NIRB Application for Screening #126192

Arctic Community Connectivity for Equity, Sustainability, and Service (ACCESS)

Application Type:	New
Project Type:	Scientific Research
Application Date:	Tuesday, June 3, 2025
Period of operation:	from 2025-06-25 to 2027-02-22
Project Proponent:	Philip Ferguson University of Manitoba E1-546 EITC University of Manitoba Winnipeg Manitoba R3T 5V6 Canada Phone Number:: 204-474-8652, Fax Number::

DETAILS

Non-technical project proposal description

English: Project Title:Arctic Community Connectivity for Equity, Sustainability, and Service (ACCESS)PI: Philip Ferguson (University of Manitoba)Project Overview, Justification, and Background:Northern communities receive inequitable services compared to the rest of Canada, particularly those related to communications and data sharing. Even newer satellite internet service remains unreliable in Canada's Arctic, which limits critical communication amongst communities for environmental situational awareness and medical emergencies. The Arctic Community Connectivity for Equity, Sustainability, and Service (ACCESS) project will be a community-led endeavour that aims to understand the opportunities and challenges associated with high-bandwidth internet communications for northern communities and address them by developing a drone airship to act as a satellite communications hub for communities.Location:Chesterfield Inlet, NunavutDuration:3 yearsMethods:We plan to: •Conduct social needs assessments with the community to understand how people are communicating now, their challenges, and suggestions for how to improve communications, particularly surrounding hunters and trappers travelling beyond their communities•Co-develop airship technologies that could provide improved communications networks and situational awareness for people travelling between and beyond communities•Demonstrate and evaluate the effectiveness of the new solutions within and outside the communitySharing Research Results:We plan to share the results of the research directly with the communities through a series of town-hall style meetings, detailed technology transfer discussions, and postings on local news / information sharing platforms (such as the Chesterfield Inlet Facebook Group).

French: Titre du projet :Connectivité communautaire arctique pour l'équité, la durabilité et le service (ACCESS)PI :Philip Ferguson (Université du Manitoba)Présentation, justification et contexte du projet :Les communautés du Nord reçoivent des services inéquitables par rapport au reste du Canada, en particulier ceux liés aux communications et au partage de données. Même les services Internet par satellite les plus récents demeurent peu fiables dans l'Arctique canadien, ce qui limite les communications essentielles entre les communautés pour la connaissance de la situation environnementale et les urgences médicales. Le projet de connectivité communautaire arctique pour l'équité, la durabilité et le service (ACCESS) sera une initiative communautaire qui vise à comprendre les opportunités et les défis associés aux communications Internet à large bande passante pour les communautés du Nord et à les relever en développant un dirigeable drone qui servira de centre de communication par satellite pour les communautés.Emplacement :Chesterfield Inlet, NunavutDurée :3 ansMéthodes :On prévoit de :•Effectuer des évaluations des besoins sociaux avec la communauté pour comprendre comment les gens communiquent actuellement, leurs défis et des suggestions sur la façon d'améliorer les communications, en particulier les chasseurs et les trappeurs environnants voyageant au-delà de leurs communautés•Co-développer des technologies de dirigeables qui pourraient fournir des réseaux de communication améliorés et une meilleure connaissance de la situation pour les personnes voyageant entre et au-delà des communautés•Démontrer et évaluer l'efficacité des nouvelles solutions au sein et à l'extérieur de la communautéPartage des résultats de recherche :Nous prévoyons de partager les résultats de la recherche directement avec les communautés à travers une série de réunions de type mairie, de discussions détaillées sur le transfert de technologie et de publications sur des plateformes locales de partage d'informations et d'actualités (comme le groupe Facebook de Chesterfield Inlet).

