. (2021). *Nunavut communities are exploring how local fisheries could boost economic growth*. ArcticToday. <https://www.arctictoday.com/nunavut-communities-are-exploring-how-local-fisheries-could-boost-economic-growth/>
- Sanikiluaq Hunters and Trappers. (2016). *Southern Hudson Bay Polar Bear Management System – Sanikiluaq, Nunavut*. URL: <https://www.nwmb.com/en/public-hearings/2017-5/in-person-public>

- hearing-to-consider-the-proposed-nunavut-polar-bear-co-management-plan/submissions-21/6490-sanikiluaq-hto-shb-presentation-for-nwmb-polar-bear-hearing-eng/file
- Sharma, R. (2020, August 12). *Sanikiluaq's new health centre anticipated to open in 2021*. Nunavut News. <https://www.nunavutnews.com/nunavut-news/sanikiluags-new-health-centre-anticipated-to-open-in-2021/>
- Sommerville, D. (2021). *Reminder: Water advisory for Sanikiluaq* | Government of Nunavut. <https://www.gov.nu.ca/health/news/reminder-water-advisory-sanikiluaq-8>
- Statistics Canada (2007). Sanikiluaq, Nunavut (Code6204001) (table). 2006 Community Profiles. 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. Retrieved January 2022 from: <https://www12.statcan.gc.ca/census-recensement/2006/dp-pd/prof/92591/index.cfm?Lang=E>
- Statistics Canada (2017). Canada [Country] and Canada [Country] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Retrieved January 2022 from: <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- Statistics Canada (2017a). Sanikiluaq, HAM [Census subdivision], Nunavut and Nunavut [Territory] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Retrieved January 2022 from: <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- Statistics Canada (2019). Community Well-Being Index Map, Sanikiluaq. Retrieved January 2022 from: <https://www.sac-isc.gc.ca/SAC-ISC/CWB/index-map-en.html>
- Statistics Canada (2021). Census Family. Retrieved March 2022 from: <https://www23.statcan.gc.ca/imdb/p3Var.pl?Function=Unit&Id=32746>
- Straightupnorth.ca (2020). Qikiqtani Protected Area Development. URL: <https://straightupnorth.ca/qikiqtait-protected-area-development/>
- Takiomik, K. (2019). *Education and Financial Opportunities for Nunavut Secondary School Students*. Retrieved January 2022 from: http://www.paatsaali.ca/uploads/3/4/3/2/34326027/education_and_financial_opportunitieshandbook_-final_draft.pdf
- Travel Nunavut (2022). *Sanikiluaq*. URL: <https://travelnunavut.ca/regions-of-nunavut/communities/sanikiluaq/>
- United Nations Brundtland Commission (1987). Report of the World Commission on Environment and Development: Our Common Future. Retrieved March 2022 from: <http://www.un-documents.net/our-common-future.pdf>
- University of Manitoba (2019). *The Path: Reconciliation, Learning and Landscape Architecture*. UM Faculty of Architecture. Retrieved January 16, 2022 from: https://umanitoba.ca/faculties/architecture/media/SLS_2019-2020_Posters_Grosset.pdf
- Wood Environment and Infrastructure Solutions (2021). Environmental Impact Assessment High Displacement Renewable Energy Project – Draft Report. Dec. 23, 2021. Qikiqtaaluk Corporation. Report.
- Sanikiluaq Wind Energy Project Socio-economic Impact Assessment Report, April 2022