NIRB Application for Screening #125874
CD-Wastewater Treatment Plant

Application Type: New

Project Type: Water

Application Date: 1/25/2024 1:05:18 PM

Period of operation: from 2028-01-01 to 2045-12-31

Project Proponent:

Community Support Division
Government of Nunavut
p.o. box 700 station 1000
Iqaluit Nunavut x0a0h0
Canada
Phone Number:: 867-975-5478, Fax Number::

DETAILS

Non-technical project proposal description

English: The Government of Nunavut Department of Community and Government Services, on behalf of the Municipality of Kinngait (Cape Dorset), is applying to amend water licence 3BM-CAP1925 in the Municipality of Kinngait to proceed with the construction of a mechanical wastewater treatment plant (WWTP)As part of the feasibility study, several sites for the WWTP were considered and evaluated. The recommendation was for the WWTP to be located west of the existing metal and wood recycling site, adjacent to the existing outfall from the emergency lagoon.The new WWTP will be designed to provide reliable treatment of all truck-collected sewage from the community for a 20-year horizon (2025 to 2045) replacing the existing wastewater lagoon system (3-tier lagoon, emergency lagoon, and P-Lake). The estimated daily flow of wastewater is 184 m^3 by 2025 based on population projections and per capita wastewater generation calculations.The expected effluent quality will exceed current water licence criteria. Based on the WWTP technology, the effluent quality is expected to have the following characteristics: BOD5: 25 mg/L; TSS: 25 mg; un-ionized ammonia: 1.25 mg/L; faecal coliform: 200 CFU/100 mL; pH: 6.0 – 9.0; and oil and grease: no visible sheen. The effluent would be discharged by a heat-traced pipe from the WWTP to the existing emergency lagoon outfall at Foxe Channel (CAP-5).Calculations estimate 25.6 tonnes of dry solid sludge would be produced by the WWTP in 2025 and 88.4 tonnes of dry solid sludge by 2045. A sludge management plan has been established, which plans for the sludge to be brought to a holding pad at the existing landfill where the sludge will be dewatered in geomembrane bags.All other previously submitted information for this water licence remains the same.

French: Le ministère des Services communautaires et gouvernementaux du gouvernement du Nunavut, au nom de la municipalité de Kinngait (Cape Dorset), demande la modification du permis d'utilisation des eaux 3BM-CAP1925 dans la municipalité de Kinngait afin de procéder à la construction d'une station de traitement mécanique des eaux usées.Dans le cadre de l'étude de faisabilité, plusieurs sites ont été envisagés et évalués pour la station de traitement des eaux usées. Il a été recommandé d'implanter la station à l'ouest du site actuel de recyclage des métaux et du bois, à côté de l'exutoire existant du bassin d'épuration d'urgence.La nouvelle station de traitement des eaux usées sera conçue pour assurer une épuration fiable de toutes les eaux usées collectées par les camions de la communauté sur une période de 20 ans (2025 à 2045), en remplacement du système de lagunage existant (lagunage à trois niveaux, lagunage d'urgence et lac P). Le débit journalier d'eaux usées est estimé à 184 m^3 en 2025 sur la base des projections démographiques et des calculs de production d'eaux usées par habitant.La qualité attendue des effluents dépassera les critères actuels du permis d'utilisation des eaux. Sur la base de la technologie de la station de traitement des eaux usées, la qualité des effluents devrait présenter les caractéristiques suivantes : DBO5 : 25 mg/L; TSS : 25 mg ; ammoniac non ionisé : 1,25 mg/L ; coliformes fécaux : 200 UFC/100 ml ; pH : 6,0 - 9,0 ; et huile et graisse : pas de reflet visible. Les effluents seraient évacués par une canalisation calorifugée depuis la station de traitement des eaux usées jusqu'à l'exutoire de l'étang d'épuration d'urgence existant dans le chenal Foxe (CAP-5).Les calculs estiment que la station de traitement produira 25,6 tonnes de boues solides sèches en 2025 et 88,4 tonnes de boues solides sèches en 2045. Un plan de gestion des boues a été établi, qui prévoit que les boues soient amenées sur une plateforme de rétention dans la décharge existante, où elles seront déshydratées dans des sacs en géomembrane.Toutes les autres informations précédemment soumises pour ce permis d'utilisation des eaux demeurent inchangées.