Inuktitut: ᐱᓕᕆᐊᒃᓴᐅᑉ ᑕᐃᔭᐅᓂᖓ:ᐅᑭᐅᖅᑕᖅᑐᒥ ᓄᓇᓖᑦ ᑲᓲᒪᓂᖏᑦ ᐊᔾᔨᒌᑎᑦᓯᓂᕐᒥᑦ, ᑲᔪᓰᓐᓇᕈᓐᓇᓂᕐᒥᑦ, ᐱᔨᑦᓯᕋᕐᓂᕐᒥᓪᓗ (ACCESS)ᐃᓄᖕ ᒨᖓᔪᑦ ᑐᑭᓯᒋᐊᕈᑎᑦ: ᕕᓕᑉ ᕘᒍᓴᓐ (ᒫᓂᑑᐸ ᓯᓚᑦᑐᖅᓴᕐᕕᒡᔪᐊᖅ)ᐅᑭᐅᖅᑕᖅᑐᒥ ᓄᓇᓖᑦ ᐊᔾᔨᒌᓂᒃ ᐱᔨᑦᑎᕋᖅᑕᐅᖃᑦᑕᖅᐳᑦ ᑲᓇᑕᒥᐅᓕᒫᑦ ᑕᐅᑐᒃᓗᒋᑦ, ᐱᓗᐊᖅᑐᒥᒃ ᑕᐃᒃᑯᐊ ᐊᒃᑐᐊᓂᓖᑦ ᑐᓴᐅᒪᔪᓕᕆᔾᔪᑎᓄᑦ ᐊᒻᒪ ᖃᕋᓴᐅᔭᒃᑯᑦ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ. ᐊᓪᓛᑦ ᓄᑖᖑᓂᖅᓴᑦ ᖁᒻᒧᐊᑦᑎᑕᐅᓯᒪᔪᒃᑯᑦ ᐃᑭᐊᖅᑭᕕᒃᑰᕈᓐᓇᐅᑎᑦ ᓱᓕ ᑐᓐᖓᓇᖏᑦᑐᑦ ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᖓᓂ, ᑐᓴᐅᒪᖃᑦᑕᐅᑎᔪᓐᓇᐃᓕᑎᑦᑎᒍᑕᐅᖃᑦᑕᖅᑐᖅ ᓄᓇᓖᓐᓂᑦ ᐊᕙᑎᓕᕆᓂᕐᒥᑦ ᖃᐅᔨᒪᓂᕐᒥᑦ ᐊᒻᒪ ᐋᓐᓂᐊᓂᕐᒧᑦ ᑐᐊᕕᕐᓇᖅᑐᓂᑦ. ᐅᑭᐅᖅᑕᖅᑐᒥ ᓄᓇᓕᖕᓂ ᐊᑦᑕᑦᑕᕐᕕᐅᔪᓐᓇᖅᑐᖅ ᐊᔾᔨᒌᒃᑎᑦᑎᓂᕐᒧᑦ, ᐃᖏᕐᕋᐃᓐᓇᕈᑎᓄᑦ, ᐊᒻᒪ ᐱᔨᑦᑎᕋᐅᑎᓄᑦ (ACCESS) ᐱᓕᕆᐊᖅ ᓄᓇᓕᖕᓂ ᐊᐅᓚᑕᐅᓗᓂ ᐱᓕᕆᐊᖑᓂᐊᖅᐳᖅ ᑐᕌᒐᖃᖅᓗᑎᒃ ᑐᑭᓯᓇᓱᒡᓗᑎᒃ ᐱᓕᕆᐊᖑᖕᒫᕈᓐᓇᖅᑐᓂᒃ ᐊᒻᒪ ᐊᒃᓱᕈᕐᓇᖅᑐᓂᒃ ᐊᒃᑐᐊᓂᓕᖕᓂᒃ ᖃᕆᑕᐅᔭᓕᕆᔾᔪᑎᓂᒃ ᑐᓴᐅᒪᔪᓕᕆᔾᔪᑎᓂᒃ ᐅᑭᐅᖅᑕᖅᑐᒥ ᓄᓇᓕᖕᓄᑦ ᓴᖅᑭᓪᓗᒋᓪᓗ ᐱᕙᓪᓕᐊᑎᑦᑎᓂᒃᑯᑦ ᖃᖓᑕᔪᓐᓇᖅᑐᓂᒃ ᖃᖓᑕᔪᓐᓇᖅᑐᓂᒃ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᒃᑯᑦ ᑐᓴᐅᒪᔪᓕᕆᔾᔪᑎᓄᑦ ᓄᓇᓕᖕᓄᑦ.ᐃᓂᒋᓂᐊᖅᑕᖓ:ᐃᒡᓗᓕᒑᕐᔪᒃ, ᓄᓇᕗᑦᐊᑯᓂᐅᓂᖓ:3 ᐊᕐᕌᒍᑦᖃᐅᔨᓴᕈᓰᑦ:ᐸᕐᓇᒃᓯᒪᔪᒍᑦ ᐃᒪᐃᓐᓂᐊᕐᓂᑦᑎᓐᓂᒃ: 1.ᑲᔪᓯᑎᑦᑎᔪᖃᕐᓗᓂ ᐃᓅᖃᑎᒌᒃᐸᖕᓂᕐᒧᑦ ᐱᔭᐅᔭᕆᐊᓕᖕᓂᒃ ᖃᐅᔨᓴᖅᓯᓂᕐᒥᒃ ᓄᓇᓕᖕᒥᐅᓄᑦ ᑐᑭᓯᐅᒪᔪᒪᓂᕐᒧᑦ ᖃᓄᖅ ᐃᓄᐃᑦ ᑐᓴᐅᒪᑎᑦᑎᕙᖕᒪᖔᑕ ᒫᓐᓇ, ᐊᓂᒍᖅᑎᓐᓇᓱᕆᐊᖃᖅᐸᒃᑕᖏᓐᓂᒃ, ᖃᓄᐃᓕᐅᖁᔨᓇᔭᕐᓂᖏᓐᓂᓪᓗ ᖃᓄᖅ ᐱᐅᓯᕆᐊᖅᑎᑦᑎᔪᓐᓇᕐᒪᖔᑕ ᑐᓴᐅᒪᑎᑦᑎᓂᕐᒥᒃ, ᐱᓗᐊᙳᐊᖅᓱᓂ ᖃᓂᒋᔭᖕᒋᓐᓃᑦᑐᓂᒃ ᐊᖑᓇᓱᒃᑎᓂᒃ ᒥᑭᒋᐊᕐᓂᐊᖅᑎᓂᓪᓗ ᓄᒃᑕᖅᐸᒃᑐᓂᒃ ᓄᓇᓕᖕᒋᑕ

