

Summary of Baffinland Commitments for the Phase 2 Expansion Project

[As at September 9, 2020]

This document includes:

- Table 1: a list of all ongoing commitments made by Baffinland during the NIRB Phase 2 environmental assessment to date, including: wording of the commitment made; who the commitment was made to/ reference number of final comment; and the agreed upon deadline.
- Table 2: a list of all terms and conditions that Baffinland proposed or agreed to terms and conditions that should be included in the amended Project Certificate 005.

This document will be further updated during the Phase 2 NIRB process to reflect additional commitments or specific terms and conditions that Baffinland agrees should be presented to the NIRB, and also will note any revisions that occur as a result of our ongoing engagements.

Table 1: Summary of Baffinland Phase 2 Commitments to Dates

FWS ID#	Topic	Commitment	Commitment Due Date	Notes
CIRNAC-05	Freshwater Environment	Baffinland shall complete thermal modeling of the Waste Rock Facility and include the results in the Waste Rock Management Plan prior to the conclusion of Water Licence Amendment process, subject to NWB requirements.	Ongoing	Updated Waste Rock Management Plan was submitted on December 31, 2019. Proposed commitments and terms and conditions may change as a result.
CIRNAC-07	Freshwater Environment	Baffinland shall confirm the origin of elevated concentrations of aluminum, mercury and copper in Shake Flask Extraction test results for rock materials sourced from quarry and borrow pits for road / railway construction, and develop and implement an appropriate water quality monitoring and management strategy for railway corridor rock quarries as part of water licensing. The monitoring results shall be compared with the FEIS Addendum predictions and appropriate mitigation measures shall be identified and implemented.	Post PC Amendment	CIRNAC 2 NEW aligns with response to CIRNAC-07.
DFO 3.3	Marine Environment	Baffinland will implement the following requirement for vessels serving the Mary River Project: Once advised of the presence and location of bowhead whales, Masters of project ships operating within the RSA will be instructed to exercise due caution in order to minimize the likelihood of interaction with the mammals. In such events, Masters will be authorized to adjust speed or alter course within safe and prudent navigational constraints to avoid to the extent possible interaction with bowhead whales.	Post PC Amendment	Baffinland notes that the surveillance measures implemented in the Gulf of St Lawrence, as referenced by DFO, are to spot right whales and implement the 10 knot speed restriction. This additional mitigation measure is not required in the RSA as a blanket 9 knot speed limit is in place for the entire season. The only mitigation measure more restrictive than the speed limit is a 15 day shut down for non-tended fixed gear fisheries. Again, this is not applicable to Mary River operations. Baffinland strongly urges DFO to consider the commitment provided above and work with Baffinland to implement it.
DFO 3.4	Marine Environment	Environmental and ecological criteria for the opening of the shipping season is described in the Shoulder Season Shipping Operational Guide. The following clarifications will be added to the Shoulder Season Shipping Operational Guide to reflect the environmental and ecological conditions for closing the shipping season. <ul style="list-style-type: none"> • Environmental - The formation of fastice along the shipping route will trigger the end of the shipping season. • Ecological - There are no ecological triggers to close the shipping season, however, monitoring and adaptive management will be applied to ensure no significant impacts occur. 	Post PC Amendment	Seals - During the Fall Season Seals are just beginning to establish breathing holes in the ice as part of their development of an overwinter territory, but this is not considered a critical life cycle period. Seals may avoid establishing breathing holes along the shipping route during this period, but this would be limited to general area of the ship path, which is minimal in extent. Seals do not start denning until January when enough snow is available on the ice for them to build a den. Shipping would not overlap with the denning period. Narwhal- The fall shoulder season will overlap with the outmigration of narwhal throughout October and November. Aerial surveys are planned each year to confirm no entrapment events have occurred, and to inform adaptive management, should it be required.
DFO 3.5.1.	Marine Environment	During Phase 2 Operations, Baffinland commits to using the walrus haul out buffer zone guidelines set by the US Fish and Wildlife Service (USFWS) and the US Federal Aviation Administration (FAA).	Post PC Amendment	Per FWS Response

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DFO 3.5.2	Marine Environment	Baffinland will not break ice in closed embayment's and inlets where landfast ice exists. Should other areas of high seal density be encountered along the shipping route during the shoulder season, the Ship Board Observer Program will record and report this for potential adaptive management actions. This may include notices to Masters of project ships operating within the RSA to exercise due caution in order to minimize the likelihood of interaction with the mammals. In such events, Masters will be authorized to adjust speed or alter course within safe and prudent navigational constraints to avoid to the extent possible interactions with high density seal areas. See other commitments related to the SBO Program in response to DFO 3.5.3 and 3.5.6.	Post PC Amendment	Post FWS Commitment.
DFO 3.5.3	Marine Environment	Baffinlands Ship Board Observer Program will confirm the current predictions that no seal strikes will occur as a result of project shipping. Should monitoring demonstrate that the predictions are incorrect, Baffinland will implement adaptive management measures in consultation with the MHTO and MEWG.	Post PC Amendment	Baffinland will not provide an updated estimate of ship strikes on seals based on a study that covers a period in time and location that are fundamentally different from what is proposed under Phase 2.
DFO 3.5.4	Marine Environment	Baffinland is not proposing to ship during sensitive lifecycle periods for seal, which typically occur in the months between March and May. No additional mitigation measure is necessary for the current Shoulder Season Shipping Guide.	Post PC Amendment	
DFO 3.5.5	Marine Environment	<ul style="list-style-type: none"> • Before commencing shipping, Baffinland must receive written confirmation from the MHTO that the floe edge is no longer being used by community members. No transits to Milne Port will be permitted until confirmation is received. • Baffinland will not break ice during ringed seal denning, pupping, nursing or mating periods and will manage its vessel traffic during the Eclipse Sound narwhal summer stock spring migratory period. • Furthermore, Baffinland has established several precedent-setting mitigations to minimize potential effects on ringed seal as a result of ice breaking activities, including: <ul style="list-style-type: none"> • Restricting the number of transits during the early shoulder season where ice concentrations above 3/10 cannot be avoided. • Implementation of speed restrictions (9 knots) that are more conservative than Government of Canada guidelines for speed reduction to 10 knots. • Local Inuit Marine Wildlife Observers (MWOs) will be stationed on all icebreaker transits in the RSA and are responsible for alerting vessel Master and crew to observed potential risk of ship strikes on pinnipeds and other marine mammals, or record other signs of disturbance to marine wildlife. <p>Implementation of a 40-km buffer zone around the floe edge at the entrance of the RSA to reduce interactions between Project vessels and marine mammals (vessels entering the RSA during the spring shoulder season must wait 40 km to the east of the RSA until clearance from the Port Captain is obtained to enter the RSA).</p>	Post PC Amendment	
DFO 3.5.6	Marine Environment	Baffinland will updated the Marine Monitoring Program to make it clear what behavioral indicators are recorded during the Ship Board Observer Program. These indicators include breaching, flipper slapping, lob tailing, diving, fluking, blowing, resting, looking, feeding, hauled-out, milling, swimming, surfacing. Other recorded information includes initial distance from vessel, minimum distance from vessel (i.e. closest point of approach), and bearing from vessel and movement direction. These methods and indicators are currently described in annual Ship Board Observer Reports.	Prior to Phase 2 Shipping	