Inuktitut: ᓄᓇᕗᒻᒥ ᑲᕙᒪᒃᑯᑦ ᓄᓇᓕᖕᓂ ᑲᕙᒪᒃᑯᓐᓂᓗ ᐱᔨᑦᑎᕋᖅᑎᒃᑯᑦ, ᑭᒃᑲᖅᑐᖅᓱᒍ Hᐋᒻᒪᓚᖕᑲ ᑭᖖᑲᕐᓂ (ᑭᖖᑲᐃᑦ), ᑐᒃᓯᕋᖅᑐᑦ ᐋᖅᑭᒋᐊᕐᓱᒍ ᐃᒪᕐᒧᑦ ᓚᐃᓴᓐᓯ 3BM-CAP1925 Hᐋᒻᒪᓚᒃᑯᓐᓂ ᑭᖖᑲᕐᓂ ᑲᔪᓯᓗᓂ ᓴᓇᔭᐅᓂᖓ ᑭᓈᓗᖃᕐᕕᖕᒧᑦ ᓴᓗᒻᒪᖅᓴᐃᕝᕕᒃ (WWTP)ᐃᓚᒋᓪᓗᓂᐅᒃ ᐊᔪᙱᑦᑎᐊᕋᔭᕐᓂᖓᓄᑦ ᖃᐅᔨᓴᖅᑕᐅᔾᔪᑎ, ᖃᔅᓯᐊᕐᔪᐃᑦ ᐃᓂᐅᔪᑦ WWTP-ᒧᑦ ᐃᓱᒪᒋᔭᐅᓚᐅᖅᑐᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑕᐅᓪᓗᑎᒃ. ᐊᑐᓕᖁᔭᐅᔪᖅ ᑭᓈᓗᖃᕐᕕᖕᒧᑦ ᓴᓗᒻᒪᖅᓴᐃᕝᕕᒃ ᐃᓂᖃᕐᑯᓪᓗᒍ ᐱᖕᒐᓇᖕᒑᖕᒐᓂ ᓴᕕᕋᔭᒃ ᐊᒻᒪ ᕿᔪᒃ ᐊᑐᒃᑲᓂᕈᓐᓇᖅᑐᑦ, ᖃᓂᒋᔭᖕᒐᓂ ᐱᑕᖃᖅᐸᕇᖅᑐᖅ ᑯᕕᔪᖅ ᑐᐊᕕᕐᓇᖅᑐᓄᑦ ᑭᓈᓗᖃᕐᕕᖕᒧᑦ.ᓄᑖᖅ ᑭᓈᓗᖃᕐᕕᖕᒧᑦ ᓴᓗᒻᒪᖅᓴᐃᕝᕕᒃ ᐋᖅᑭᒃᑕᐅᓂᐊᖅᐳᖅ ᓈᒻᒪᒃᑐᑎᒃ ᓴᓗᒻᒪᖅᓴᐅᑎᑦ ᓄᓇᓯᐅᑎᓕᒫᓄᑦ–ᑯᕕᖅᑕᖅᑕᐅᓲᓄᑦ ᓄᓇᓕᖕᓂ ᐅᑭᐅᓄᑦ ᐊᕙᑎᓄᑦ ᓴᓂᒧᑦ (2025-ᒥ 2045-ᒧᑦ) ᐊᓯᔾᔨᖅᑕᐅᓗᓂ ᑭᓈᓗᖃᕐᕕᒃ (ᐱᖓᓱᑦ–ᖃᑎᙶᑦ ᑭᓈᓗᖃᕐᕕᖕᒥ, ᑐᐊᕕᕐᓇᖅᑐᒃᑯᕕᒃ, ᐊᒻᒪ P-Lake). ᓇᓚᐅᑦᑖᖅᑕᐅᓯᒪᔪᖅ ᖃᐅᑕᒫᑦ ᑯᕕᖃᑦᑕᖅᑐᖅ ᐃᒥᕐᓄᑦ ᐊᑐᓃᖅᓯᒪᔪᓄᑦ 184 m^3 2025-ᒧᑦ ᑐᙵᓂᖃᖅᑐᖅ ᐃᓄᕆᐊᓐᓂᖕᒋᓐᓄᑦ ᐊᒻᒪ ᐃᓄᕆᐊᓐᓂᖕᒋᓐᓄᑦ ᐃᒥᕐᓄᑦ ᐊᑐᓃᖅᓯᒪᔪᓄᑦ ᐆᒻᒪᖅᑯᑎᓕᐅᓂᕐᒧᑦ ᓈᓴᖅᑕᐅᓯᒪᔪᑦ.ᓂᕆᐅᒋᔭᐅᔪᖅ ᑯᕕᔪᖅ ᐱᐅᓂᖓ ᖄᖏᐅᑎᓂᐊᕋᓱᒋᔭᐅᓪᓗᓂ ᒫᓐᓇᐅᔪᖅ ᐃᒪᕐᒧᑦ ᐱᔪᓐᓇᐅᑎᖕᒐᓄᑦ. ᑐᙵᕕᒋᔭᐅᓪᓗᓂ WWTP-ᒧᑦ ᐱᓕᕆᔾᔪᑏᑦ, ᑯᕕᔪᑦ ᖃᓄᐃᓐᓂᖕᒋᑦ ᓂᕆᐅᒋᔭᐅᔪᑦ ᒪᑯᓂᖓ