ᐅᖏᒍᓪᓂᒃ2.ᐊᖅᑭᑦᔪᐃᖅᑎᑎᕆᖏᖅ ᐊᓂᖅᓴᖅᑐᒍᖏᑦ ᐱᓕᕆᔨᔾᑕᐅᔾᐯᖅᑐᓂᒃ ᐱᐅᔪᑎᐊᖅᔪᒪᔾᓂᒃ ᑐᓴᐅᒪᑎᑕᑎᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᔾᐯᖅᑐᓂᒃ ᖃᓄᐃᓕᓕᖏᓐᓇᕆᐊᖃᓕᓪᓗ ᐅᓴᕆᒪᖃᖅᓯᓂᖅᑎᑦ ᐃᓄᖅᓄᓂ ᓄᑦᑕᖅᐸᑦᑐᓄᓂ ᐅᔪᓐᓄᖅᑲ, ᐅᖏᒍᓪᓂ ᓄᓇᓪᓂ3.ᑕᔪᐃᐅᑎᓪᓗᑎᑦ ᖃᐅᓴᓴᖅᓗᑎᓪᓗ ᐊᑐᑎᖃᑎᐊᖏᓂᖅᑎᑦ ᓄᑦᑕ ᐊᖅᑭᑎᐊᕈᑎᓴᓴᑦ ᓄᓇᓕᕆᓂ ᔪᓚᑦᓂᓗᐊᕐᓂᖅᑲᖅᖃᖅᖃᖅᑐᖅ ᖃᖅᑭᓴᓴᖅᑐᓂᒃ ᖃᐅᔨᓴᓴᖅᑐᓂᒃ ᓄᓇᓕᕆᓂ ᖃᐅᔨᒪᔨᐅᓕᕆᓂᒃ:ᐸᖏᓐᓄᔪᒪᓕᕐᓗᑎ ᑐᓴᖅᑎᑎᑦᑭᓐᓇᒪᓕᖏᓐᓄᑦ ᖃᐅᔨᓴᖅᑕᐅᔾᔪᓂᒃ ᓄᓇᕆᓂ ᑲᑎᒪᑎᑎᒃᑐᓗᒃ ᓄᓇᕆᓂ ᑲᑎᒪᑎᑎᒃᑐᓗᒃ, ᑐᑭᔪᓄᖅᑐᓂᒃ ᐱᓕᕆᔨᔾᑎᓂᒃ ᓃᑎᑎᓂᓕᑦᑐᓂᒃ, ᐊᓖᒪ ᓴᖅᑭᓪᓗᑎᑦ ᓄᓇᕆᓂ ᐱᓯᓕᓕᔪᑦ / ᑐᑭᔪᑎᐊᒃᓴᓴᑦ ᑐᙱᓚᖏᑦ (ᓂᔅᓗ ᐃᒃᓗᓕᓴᓴᖏᑎ Facebook-ᓄᑦ).