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DFO 3.6.2 DFO 3.6.6	Marine Environment	Baffinland is committed to undertaking an end-of-season aerial survey of the LSA for each year shoulder season shipping occurs, to confirm no narwhal entrapment events have occurred. Baffinland will work directly with the Mittimatilik HTO in implementation of this survey.	Prior to Phase 2 Shipping	Per FWS Response. Mitigation measures are limited, Baffinland has proposed having an icebreaker re-enter the RSA to create an exit pathway, assuming it is safe to do so. It is uncertain if this is a desirable action from the communities perspective. There is also an issue of identifying a natural event from a project affected one. Baffinland suggests the MEWG is an appropriate forum to investigate such an event occurs in the future, and development adaptive mitigation measures, should they be necessary. Baffinland's commitment to annual aerial surveys is for the life of the project.
DFO 3.7.2	Marine Environment	Empirical data on ship noise levels have now been collected as part of JASCO's passive acoustic monitoring program for the Project. These data have been analyzed to calculate LRR for these additional areas in the RSA (Eclipse Sound, North Milne Inlet, Koluktoo Bay). Calculations of LRR associated with ship transits at these representative locations will be presented in a 'technical memorandum' or 'technical response', scheduled for delivery to DFO on February 17, 2020. The technical memorandum will include an analysis to estimate the LRR estimations for Phase 2 shipping operations based on the empirical results calculated for 2018 and 2019 shipping operations.	Prior to Technical Meetings	
DFO 3.7.4	Marine Environment	An analyses will be conducted using data collected during the 2019 shipping season to characterize the degree of conservatism in the sound propagation modelling that has been conducted. Additional AMARs have been deployed and will collect data during the Fall 2019 and Spring 2020 seasons to further this analysis. See response to DFO 3.8.4 for commitment to long term acoustic monitoring.	Post PC Amendment	See commitment to DFO 3.8.4 for long term acoustic monitoring.
DFO 3.8.4	Marine Environment	Baffinland will continue to undertake acoustic monitoring supportive of its operations in accordance with terms and conditions of the existing Project Certificate No. 005.	Post PC Amendment	
DFO 3.9.1	Marine Environment	Baffinland will implement an incidental marine mammal monitoring program with vessel operators calling on Milne Port, which will request incidental observations of marine mammals to be recorded and relayed to Baffinland. In support of this program, Baffinland will develop educational materials for vessel crew to assist in marine mammal identification and data recording. Baffinland will provide a draft of the materials and program for review by the MEWG before they are finalized.	Post PC Amendment	Baffinland and DFO are continuing to discuss commitment wording and will provide an update to the NIRB as it is available
DFO 3.10.2 TC-02	Marine Environment	Baffinland will revise the Ballast Water Management Plan to include a requirement for all vessels to conduct ballast water exchanges (with or without D2 treatment systems) prior to calling on Milne Port, until such a time that ballast water treatment systems are compliant with the D2 standards set by the IMO. Should Baffinland wish to discontinue the practice of exchange plus treatment, Baffinland will provide updated ballast water modelling that reflects the range of salinity that may be present in the ballast water tanks where no exchange occurs.	Post PC Amendment	Baffinland and DFO are continuing to discuss commitment wording and will provide an update to the NIRB as it is available

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DFO-3.10.3, DFO-3.10.4, TC-02, QIA-45, DFO-3.10.4, QIA-44	Marine Environment	Baffinland will implement a pilot ballast water biological monitoring program for ships calling on Milne Port. This program will be designed to reflect a more appropriately scoped form of a ballast water sampling protocol provided by DFO to Baffinland in 2017. This program will include sampling from one ballast tank on a total of five vessels per shipping season. Baffinland remains committed to continue conducting temperature and salinity test sampling of one randomly selected ballast water tank for all vessels calling to Milne Port, and biological sampling in the marine receiving environment to monitor for non-native species in Milne Port and at Ragged Island.	Post PC Amendment	Baffinland is continuing to discuss a resolution to TC-02 regarding the sampling of multiple ballast water tanks in circumstances where ballast water is taken on at multiple locations. Baffinland will mirror any commitment to TC here for DFO.
DFO 3.10.5	Marine Environment	Baffinland will update the AIS monitoring program to describe the process it follows for identifying high-risk biological species discovered through its sampling programs.	Post PC Amendment	Baffinland and DFO are continuing to discuss commitment wording and will provide an update to the NIRB as it is available
DFO 3.10.6	Marine Environment	Baffinland will work with DFO to develop a management and response approach in the event a non-indigenous species is identified during monitoring. This response approach will be added as an attachment to the AIS monitoring program.	Post PC Amendment	Baffinland and DFO are continuing to discuss commitment wording and will provide an update to the NIRB as it is available
DFO-3.12	Freshwater Environment	Baffinland will include the requested information in the application for the Fisheries Act Authorization.	Post PC Amendment	Per FWS Response.
DFO-3.13.1	Freshwater Environment	Baffinland will include the requested information in the application for the Fisheries Act Authorization.	Post PC Amendment	Per FWS Response.
DFO-3.13.2	Freshwater Environment	Baffinland will include the requested information in the application for the Fisheries Act Authorization.	Post PC Amendment	Per FWS Response.
DFO-3.14.1	Freshwater Environment	Baffinland will include the requested information in the application for the Fisheries Act Authorization.	Post PC Amendment	Per FWS Response.
DFO-3.14.2	Freshwater Environment	Baffinland will include the requested information in the application for the Fisheries Act Authorization.	Post PC Amendment	Per FWS Response.
DFO-3.14.3	Freshwater Environment	Baffinland will include the requested information in the application for the Fisheries Act Authorization.	Post PC Amendment	Per FWS Response.
ECCC-FC1 HC-FC-02	Atmospheric Environment	Baffinland will reflect the commitments provided in its response in the Air Quality and Noise Abatement Management Plan following the issuance of an amended Project Certificate. In the interim these commitments will be captured in a commitment register, to be provided to the Board during the Public Hearings. Baffinland does not object to having relevant terms and conditions modified to reflect this commitment.	Post PC Amendment.	Post FWS Commitment
ECCC-FC2	Atmospheric Environment	Baffinland commits to investigate and implement NOX reductions measures, where feasible, and report on this in the 2020 annual air quality report (to be submitted by March 31, 2021).	Post PC Amendment	Post FWS Commitment

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ECCC-FC3 HC-FC-02	Atmospheric Environment	Baffinland will reflect the commitments provided in its response in the Air Quality and Noise Abatement Management Plan following the issuance of an amended Project Certificate. In the interim these commitments will be captured in a commitment register, to be provided to the Board during the Public Hearings. Baffinland does not object to having relevant terms and conditions modified to reflect this commitment.	Post PC Amendment	Post FWS Commitment
ECCC-FC4	Marine Environment	Baffinland commits to investigate and implement black carbon reduction measures, where feasible, and report on this in the 2020 annual air quality report (to be submitted by March 31, 2021). The investigation will consider the use of distillate fuels as a reduction measure for local black carbon emissions.	Ongoing	Post FWS Commitment
ECCC-FC-5	Marine Environment	Baffinland remains committed to updating the Phase 1 Waste Rock Management Plan and evaluating the appropriateness of the 0.2% cutoff for PAG classification, irrespective of the Phase 2 approvals process.	Ongoing	Updated Waste Rock Management Plan was submitted on December 31, 2019. Proposed commitments and terms and conditions may change as a result.
ECCC-FC6 WWF-FWS 06	Marine Environment	Baffinland commits to conduct additional Arctic diesel fuel spill modelling to account for shoulder season shipping and update the SSRP as necessary (Appendix G). This will occur prior to the 2020 shipping season.	Prior to Phase 2 Shipping	Per FWS Response.
ECCC-1 NEW	Atmospheric	Baffinland to provide the preliminary feasibility assessment 30 days prior to a Public Hearing, and a follow up report in the 2020 Annual Report (which wouldn't be until 2021)		Note - Baffinland is preparing a memo in response to ECCC-1 NEW that will include a preliminary evaluation of black carbon mitigation measures that may be used by the Project.
GN-01	Project Description	N/A	Post PC Amendment	Baffinland is no longer pursuing trucking of iron ore in excess of 6Mtpa during the Phase 2 construction period. This commitment will require modification.
GN-02 WWF-FWS 07 MHTO-03	Terrestrial Environment	<p>Baffinland is committed to work with the GN to develop a mutually agreed upon research agreement (also referred to as the Research and Relationship Agreement) that includes the following aspects, which are based on GN's internal budgeting and community consultation schedules for its North Baffin Regional Monitoring Program:</p> <ul style="list-style-type: none"> • By July 30 of each year, the GN to share a preliminary proposal with Baffinland (the "GN Preliminary Proposal") outlining the planned activities that may be carried out as part of its North Baffin Regional Monitoring Program for the twelve-month period commencing on January 1 of the following year, which would be subject to any future revisions arising as a result of consultation by the GN with communities and the Qikiqtani Inuit Association. • By October 1 of each year, the GN to share a final proposal with Baffinland (the "GN Final Proposal") based on the GN Preliminary Proposal and including any revisions as a result of consultation. • Baffinland would provide its total annual financial contribution to GN on or before November 30 of each year following review and acceptance by Baffinland of a GN Final Proposal. The financial contribution could include monetary and/or in-kind support. • Collaboration as possible regarding scientific peer-reviewed research into mitigative measures or potential disturbance effects, as related to the Mary River Project. • GN will provide Baffinland with reports on work carried out under its North Baffin Regional Monitoring Program. • GN-generated data needed to support Baffinland's assessment, monitoring and mitigation programs for the Mary River Project (which would remain Baffinland's sole responsibility) will be released upon request by GN to Baffinland, in accordance with the terms and conditions of the Research and Relationship Agreement. 	TBD	<p>Note - Baffinland and the Government of Nunavut commit to complete a caribou research agreement and data sharing agreement prior to the Public Hearing for Phase 2. Should this not be possible, an Agreement in Principle will be developed to identify a timeline for the anticipated completion of both agreements.</p> <p>The caribou research agreement is currently with BIM for review.</p>