ᖃᓄᐃᖅᑐᓂᖃᖅᓂᐊᖅᓂᖏᓄᓄᑦ: BOD5: 25 mg/L TSS: 25 mg; un-ionized ammonia: 1.25 mg/L; faecal coliform: 200 CFU/100 mL; pH: 6.0 – 9.0; ᐅᖃᓕᖃᑎᑭᑐᓗᖃᖅ: ᑕᑯᐸᐅᓕᖅᖃᖏᑦᑐᖃᖅ. ᑯᐃᓕᖃᖅ ᑯᐃᑎᑕᐅᓇᖅᑐᖃᖅ ᐅᓇᖅᑐᒍᑦ ᓕᓐᓂᓕᖏᒍᑦ WWTP-ᒥᑦ ᐃᓕᓴᐅᓕᖅ ᑐᐊᐃᖅᓇᖅᑐᒍᑦ ᑯᐃᖅᑕᖃᖅᐸᒍᑦ ᓴᓂᕋᖅᐅᓕ (CAP-5).ᓵᓴᐅᓕᓕᑦᑎᐅᓕᖅᑦ ᓇᓪᐅᑦᑕᖅᑕᐅᓕᖅᑦ 25.6 ᑕᓵᓴ ᓱᓂᖅᑐᑦ ᑭᓂᖅᑐᑦ ᓴᓇᓕᐅᓇᓕᖅᑐᑦ WWTP-ᒧᑦ 2025-ᒥᑦ ᐊᓚᒪᓗ 88.4 ᑕᓵᓴ-ᓂᑲ ᓱᓂᖅᑐᓂᑲ ᑭᓂᖅᑐᓂᑲ 2045-ᒥᑦ. ᒪᖃᕐᓄᑦ ᐊᐅᓪᓚᑎᓂᕐᒧᑦ ᓱᖃᓕᐅᑦ ᐊᒋᖅᑭᑕᐅᓕᓪᓚᖅᑐᖅ, ᓱᖃᓇᐅᓕᓴᑦ ᒪᕐᕌᒧᑦ ᐊᑲᑕᖃᖅᓄᓕᐊᖅᑕᐅᓯᖃᓪᓚᓂ ᐊᑲᑕᖃᖅᐊᓪᓚᒧᑦ ᒪᕐᕌᖅ ᐃᒍᑎᖅᑕᐅᓂᐊᖅᑐᖅ ᓄᓇᐅᓱ ᖅᑲᖏᓀᓪᓚᓂ.ᐊᓕᓪᓚᒪᓕᑦ ᑐᓂᓕᐅᖅᑐᑦ ᑐᑭᓕᐊᑕᑎᓂᑦ ᑕᐃᓴᓕᖏᑦ ᐃᒪᖃᑦ ᓪᓚᐃᓴᓕᑦ ᐊᓕᔨᓕᑦᑐᖅᑐᖅ.