Personnel

Personnel on site: 5
Days on site: 20
Total Person days: 100
Operations Phase: from 2025-06-25 to 2027-02-22

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
These are the areas over which we would like to test the airship functionality.	Aerial surveys	Inuit Owned Surface Lands	N/A	N/A	Within 2 km of the Hamlet of Chesterfield Inlet.
These are the areas over which we would like to test the airship functionality.	Baseline data	Municipal	N/A	N/A	Interviews within the community.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Chesterfield Inlet	David Kattegatsiak	Hamlet of Chesterfield Inlet	2024-05-16

Authorizations

Indicate the areas in which the project is located:

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Transport Canada	Flying airship near community	Applied, Decision Pending		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	Flying airship out over the land and water	

Project accomodation types

Community

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Airship	1	20 m diameter	The airship will be used to provide high-bandwidth communicataions to hunters and trappers out on the land.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Other	fuel	1	50	50	Kg	We plan to use hydrogen to fuel the airship.

Water Consumption

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

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Aerial surveys	Other, None	None	N/A	We do not anticipate any waste from this project.

Environmental Impacts:

There is a potential for wildlife disturbance from the sound of the propellers. We are working with the local HTO to determine the appropriate height to avoid any wildlife disturbance.

Additional Information

SECTION A1: Project Info

This research begins with a social needs assessment, consisting of personal interviews with community members about their experiences with communications and connectivity both inside and outside their community. We will explore the barriers they face as well as some of the technology they have employed to help them stay connected within the community and with hunters and trappers out on the land and sea-ice.Dr. Marleny Bonnycastle from the Faculty of Social Work at the University of Manitoba will lead the social needs assessment.After discussions with the community, we will co-develop airship solutions that improve connectivity for community members out on the land. The airship (blimp) and associated equipment will be assembled with the community members in the community and flown a short distance (< 2km) outside the community of Chesterfield Inlet.A major part of the research project will be to determine, in co-development with the community, how and where the airships should fly. We will research, in cooperation with Transport Canada, the safest flight plans that minimize impacts to wildlife, maximize the comfort level of the community members, minimize the risk to the airspace around the Chesterfield Inlet Airport, and maximize the connectivity we receive from satellite internet and deliver to the users on the ground. Since these flight plans are an output of the research project, I do not have them to share ahead of time.