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GN-03	Terrestrial Environment	<p>Baffinland commits to build the North Railway with the general specifications for the purposes of increasing caribou permeability</p> <ul style="list-style-type: none"> • Use of Type 8 over Type 12 fill material for the entire alignment • For embankment heights under 4 meters the slope ratio will be 1V:2H; for embankment heights over 4 meters the slope ratio will remain 1V:1.5H <p>Baffinland commits to a pilot program that will investigate the effectiveness of gentler slopes on caribou crossing. To evaluate this pilot program, Baffinland will support regional studies of caribou movements to assess caribou responses to the railway. The assessment of this pilot program's success shall be based on results from studies that have statistical power to detect Project effects exceeding those predicted in the FEIS addendum. The details of this program include:</p> <ul style="list-style-type: none"> • The gentler slopes will be built with a slope ratio of 1V:3H • The total amount of fill required to build the North Railway will remain unchanged from currently proposed i.e. the fill material required to build sections with a slope of 1:3 will be acquired by reverting other areas previously allocated a 1V:2H slope (at an embankment height of 4m and below) back to a 1V:1.5H slope • The pilot program will include a minimum of 10km of 1V:3H slopes • Members of the Terrestrial Environment Working Group will be required to identify and agree on the areas to build the gentler (1V:3H) slopes, and where to revert back to the steeper (1V:1.5H) slopes. • The pilot program shall not prevent fish passage or cause serious harm to fish. • This program will be implemented prior to and during the North Railway's construction. <p>This program will not preclude Baffinland's implementation of its Additional Level Crossing Decision Matrix.</p>	Post PC Amendment	Baffinland and GN are continuing to discuss commitment wording and will provide an update to the NIRB as it is available
GN-04	Terrestrial Environment	Baffinland will update the Additional Level Crossing Construction Decision Matrix to include advice from the Terrestrial Environment Working Group (TEWG).	Post PC Amendment	Post FWS Commitment
GN-05	Terrestrial Environment	BIMC will update the Terrestrial Environment Mitigation and Monitoring Plan to reflect that it will undertake research to estimate the Zone(s)-of-Influence (ZOI) and disturbance coefficients (DC) exerted by the Project on caribou, and shall provide to NIRB updated estimates of cumulative habitat losses for caribou, at least every 5 years.	Post PC Amendment	Post FWS Commitment

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GN-06	Human Environment	<p>1. The Proponent shall work with the GN through their MOU to promote greater female employment at the Mary River Project, with the goals of a) employing and retaining more women with the Project including in more senior level positions, and b) attracting more women into the mining industry more generally.</p> <p>2. The Proponent will assess the ongoing implementation of current and proposed gender-specific initiatives, including their successes and challenges, in conjunction with monitoring female employment rates at the Project through its Socio-Economic Monitoring Plan. The Proponent will report to the QSEMC and SEMWG, as appropriate, on the effectiveness of these gender-specific initiatives.</p>	Post PC Amendment	Per FWS Response
GN-07	Human Environment	<p>1. The Proponent will update its Workplace Harassment Policy and Workplace Harassment and Violence Program and include a component on sexual harassment that addresses the unique nature of sexual harassment in the workplace and supports the specific needs of sexual harassment victims. The Government of Nunavut will be engaged in this process. This update will occur within 6 months of amended Project Certificate issuance.</p> <p>2. The Proponent will update its employee orientation program to reflect the revisions in the Workplace Harassment and Violence Program, including components related to sexual harassment in the workplace and bystander intervention. This update will occur within 6 months of amended Project Certificate issuance.</p> <p>3. The Proponent will work with the GN to establish a sub-committee through their MOU to review implementation of Company policies and initiatives regarding sexual harassment in the workplace, subject to all applicable privacy laws, and to explore potential new ways to address this issue at the Mary River Project. The proponent and GN will move forward on this issue through the MOU within 6 months of issuance of the Project Certificate. Baffinland Human Resource Staff will be available to specifically address this topic through the MOU subcommittee as and when required.</p>	Post PC Amendment	Per FWS Response
GN-08	Human Environment	<p>1. The Proponent shall work with the GN through their MOU to promote employment opportunities with the Mary River Project across all Qikiqtani communities, consistent with relevant provisions of the Mary River Inuit Impact and Benefit Agreement. Initiatives may include training opportunities in non-point of hire communities, posting employment and training opportunities in all Qikiqtani communities, communicating with unsuccessful job applicants, and continuing to provide travel for all Inuit Baffinland employees from across the Qikiqtani Region to a point of hire community.</p>	Post PC Amendment	Per FWS Response.
GN-09	Human Environment	<p>1. Baffinland will submit to NIRB a Safety Protocol and a Communications Plan prior to construction of the North Railway or within 18 months of issuance of the Project Certificate; and a Safety Protocol and a Communications Plan prior to operation of the North Railway. The protocols and plans will include:</p> <p>Safety Protocol and Communications Plan – prior to railway construction or within 18 months of Project Certificate issuance:</p> <p>a. Complete a risk register prior to construction</p>	Post PC Amendment	Post FWS Wording

FWS ID#	Topic	Commitment	Commitment Due Date	Notes
		<p>b. Address safety issues related to both the road and rail, during the construction period</p> <p>c. Be implemented by the Company, its contractors, and non-Project land users</p> <p>d. Integrate Baffinland’s existing Hunter and Visitor Site Access Procedure</p> <p>e. Communicate to land users the rules and procedures for using the Tote Road and other project roads, visiting the project site, and the risks associated with the road and the North Railway during the construction period</p> <p>f. Include Rules of the Road, such as speed limits, signs on the road, right of way protocols, safety restrictions regarding the discharge of firearms in proximity to the road and rail construction areas, etc.</p> <p>g. Identify potential hazards on the road such as mine traffic, snow drifts, steep hills, sharp corners, construction areas, and washouts</p> <p>h. Identify the location of safety features such as rail crossings, emergency shelters and safe access routes to the Mine Site and Milne Port</p> <p>i. Identify the location of safety features such as emergency shelters and safe access routes to the Mine Site and Milne Port, and construction shelters and accommodations</p> <p>j. Be developed in consultation with the North Baffin Communities, with a particular focus on the Communities of Pond Inlet and Igloolik</p> <p>k. Identify the means and frequency of communicating the safety protocol, and to whom the information will be communicated</p> <p>Safety Protocol and Communications Plan – prior to railway operation</p> <p>a. Complete a risk register prior to operation</p> <p>b. Address safety issues related to both the road and rail, during operations</p> <p>c. Be implemented by the Company, its contractors, and non-Project land users</p> <p>d. Integrate Baffinland’s existing Hunter and Visitor Site Access Procedure</p> <p>e. Communicate to land users the rules and procedures for using the Tote Road and other project roads, crossing the North Railway, visiting the project site, and the risks associated with the road and the North Railway</p> <p>f. Include Rules of the Road, such as speed limits, signs on the road, right of way protocols, safety restrictions regarding the discharge of firearms in proximity to the road and rail</p> <p>g. Identify potential hazards on the road such as mine traffic, snow drifts, steep hills, sharp corners, and washouts</p> <p>h. Identify potential hazards with the rail line such as train traffic, sharp corners, loading and unloading areas</p> <p>i. Identify the location of safety features such as rail crossings, emergency shelters and safe access routes to the Mine Site and Milne Port</p> <p>j. Identify the location of safety features such as emergency shelters and safe access routes to the Mine Site and Milne Port, and construction shelters and accommodations</p>		