Inuinnaqtun: Nunavut Kavamangani Nunalingni Kavamatkunnilu Pivikhaqautikkut Havagvia, pidjutigiplugu Haamlanga Kinngait, (Cape Dorset), uuktuliqtuq ihuaqhariami imakkut laisinga 3BM-CAP1925 uvani Haamlangani Kinngait hivumuujaami uumunga nappaqtirnirmun ingilrutiqaqtukkut halumaittunik-imarnik halummaqtirutikkut havagvingmik (WWTP)Ilauningani pittaataarutikhaanun qaujiharnirmi, qaffit iniiit uumunga halumaittunik-imarnik halummaqtirutikkut havagvikhamun ihumagijaujun naunaijaqtaujullu. Pitqujauhimajuq una WWTP talvungaqluni uataanun talvaniittumin havigalingni qiuknilu atuqtauffaaqtaaqtunin ininganin, haniraliingniani tahamaniittumi kuviraqvianin talvani amirarnakhikpat halumaittunun-imarqarvingmi.Nutaaq WWTP piliuqtauniaqtuq tunijaami ihuaqtunik halummaqtirutinik tamainni akhaluutinin-anaqtautinin anakuinnik nunallaamin uvunga 20nik-ukiuqaqtumik pidjutimi (2025min 2045mun) himauhiqlugu tahamaniittuq halumaittuq-imait halumaittunun-imaqarvingmun pidjutaanun (3nik-qaliriilik imaqarvik, amigarnaqhikpat imaqarvik, unalu P-Lake tahiq). Itqurniaqhimajuq ubluq tamaat kuviniit halumaittunik-imarnik una 184 m^3 talvuuna 2025 tunnganiani inugiangnirni naunaijarnirni uvanilu tamainni inungni halumaittuni-imarni piliurutainnik kihitiinni.Niriuktaujun anakiunnik qanurinniit avatqunniaqtait tadja atuqtuq imakkut laisingani maliktakhat. Tunnganiqarningani uumani WWTPkut ingilrutainni, anakiunnik qanurinniit niriuktaujuq piqarluni hapkuninga qanuridjutinik: BOD5: 25 mg/L; TSS: 25 mg; un-ionized ammonia: 1.25 mg/L; faecal coliform (ananin qupilruit): 200 CFU/100 mL; pH: 6.0 – 9.0; uqhuqjuat uqhuillu: takunnaittuq qiplaringnirnik. Halumaittun imait kuviraqtauttaaqtun uvuunga uunnakhimajumin tuqhuamin uumanga WWTP talvunga tahamaniittumun amirarnakhikpat halumaittunun-imarqarvingmi kuvirarvianun uvani Foxe Channel-mi (CAP-5).Naunaijarutit itqurniaqhimajun 25.6 tonnes uvani paniumajuni naptujuni marlungmi piliuqtaaqtuq WWTPmin 2025mi imaalu 88.4 tonnes uvani paniumajumi naptujuni marlungni 2045kut. Uvani marlungni munaridjutikhakkut uplaungaidjutikhaq piliuqtauhimaliqtuq, upalungaiqhimajuq malrungnik agjaqtauniaqtuq najuqvikhaani talvaniittumi iqqakuurvingmi talavani marliut imaijaqtauniaqtuq ukunani inngaqtaaqtunik (geomambrane) puukattani.Tamaita aallat hivuagun tunuqhimajun ilittuirpkaidjutit uumunga imakkut laisigamun huli aajjikkiiktut.