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

Description of Existing Environment: Biological Environment

Description of Existing Environment: Socio-economic Environment

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

Cumulative Effects

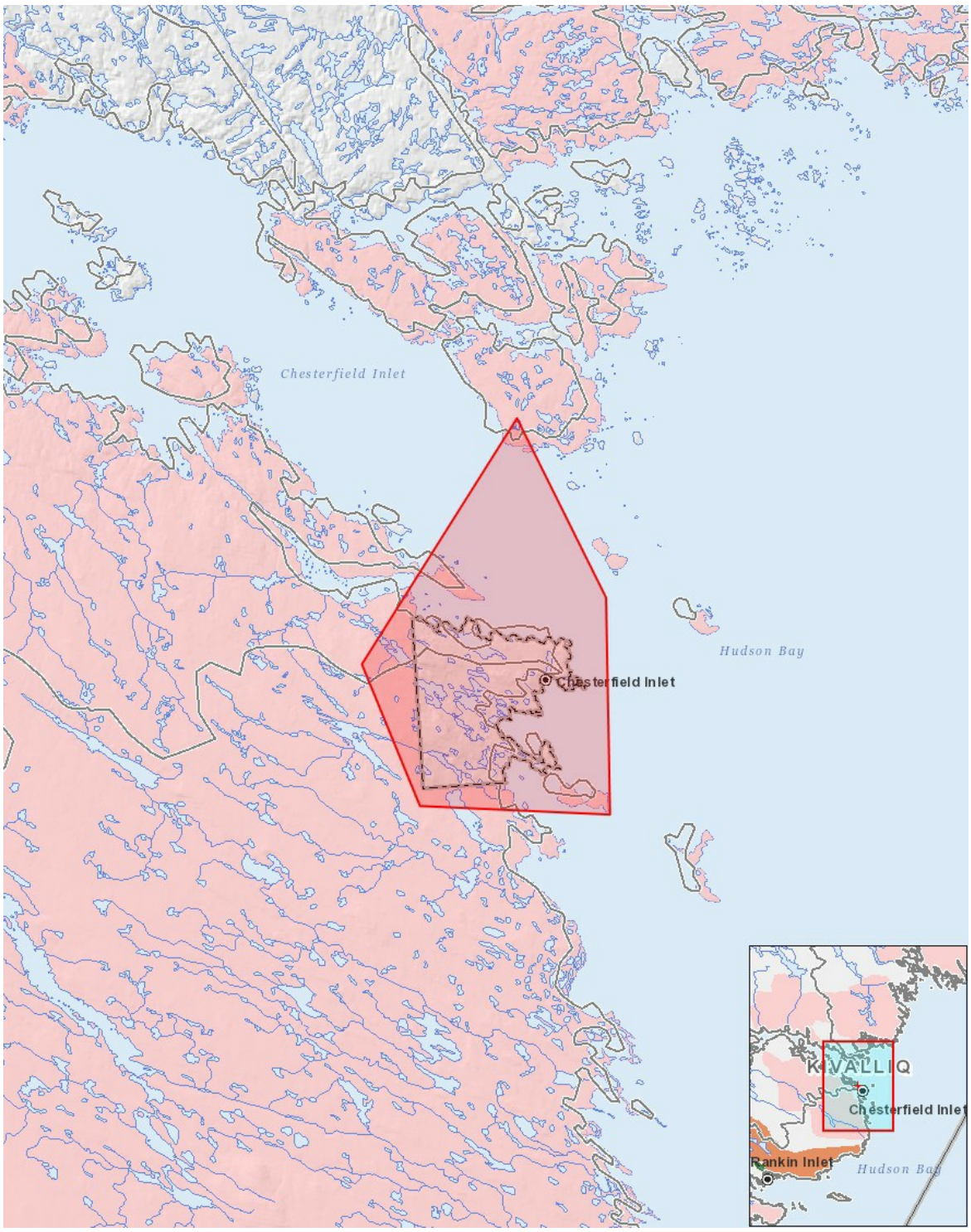
Impacts

Identification of Environmental Impacts

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

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

Project Location



List of Project Geometries

1 polygon These are the areas over which we would like to test the airship functionality.