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		<p>k. Be developed in consultation with the North Baffin Communities, with a particular focus on the Communities of Pond Inlet and Igloolik</p> <p>l. Identify the means and frequency of communicating the safety protocol, and to whom the information will be communicated</p> <p>m. Describe how the Operation Lifesaver program will be implemented, including information on when it may be offered, to whom, and how often.</p>		
HC-FC-01		See commitment to ECCC-FC2.		
HC-FC-02	Human Environment	Baffinland will update the Air Quality and Noise Abatement Management Plan with the following text: "Use the existing continuous air quality monitors on site to validate the predictions of NO2 and other air quality contaminants in the EIS moving forward. Share results through reporting mechanisms, such as the annual report. Should exceedances occur beyond the EIS predictions, include an updated human health risk assessment in the annual report."	Post PC Amendment	Post FWS Commitment
HC-FC-03	Human Environment	<p>Baffinland will continue with monitoring of COPCs reported in the country foods risk assessment during all phases (including closure). If increases in a specific COPC are confirmed to be occurring outside or inside (in the closure phase) of the Potential Development Area (PDA) and if country foods could be influenced by those changes, Baffinland will update the human health risk assessment model with the new data. Decisions related to extending the monitoring program to any relevant country foods would be made based on consideration of risk assessment outcomes.</p> <p>Updated modelling would be triggered by changes from any of the monitoring stations where harvesting could occur. Any remodeling effort should also consider changes (or lack thereof) using a distance gradient approach from the edge of PDA: Near (0–100 m); Far (101 –1,000 m); and Control (>1,000 m) and more ecologically relevant distant stations (i.e., those stations located between 100 m and 1,000 m from the PDA boundary). Consideration of change at PDA (closure phase), near sites (0 – 100m) and far sites (100 – 1,000 m), relative to baseline data, and environmental quality guidelines, in conjunction with statistical analyses, would be used to identify the need for supplementary risk assessment modelling.</p>	Post PC Amendment	Per FWS Response
HPI	Human Environment	Baffinland will undertake to encourage students and youth to consider possible careers with Baffinland.	Ongoing	Per FWS Response.
HPI	Human Environment	<p>Baffinland will undertake to promote access to employment for Inuit women.</p> <p>Following the Technical Meeting held in Iqaluit April 8-10, 2019, Baffinland committed to working with the GN through the implementation of the MOU to promote female employment at Mary River.</p>	Ongoing	Per FWS Response
HPI	Human Environment	As part of Baffinland's early engagement in the planning stages for the Phase 2 Project, Mittimatalik raised concerns with respect to year round icebreaking resulting in Baffinland's commitment not to ship in land fast ice	Ongoing	Per FWS Response
HPI	Human Environment	To further Baffinland's goal of meaningful consultation and engagement it has committed to the development of community-specific engagement guidelines. The development of these guidelines will serve to improve the two-way dialogue between the Company and Inuit.	Post PC Amendment	Per FWS Response

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HPI	Human Environment	Baffinland remains committed to ongoing engagement with Mittimatalik throughout the Project's lifetime. As noted in Baffinland's new IQ Management Framework (Baffinland, 2019a), the Company is in the process of developing community-specific consultation guidelines for the North Baffin communities; these will be developed in consultation with individual communities in the near future. As the guidelines are developed, they will be appended to Baffinland's Community and Stakeholder Engagement Plan (TSD-28, Appendix Z).	Ongoing	Per FWS Response
HPI	Human Environment	Pending approval of the Phase 2 Proposal, Baffinland has committed to provide \$1.2 million/year to each of the five North Baffin communities for the life of the mine (\$6 million/year total). These amounts are intended to support socio-economic opportunities, cultural opportunities, and hunter support opportunities.	Post PC Amendment	Per FWS Response
HPI-1	Human Environment	Baffinland will conduct a review of internal procedures related to the conduct of community-focused research and identify areas for potential improvement. Baffinland will update its IQ Management Framework with information on research ethics and will provide clear direction on the procedures to be followed when applying for, securing, renewing, and reporting on research licensing. Baffinland will continue to engage the Nunavut Research Institute (NRI) in this process and will additionally provide NRI with annual IQ work plans for review and comment.	Post PC Amendment	Per FWS Response.
HPI-10	Human Environment	Baffinland is committed to using best efforts to improve its Inuit employment record each year, whether the MIEG has been met or not.	Ongoing	Per FWS Response
HPI-11	Human Environment	Baffinland commits to working with the Hamlet of Mittimatalik: <ul style="list-style-type: none"> • to establish community-specific engagement guidelines, and • to ensure the active participation and representation of Mittimatalik on the Inuit Advisory Panel. 	(a) Ongoing (b) Post PC Amendment	Per FWS Response
MHTO-2a	Terrestrial Environment	<i>Baffinland will undertake geotechnical drilling to further establish technical feasibility for Route 3, but at this time based on a preliminary review Baffinland does not anticipate that such drilling will reveal any fundamental issues with the route. This work will be carried out prior to construction.</i>	Post PC Amendment	<i>Baffinland has selected Route 3 as its preferred deviation alignment. There are no Post PC Amendment conditions required to finalize selection, including the results of geotechnical drilling.</i>
MHTO-2b	Human Environment	<i>Baffinland has committed to the development of Community-specific engagement guidelines. Baffinland believes that the development and implementation of these guidelines will serve to improve the two-way dialogue between the Company and Inuit. These guidelines will be developed in consultation with the MHTO, as well as North Baffin community representatives. As the guidelines are developed, they will be appended to Baffinland's Community and Stakeholder Engagement Plan.</i>	Post PC Amendment	Per FWS Response.
MHTO-3	Terrestrial Environment	<i>Baffinland is committed to continual improvement of its terrestrial monitoring program design, data analysis, and integration of Inuit perspectives and IQ.</i>	Ongoing	Per FWS Response.
MHTO-4a	Marine Environment	<i>Baffinland confirms it is committed to consultation with the MHTO regarding shipping plans.</i>	Ongoing	Per FWS Response.
MHTO-5c	Marine Environment	Baffinland is not proposing any additional shipping routes under the Phase 2 Proposal. This includes the use of Navy Board Inlet and the Northwest Passage.		
MHTO-5e	Marine Environment	<i>Baffinland commits to continue to evaluate the feasibility of the development of a laboratory in Pond Inlet, in consultation with MHTO.</i>	Post PC Amendment.	Per FWS Response See also DFO-3.10.3, QIA-44 (re pilot ballast water biological monitoring program)
MHTO-6a	Human Environment	<i>With the discontinuation of ore haulage under Phase 2, it is possible for Baffinland to develop a policy that ensures the safety of all land users to travel the Tote Road with recreational vehicles, and</i>	Post PC Amendment	Per FWS Response.