Personnel

Personnel on site: 2

Days on site: 365

Total Person days: 730

Operations Phase: from 2025-05-01 to 2027-12-31

Operations Phase: from 2028-01-01 to 2045-12-31

Post-Closure Phase: from to

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
New Mechanical Wastewater Treatment Plant	Municipal and Industrial Development	Municipal	Current municipal waste site.	None.	Apart of the municipality.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Cape Dorset	Louis Primeau	Hamlet of Kinngait	2024-09-10

Authorizations

Indicate the areas in which the project is located:

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Water Board	3BM-CAP1925 Water Licence	Active	2019-05-22	2025-05-21
Other	Municipality of Cape Dorset Motion Number 153-2017 Approval of mechanical wastewater treatment plant	Active	2017-10-30	
Other	Municipality of Cape Dorset Motion Number 154-2017 Approval of approve across the emergency lagoon for the wastewater treatment plant	Active	2017-10-30	

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	Construction phase personnel to fly in/out by air.	
Land	Operations phase personnel (2 people) will be from the local community.	

Project accomodation types

Community

Other,

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Sewage Truck	3	xyz	For delivering sewage to the wastewater treatment plant
Pickup Truck	1	xyz	For bringing dewatering bags of sludge to the landfill
Land Rescaping Heavy Construction Machiner	10	xyz	All heavy earth moving construction machinery for constructing permanent structures (excavator, bulldozer, and dump truck for hauling)
Excavator, bulldozer, and dump truck	3	xyz	All heavy earth moving construction machinery for landscaping and constructing permanent structures
Crane and forklift	2	xyz	For modular building assembly
Aggregate	1	xyz	For the onsite earthworks. The source of the granular material will be the existing quarry as understood by the local Council

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Diesel	fuel	1	10000	10000	Liters	DPD diesel fuel supply will be used for refueling purposes of dozers', excavators, compactors, trucks, concrete mixers and portable power supply generators

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
299	The wastewater treatment plant will receive wastewater trucked from sewage holding tanks in the community.	A septage receiving station is apart of the wastewater treatment plant design for receiving all trucked sewage deliveries.

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Municipal and Industrial Development	Hazardous	0.5-40' seacan in volume	Hazardous waste such as extra paint, oil, etc. to be barged offsite of the municipality	Hazardous waste will delivered to accredited hazardous waste disposal facility in the South
Municipal and Industrial Development	Non-Combustible wastes	7-40' seacans in volume	Non-hazardous construction waste to be brought to the municipality landfill. Breakdown of volume: 3-40' seacans - miscellaneous packaging waste from equipment and materials, 2-40' seacans - daily waste generated during construction activities, and 2-40' seacans - cardboard/crate waste	None
Waste disposal	Sewage (human waste)	25.6 tonnes per year of operation	Sludge to be disposed at existing 3-tiered lagoon	Dewatering sludge in geomembrane bags

Environmental Impacts:

Use of insulating materials around the foundation to prevent heat transfer from the building into the permafrost.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