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		<i>that of Baffinland employees. Baffinland will look to engage the MHTO in the development of this policy, as well as the timeline for its implementation.</i>		
MHTO-7a	Human Environment	Baffinland is committed to incorporating Inuit knowledge into its identification of indicators and development of thresholds. One example where this is currently being done is at the MEWG, which the MHTO is a member of, which is currently working on the development of early warning indicators for marine mammals.	Post PC Amendment	Per FWS Response.
NRCan-01	Terrestrial Environment	<p>Baffinland commits to:</p> <ul style="list-style-type: none"> • Conducting the summer 2019 mapping program in areas where the railway corridor deviates from the Tote Road, including along the Route 1 deviation alignment. This summer mapping program was completed in summer 2019. • Conducting the winter 2019/2020 drilling program along the deviation route, following the proposed Route 3 deviation alignment, and near the port terminus to obtain additional information on subsurface conditions to inform the final design. • Conducting a pre-drilling program, to be completed by the railway contractor and supervised by BIM's Engineer during the construction period. Boreholes will be advanced into permafrost along the rail alignment prior to the railway earthworks. Boreholes will be used to delineate zones of ice-rich and ice-pore permafrost and to determine the required permafrost treatment prior to making cuts and placing fill for the embankments. • Installing thermistors and other monitoring instruments along the rail alignment including along the Route 3 deviation during the pre-drilling programs to establish baseline conditions prior and during rail construction. 	Post PC Amendment	Per FWS Response
NRCan-02	Terrestrial Environment	<p>Baffinland commits to:</p> <ul style="list-style-type: none"> • Implementing the recommendations to accommodate the 30-year design life provided in the project memorandum 'Analysis of Proposed Rail Line Cut Sections and Port Area Structures Considering a Mine Life of 30 Years' (Hatch, 2019) including those related to pile length embedment and number of piles required for foundations. • Continue to refine the thermal, stability and creep analysis incorporating new data collected during geotechnical investigations and from instrumentation along the railway corridor, along the Route 3 deviation alignment as well the rail alignments outside the rail deviation, to support final design of embankments and bridges. • Consider local factors (such as snow accumulation and presence of water bodies) in the 2D thermal modelling to support final design of embankments, cuts and bridges. • Establish instrumentation along the rail alignment, including along the Route 3 deviation alignment, prior to and during construction to improve characterization of baseline ground conditions, support final design, evaluate impacts due to construction and railway performance, and to inform the implementation of mitigation /maintenance measures when triggers are reached. 	Post PC Amendment	Per FWS Response

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PCA-02	Marine Environment	Baffinland commits to amend the Terms of Reference for the MEWG in collaboration with MEWG Members.	Post PC Amendment	Per FWS Response
PCA-04c	Marine Environment	Should Phase 2 be approved, Baffinland will continue to engage DFO and Parks Canada through the MEWG for the purposes of ensuring our proposed mitigation and monitoring programs are robust, effective, and responsive.	Post PC Amendment	Per FWS Response.
QIA-01 QIA-03, QIA-05, QIA-08, QIA-10, QIA-11	Human Environment	Baffinland and QIA will jointly develop a culturally appropriate component of the Culture, Resources and Land-Use ("CRLU") monitoring program that addresses harvest surveys. Adaptive management measures will be informed by the results of the surveys and the CRLU monitoring program. This development will be completed within 12 months of the issuance of the amendment to the Project Certificate implementing Baffinland's Phase 2 proposal to align with the development and implementation of the CRLU monitoring program.	Post PC Amendment	Commitment made to QIA in relation to proposed TC wording, set out in Tables B and C below.
QIA-01	Terrestrial Environment	Baffinland commits to support a harvester's survey as described by QIA in QIA-01, however, such a study must be led by harvesters, not Baffinland.	Post PC Amendment	Per FWS Response
QIA-02	Terrestrial Environment	Based on input provided during the Crossing Selection Workshop from HTO participants representing Pond Inlet, Igloolik, as well as QIA and GN, the following modifications have been proposed for the design of the North Railway to aid in caribou crossing: <ul style="list-style-type: none"> • 30 level crossings to be installed at locations identified by community representatives during the workshop (subject to Transport Canada and Community Acceptance). • A smoother fill material (Type 8 - 6 inches or less in size) will be used along the entire railway embankment (change from Type 12 - 24 inches or less). • A gentler slope (1:2 ratio) will be used for all portions of the railway embankment between 2 and 4 meters (change from 1:1.5). • A gentler slope will be created at the edges of crossings to assure approach from any angle is safe. • 4 additional plate arch culverts will be installed in areas where the railway embankment is high enough to allow an underpass (10 plate arch culverts were already proposed at fish bearing water crossings, which may also serve to allow passage for terrestrial wildlife throughout the year). 	Post PC Amendment	Per FWS Response
QIA-02	Terrestrial Environment	<ul style="list-style-type: none"> • Baffinland commits to the following mitigation measures with respect to the operation of the railway to reduce interference with caribou: • Temporary speed restrictions may be implemented in areas where caribou have been observed over the previous 24hrs. • Permanent speed restrictions of 30km/hr will be applied to sections with steep hills for train safety. • If large groups of migratory caribou are moving through the area, rail operations will be temporarily suspended to allow caribou to cross the rail line. • In white out conditions, train crews will be required to travel at a speed suitable to stop before hitting an object based on sight distance, i.e. if you can see 50m ahead you need to be able to stop in 25m. 	Post PC Amendment	Per FWS Response

FWS ID#	Topic	Commitment	Commitment Due Date	Notes
QIA-03	Human Environment	<ul style="list-style-type: none"> Baffinland will carry out engagement with the 5 North Baffin communities during 2020 in order to identify, together with Inuit and in consultation with QIA, the specific metrics that Inuit identify should be monitored as part of the CRLU program, and to identify, together with Inuit and in consultation with QIA, thresholds for change that should trigger adaptive management by the company. Baffinland would report on changes and trends in monitoring, based on previous reports. Baffinland will consider adaptive management actions and consult with the community on the best path forward in relation to any changes to CRLU identified through the CRLU monitoring program. For clarity, Baffinland would not only consider adaptive management in the event that effects exceed the FEIS addendum estimations but instead would have regard to triggers for action identified through consultation with the community. 	Post PC Amendment	Per FWS Response
QIA-04	Marine Environment	Baffinland commits to developing a ringed seal monitoring plan that incorporates Inuit perspectives into the design, planning and implementation phases.	Post EA Amendment	Per FWS Response.
QIA-07	Human Environment	<p>Baffinland commits to integrating IQ into the objectives of its terrestrial and marine environmental management plans. Reporting will focus on the topics as outlined in the QIA's original technical comment:</p> <ol style="list-style-type: none"> Show respect to animals; Leave animals alone unless hunting them; Animals are to be used, not wasted; Each animal has its own habitat; and Protect animal habitat. 	Ongoing	<p>Per FWS Response</p> <p>Baffinland's commitment to the Inuit Advisory Panel is provided in QIA-03.</p>
QIA-08	Human Environment	Baffinland commits to develop a risk communication strategy focused on gathering and dissemination of information to Inuit related to the Baffinland Iron Ore Mines Project, and linkages between the Project and human health and ecological risk assessment topics. The strategy will focus on building capacity within community groups to understand the mining process, elements of the mining process and how substances produced from the mining process move in the environment.	Ongoing	Per FWS Response
QIA-21	Freshwater Environment	Implementation of the Water Compensation Agreement, particularly with respect to the integration of IQ, will require a collaborative effort between Baffinland and the QIA to which Baffinland remains fully committed. As a Water Compensation Agreement is required under Section 63 of the Nunavut Waters and Surface Rights Tribunal Act and Article 20 (Part 3) of the Nunavut Land Claims Agreement, Baffinland maintains that a process to establish compensation in respect of Inuit Water Rights exists and will be adhered to outside of the Project Certificate amendment process.	Prior to issuance of Type A Water Licence	
QIA-22	Corporate Environment	Unless otherwise approved by the NIRB, in any given day, the total number of ore haul truck transits along the Milne Inlet Tote Road should not exceed 280 for the duration of the Phase 2 construction period.	Post PC Amendment	Post FWS Commitment
QIA-24 QIA-26	Corporate Environment	The final monitoring plan for the operations phase of the railway will be finalized following completion of the construction monitoring phase, when data collected has been analyzed and final recommendations can be provided. Adaptive management will be incorporated into the rail geotechnical monitoring program, to the extent practical.	Post PC Amendment	Per FWS Response
QIA-31	Corporate Environment	Regarding the North Railway, Baffinland is committed to providing a construction plan that indicates specific monitoring locations and site-specific conditions that would lead to additional monitoring locations, and what construction monitoring results would trigger additional monitoring during	Post PC Amendment	Per FWS Response.

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		<i>operations which will be provided through the water licensing and Commercial Lease. These monitoring programs are currently being incorporated into an update to the Surface Water and Aquatic Ecosystems Management Plan that will be provided to the Nunavut Water Board in advance of the NWB technical meeting on November 12-13, 2019.</i>		
QIA-33 QIA-34 QIA-35 QIA-36	Human Environment	<i>Baffinland will work with QIA to develop an updated Inuit Training Plan that covers the period between Phase 2 construction and the first three years of operations. This plan will provide updates on programs that will be offered and how Baffinland intends to maximize Inuit engagement with the Project. This updated plan will be developed within six months of issuance of the amended Project Certificate.</i>	Post PC Amendment	Per FWS Response.
QIA-37	Human Environment	<i>Baffinland commits to continue to work with QIA to mitigate negative impacts and enhance positive Project opportunities and benefits through the Mary River IIBA.</i>	Ongoing	Per FWS Response
QIA-38	Human Environment	<i>Baffinland commits to the development of socio-economic monitoring thresholds and actions, in consultation with the Mary River Socio-Economic Monitoring Working Group (SEMWG). Once finalized, these will be reflected in an updated Socio-Economic Monitoring Plan.</i>	Post PC Amendment	Per FWS Response.
QIA-39	Human Environment	<i>Baffinland commits to continue to work with QIA to mitigate negative impacts and enhance positive Project opportunities and benefits through the revised IIBA.</i>	Ongoing	Per FWS Response
QIA-41	Freshwater Environment	<i>The Tote Road Monitoring Program will be expanded to include the future railway development, both in proximity to the existing Tote Road Monitoring Program locations and along the rail route deviation from the Tote Road. Baffinland has committed to long-term monitoring of water quality within the Northern Transportation Corridor with the Tote Road Monitoring Program to assess the potential for project-related effects on water quality. Until monitoring of water quality indicates the potential for the Project to have an effect on water quality, the expansion of monitoring to include sediment quality and biota in Phillips Creek is not necessary. Should impacts to Arctic char populations be identified through the AEMP studies, the source of these effects will be evaluated through review of all potential variables including sedimentation. Baffinland will continue to utilize the 1mm threshold for sedimentation effects.</i>	Post PC Amendment	Per FWS Response.
QIA-42	Freshwater Environment	<i>Baffinland has committed to continue to address existing fish passage issues on the Tote Road, and to address fish passage issues on the railway during the design phase, with verification monitoring post-construction. Baffinland will evaluate fish passage along the alternative rail line but this may not be done before the November NWB technical meetings. This is mainly an issue for the Fisheries Act authorization.</i>	Post PC Amendment	Per FWS Response.
QIA-43	Terrestrial Environment	<i>Baffinland has committed to conducting a desktop review of available data to evaluate the hydrological, geomorphological and sediment transport regime at the Project site.</i>	Post PC Amendment	Per FWS Response
QIA-45	Marine Environment	<i>Baffinland has committed to implementing a pilot ballast water biological monitoring program for ships currently only subject to the D1 standard (open water exchange). This program has been designed to reflect a more appropriately scoped form of a ballast water sampling protocol provided by DFO to Baffinland in 2017 and will include sampling from one ballast tank on a total of five vessels per shipping season. Baffinland remains committed to continue conducting temperature and salinity test sampling of one randomly selected ballast water tank for all vessels calling to Milne Port, and biological sampling in the marine receiving environment to monitor for non-native species in Milne Port and at Ragged Island.</i>	Post PC Amendment	Per FWS Response See also TC-02, DFO-3.10.3, QIA-44

FWS ID#	Topic	Commitment	Commitment Due Date	Notes
QIA-46	Marine Environment	Baffinland will continue to work with members of the MEWG on the selection of appropriate Early Warning Indicators (EWIs) for noise impacts on marine mammals, for implementation prior to the start of Phase 2 shipping.	Ongoing	Per FWS Response.
QIA-47	Marine Environment	Baffinland provided a detailed Draft Communication Protocol as part of the Phase 2 submission. The communication protocol is considered a live document, and will be updated on an annual basis, as needed, based on feedback about the effectiveness of the communication system received by MHTO during annual pre- and end-of-season shipping meetings. Additional communication tools or frequencies may also be adjusted ad hoc throughout the shipping season to address real-time concerns, which would again be captured in annual updates to the protocol as needed.	Ongoing	Per FWS Response
QIA-48, TC-04	Human Environment	Baffinland will ensure there is a consistent description of ice conditions amongst its relevant management plans and standards of practice and that these terms are translated to Inuktitut for use more generally. Baffinland commits to providing dates and information on the conditions under which the shipping season was opened and closed each season in its Annual Report to NIRB.	Ongoing	Per FWS Response
QIA-50	Marine Environment	Baffinland formally commits to not having vessels go into the North Water Polynya (Pikialasorsuaq), subject to vessel safety. This commitment will be recognized in the Shipping and Marine Wildlife Management Plan and the Standing Instructions to Masters.	Post PC Amendment	Per FWS Response
QIA-53	Marine Environment	BIM does recognize that there may be interactions between its vessels and other activity outside the RSA and agrees to participate as a key stakeholder in regional federal government initiatives and programs including federal initiatives aimed at evaluating regional cumulative effects in the Eastern Canadian Arctic.	Post PC Amendment	Per FWS Response
QIA-NEW	Terrestrial Environment	Baffinland will continue to comply with the existing QIA caribou protection measures and will work with relevant IPG's as well as the TEWG and Inuit Advisors to develop a Caribou Protection Map and project protection zones, if and where appropriate to enhance caribou protection. Development of any Caribou Protection Map or project protection zones will take into account all relevant available IQ and scientific information, including results of an IQ study of caribou use with HTOs and QIA to be carried out through the CRLU Monitoring Program;	Post PC Amendment	Post FWS Commitment
TC-01	Corporate Environment	Baffinland will contact Transport Canada's NPP Office prior to the submittal of any information to confirm regulatory requirements under the CNWA, should the project be approved to proceed.	Post PC Amendment	Per FWS Response
TC-02	Marine Environment	Transport Canada appreciates the efforts by BIM to ensure current regulations are followed with respect to their plans for ballast water management. Given the learning curve associated with use of ballast water treatment systems, for Phase 2, Transport Canada (TC) in consultation with Fisheries and Oceans Canada (DFO), recommends, in conjunction with present sampling and testing protocols being proposed/adopted [NTD - will be summarized in complete package] by BIM, that BIM implement a ballast water compliance sampling plan based on a risk-based targeting methodology to be developed in consultation with DFO and TC. Such a risk-based methodology should be applied to evaluate the risk of all vessel ballast water management (D1, D2) with subsequent salinity and D-2 biological compliance sampling conducted on vessels identified as high or very high risk. The respective risk-based methodology and associated ballast water compliance sampling plan will be developed in consultation with DFO and TC following completion of DFO's Project-specific sampling conducted on a subset of vessels calling to Milne		