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

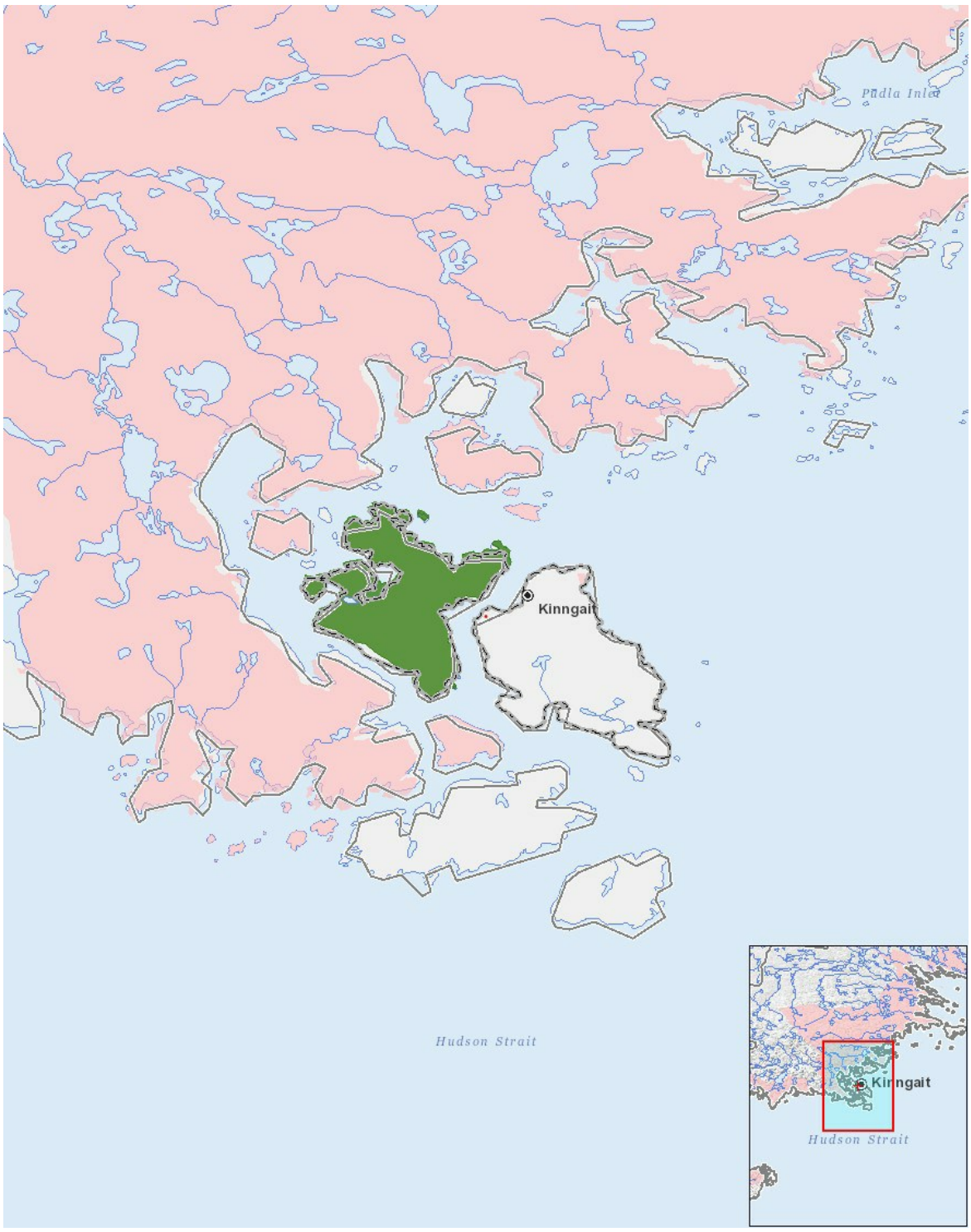
Impacts

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																									
Municipal and Industrial Development		P	P	M	-	P	P	P	P	P	P	P	P		P	P	P	P	P		P	P	U	P	P
Operation																									
Municipal and Industrial Development		P	P	M	-	P	P	P	P	P	P	P	P		P	P	P	P	P		P	P	U	P	P
Decommissioning																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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

Project Location



List of Project Geometries

1	polygon	New Mechanical Wastewater Treatment Plant