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		<p>Port. The risk-based methodology and associated ballast water compliance sampling plan should include a consideration of other compliance initiatives or research being undertaken elsewhere by TC relative to implementation of the D-2 standard.</p> <p>Sampling conducted that supports building a body of knowledge for D-2 treatment systems, beyond biological compliance sampling conducted on high risk and very high risk tanks, should not compromise Baffinland's ability to transport annual ore quantities as approved under a modified Project Certificate No 005. Understanding that the rationale for this program is tied to a learning curve associated with the use of ballast water treatment systems, the compliance sampling program and risk based methodology will be adapted as deemed necessary based on the results of the program</p>		
TC-04	Corporate Environment	For the purposes of shoulder season vessel traffic management, Baffinland considers uninterrupted transits through ice concentrations of 3/10 or less as the open water shipping season. This will be considered in any relevant management plans or operating procedures.	Post PC Amendment	Per FWS Response
TC-05	Marine Environment	Baffinland will make the recommended change from TC-05 to the Spill at Sea Response Plan (SSRP).	Post PC Amendment	Per FWS Response.
TC-06	Marine Environment	Baffinland will update the SSRP to designate additional Tier 2 response equipment at Milne Port to enable a dual response as proposed by Transport Canada.	Post PC Amendment	Per FWS Response.
TC-07	Marine Environment	Baffinland agrees that the use of lifeboats should be avoided and will be removed as part of the spill response equipment on pages 88 and 103 of the SSRP.	Post PC Amendment	Per FWS Response
TC-08	Marine Environment	Baffinland will update the SSRP to make it clear no oil discharge is permitted in Arctic waters per the ASSPPR.	Post PC Amendment	Per FWS Response
WWF-FWS 01	Marine Environment	<p><i>Baffinland is committed to the development of Early Warning Indicators but must reiterate this is not a conventional undertaking and all members of the MEWG are expected to provide meaningful input.</i></p> <p><i>As Phase 2 levels of shipping are not expected to occur before 2022 Baffinland is confident that Early Warning Indicators will be developed by that time based on a rigorous investigation of IQ and Inuit perspectives, scientific literature, and the expert opinions of MEWG members.</i></p>	Post PC Amendment	Per FWS Response
WWF-FWS 02	Corporate Environment	<i>The NIRB has already initiated the development of the Mary River Monitoring Framework for attachment to Project Certificate 005, circulating a draft Appendix A Framework for public comment in 2017. Baffinland supports this initiative and will continue to participate in the development process following the completion of the Phase 2 reconsideration process.</i>	Ongoing	Per FWS Response
WWF-FWS 04	Marine Environment	Baffinland commits to take part in a Marine Spatial Planning exercise, should an appropriate regional body lead the initiative.	Post PC Amendment.	Per FWS Response.
WWF-FWS 08	Atmospheric Environment	<i>Baffinland is committed to developing a comprehensive Climate Change Strategy. A critical component of this strategy will relate to the marine environment, where important developments are occurring at the international level that our world class fleet of vessels and ship contractors are poised to comply with, including the 2020 Sulphur Cap and a potential ban on Heavy Fuel Oil in the Arctic.</i>	Post PC Amendment.	Per FWS Response.

FWS ID#	Topic	Commitment	Commitment Due Date	Notes
NEW	Terrestrial Environment	Baffinland has selected Route 3 as its preferred deviation alignment. There are no Post PC Amendment conditions required to finalize selection, including the results of geotechnical drilling.	Post PC Amendment	Commitment made during Final Public Hearings
Commitments from Baffinlands Response to Interveners Technical Comment Updates				
DFO 3.1.2	Marine Environment	Baffinland can confirm that it will not surpass the number of vessels described and assessed in the Phase 2 FEIS Addendum to ship an additional 20% of ore over 12 Mtpa in the maximum operational flexibility scenario. For clarity, this is a limit of 176 ore carriers, 12 freight vessels and 12 fuel vessels.	Post PC Amendment	
DFO 3.2.1	Marine Environment	<p>Baffinland commits to provide a summary of the following information as part of its annual reporting requirements, and in preliminary field reports within 35 days of Spring shoulder season shipping activities commencing and 15 days of Fall shoulder season activities ending:</p> <ul style="list-style-type: none"> i. marine monitoring programs, ii. determinants for opening and closing the shipping season, iii. ecological and cultural (or "Inuit use") factors that influence shipping activities iiii. other information, as requested by DFO and other regulators and key stakeholders, relevant to the marine environment <p>The requirement for, and format of, these reports will be included in the final Marine Monitoring Plan, should Phase 2 be approved. Additional information requested after submission of the preliminary field report is to be provided by Baffinland as a memo within 35 days and will be included in Annual Reporting.</p>	Post PC Amendment	
DFO 3.2.2	Marine Environment	<p>Baffinland commits to updating the Draft Early Shipping Season-Operational Guide, to better characterize considerations used in determining the nominal shipping season.</p> <p>See response to DFO 3.2.2 for the commitment to report on determinants of opening and closing the shipping season.</p>	Post PC Amendment	
DFO 3.3.3	Marine Environment	Baffinland commits to collecting acoustic data in the RSA using AMARs to characterize the degree of conservatism in the sound propagation modelling, at an appropriate frequency for the duration of the Phase 2 construction and operation periods. Baffinland will collaborate with Inuit and DFO on the development of the draft program prior to submission to the MEWG for additional advice and recommendations. Recommendations from MEWG members will be treated consistent with the consensus-based decision requirements of the final updated MEWG Terms of Reference. Baffinland commits to updating the marine monitoring plan (MMP) with this long-term monitoring plan, should Phase 2 be approved.	Post PC Amendment	
DFO 3.4.1	Marine Environment	Baffinland has provided a draft Marine Monitoring Plan (MMP) as part of the Phase 2 review process. Should Phase 2 be approved, Baffinland will update this Plan to reflect all relevant commitments and terms and conditions.	Post PC Amendment	
DFO 3.4.1	Marine Environment	Rather than develop a separate, stand-alone monitoring plan specific to icebreaking as suggested by DFO, Baffinland will include a specific section relevant to icebreaking and shoulder season shipping activities in the MMP. Survey methodology and indicators (including rationale) will be determined in consultation with the MEWG, of which DFO is a member. Recommendations from MEWG members will be treated consistent with the consensus based decision requirements of the final updated MEWG Terms of Reference.	Post PC Amendment	

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DFO 3.4.1	Marine Environment	An updated draft MMP will be provided to the MEWG for comment and the NIRB within 180 days of issuance of an amended Project Certificate, should Phase 2 be approved. Baffinland commits to continue working with DFO and the MEWG to finalize the Plan.	Post PC Amendment	
DFO 3.4.3	Marine Environment	Baffinland commits to produce a response plan for the potential event of an ice entrapment, should this be observed during the annual end of season clearance surveys. This plan will include action level triggers and associated response actions. This plan will be developed in consultation with the MHTO and DFO, understanding that these two groups are ultimately responsible for determining the appropriate course of action should an entrapment event occur.	Post PC Amendment	
DFO 3.5	Marine Environment	Baffinland will prepare and submit to DFO a literature review of ship-based marine mammal remote monitoring systems. This literature review will include a summary of commercially available remote wildlife monitoring systems that could be installed on vessels to supplement existing marine mammal monitoring programs and enhance detection of ship strikes on marine mammals. The remote monitoring systems identified in this literature review will inform adaptive management, should the need be triggered. For clarity, in the event of a ship strike on a marine mammal, a single event, although unlikely based on present mitigations (i.e. speed restrictions), would trigger an adaptive management response.	Prior to Public Hearing	
DFO 3.5	Marine Environment	Baffinland will implement an incidental marine mammal monitoring program with vessel operators calling on Milne Port, which will request incidental observations of marine mammals to be recorded and relayed to Baffinland. In support of this program, Baffinland will develop educational materials for vessel crew to assist in marine mammal identification and data recording. Baffinland will provide a draft of the materials and program for review by the MEWG before they are finalized.	Post PC Amendment	
DFO 3.6.1	Marine Environment	Project vessels are limited to releasing ballast water at one of the three anchorage locations at Milne Port, or while berthed at the ore dock. Further, prior to any ballast water discharge D-1 compliance testing must be completed. Instructions to not release ballast water prior to arrival at Milne Port and completion of ballast water testing is provided to all ship operators in Baffinland's Standing Instruction to Masters (SITM). This requirement will remain under Phase 2.	Post PC Amendment	
DFO 3.6.2		Baffinland commits to record the Milne Port anchorage and associated coordinates where compliance testing and discharge occurs in the ballast water testing forms, completed by Baffinland's environmental monitors. A dataset with discharge coordinates will be provided to MEWG members as part of annual reporting requirements.	Post PC Amendment	
DFO 3.6.3		Baffinland will require all vessels calling on Milne Port that treat their ballast under the D2 Standard to also perform a ballast water exchange prior to treatment. For ships unable to conduct exchange as specified in Canadian Ballast Water Regulations (e.g. ships on Canadian domestic trips), exchange is to be conducted as specified in revised ABWEZs for Eastern Arctic as per DFO CSAS advice (see DFO 2015, Stewart et al. 2015 and Goldsmit et al. 2019). This updated commitment will be reflected in the 2020 Standing Instructions to Masters.	Post PC Amendment	
DFO 3.6.4		Baffinland will consider discontinuing exchange plus treatment requirements should treatment systems efficacy reach a point that makes the benefits of an exchange plus treatment system negligible. This decision will be made in consultation with TC and DFO, and will be based on a consideration of factors outlined in DFO 2019 (i.e. if ballast water organism concentration or composition, environmental conditions, shipping patterns, proportion of voyages meeting the D-2 standard, or available data describing these conditions change in the future, and updates to global research on ballast systems). In this event Baffinland will update ballast water dispersion modelling to more accurately reflect the spectrum of salinity, temperature, and discharge volumes that can	Post PC Amendment	

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		be expected to be discharged at Milne Port under Phase 2 operations if prior exchange were to be discontinued.		
DFO 3.6.5		<p>Transport Canada appreciates the efforts by BIM to ensure current regulations are followed with respect to their plans for ballast water management. Given the learning curve associated with use of ballast water treatment systems, for Phase 2, Transport Canada (TC) in consultation with Fisheries and Oceans Canada (DFO), recommends, in conjunction with present sampling and testing protocols being proposed/adopted [NTD - will be summarized in complete package] by BIM, that BIM implement a ballast water compliance sampling plan based on a risk-based targeting methodology to be developed in consultation with DFO and TC.</p> <p>Such a risk-based methodology should be applied to evaluate the risk of all vessel ballast water management (D1, D2) with subsequent salinity and D-2 biological compliance sampling conducted on vessels identified as high or very high risk. The respective risk-based methodology and associated ballast water compliance sampling plan will be developed in consultation with DFO and TC following completion of DFO's Project-specific sampling conducted on a subset of vessels calling to Milne Port. The risk-based methodology and associated ballast water compliance sampling plan should include a consideration of other compliance initiatives or research being undertaken elsewhere by TC relative to implementation of the D-2 standard.</p> <p>Sampling conducted that supports building a body of knowledge for D-2 treatment systems, beyond biological compliance sampling conducted on high risk and very high risk tanks, should not compromise Baffinland's ability to transport annual ore quantities as approved under a modified Project Certificate No 005. Understanding that the rationale for this program is tied to a learning curve associated with the use of ballast water treatment systems, the compliance sampling program and risk based methodology will be adapted as deemed necessary based on the results of the program.</p>		
DFO 3.6.6		<i>Baffinland remains committed to conducting ship hull biofouling monitoring surveys using an ROV on ore carriers, with focused efforts on areas of the hull and niche areas where biofouling has the greatest potential to occur (e.g. chain lockers, stern tube, rope guard, bottom, rubber side, etc.). The projected number of ore carriers that will be sampled annually will be determined in consultation with the MEWG, of which DFO is a member. Recommendations from MEWG members will be treated consistent with the consensus-based decision requirements of the final updated MEWG Terms of Reference.</i>	Post PC Amendment	Baffinland and DFO are currently developing new commitments that would resolve this issue.
DFO 3.6.7		<p>Baffinland commits to updating the marine monitoring plan (MMP) in consultation with MEWG members and this will be completed prior to the start of the Phase 2 increased shipping season. The updated MMP will detail the revised MEEMP sampling design which includes greater seasonal and spatial coverage and increased sampling effort and sample sizes to address DFO concerns related to achieving sufficient statistical power for detection of project effects (≥ 0.8) (as per recommendations in DFO 2020, pages 4-7).</p> <p><u>Background</u></p> <p>The Aquatic Invasive Species (AIS) Monitoring Program is a biological screening program (species ID, presence/absence data); as such, it does not involve any statistical analysis. The updated MMP will include clear protocols for determining identity and status of species collected as part of this program (as per recommendations in DFO 2019 and DFO 2020 and comments on disposition table provided in June (DFO 3.8.1) and November (DFO 3.10.4). The sampling effort for the AIS Monitoring Program is currently very rigorous.</p>	Post PC Amendment	

FWS ID#	Topic	Commitment	Commitment Due Date	Notes
DFO 3.6.8		Baffinland continues to maintain that the identification of high-risk biological species or groupings of species of concern is the primary responsibility of DFO. Despite this, Baffinland is committed to supporting the development of a trigger list of species and associated response plans through the process outlined in response to DFO 3.6.9 and 3.6.10, and to refining that list with DFO following Phase 2 approval.	Post PC Amendment	
DFO 3.6.9		Baffinland commits to follow the most updated version of DFO's AIS Rapid Response Framework in the event that a nonindigenous species is introduced and/or becomes established.	Post PC Amendment	
DFO 3.6.10		Baffinland commits to work with the MEWG and DFO to establish species-specific Rapid Response Plans. Rapid Response Plans will be developed for species identified as high risk through ongoing NIS monitoring in the receiving environment, the ROV (or any other future) biofouling monitoring program, results yielded from the 2021 biological ballast water sampling pilot program (and any ongoing ballast monitoring), examination of existing invasive species databases and lists in key ecoregions where vessels calling originate from (as per Goldsmit et al., 2020 Global Change Biology), and based on ranking of potential risk using the Canadian Marine Invasive Screening Tool.	Post PC Amendment	
DFO 3.8		Baffinland will provide decision criteria and decision matrix for the selection of water crossing methods for fish bearing watercourses in support of any regulatory permit applications made to DFO.	Post PC Amendment	
DFO 3.9.1		Baffinland will analyze monitoring reports related to the Tote Road existing watercourses crossings and provide comprehensive lessons learned report (for the Tote Road crossings) that would include strategic analysis of what will be done differently to ensure the fish-passage issue will be mitigated, avoided and addressed. This report will be included as part of any regulatory applications made to DFO.	Post PC Amendment	
DFO 3.9.2		Baffinland will provide an updated hydrological assessment of proposed watercourses crossings that includes, but is not limited to, crossing selection and design criteria, flow rates, velocities and discharge, and fish passage. This content will be included as part of any regulatory permit applications made to DFO.	Post PC Amendment	
DFO 3.10.1		Baffinland will provide a detailed water withdrawal plan that includes an in-depth risk analysis informed by site specific fish and fish habitat features for the waterbodies chosen for water withdrawal as supplemental information to water licensing and any DFO Request for Review submission.	Post PC Amendment	
DFO 3.10.2		Baffinland will conduct a thorough localized assessment on the waterbodies selected for water withdrawal in order to adequately assess the potential impacts on the fish habitat resulting from 20% of the 10-year dry unit runoff water withdrawal on fish-bearing watercourses and connecting waterbodies. This assessment will include an assessment of the effects to littoral/shore/riparian areas from the proposed water withdrawal, the specific withdrawal locations proposed for each waterbody including fish habitat in the area and updated rationale on how this level of withdrawal will be an environmentally protective threshold. This content will be included as supplemental information to water licensing and regulatory permit applications made to DFO.	Post PC Amendment	
DFO 3.10.3		Baffinland will provide additional rationale/ assessment to support the assertion that 40% of the 10-year dry unit runoff water withdrawal from non-fish-bearing streams will not negatively affect downstream fish-bearing waterbodies. This content will be included as supplemental information to water licensing and regulatory permit applications made to DFO.	Post PC Amendment	