



Final Written Statement

Phase 2 Proposal – Mary River Project

Baffinland Iron Mines Corporation
Mary River Project
NIRB File No. 08MN053

January 24, 2022

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¹ This document has been prepared for convenience of reviewers and may not list all of Baffinland's submissions.

1 EXECUTIVE SUMMARY

See attached stand alone “Executive Summary of Baffinland Final Written Statement”

2 INTRODUCTION

2.1 Introduction

1. Baffinland Iron Mines Corporation (**Baffinland**) has applied to the Nunavut Impact Review Board (**NIRB or the Board**) pursuant to Section 112 of the *Nunavut Project Planning and Assessment Act (NuPPAA)* and 12.8.2 of the Nunavut Agreement for an amendment to Project Certificate No. 005 for the Phase 2 Project Proposal (the **Project, Phase 2 or Phase 2 Proposal**). Baffinland believes the Project, which is an expansion of its current operation from 4.2 mtpa to 12 mtpa (with operational flexibility), inclusive of the already approved (2012) Mary River Project, and a change to transportation of ore by road to railway through the Northern Transportation Corridor, is a responsible way to meet the needs to sustain the operation in a manner that minimizes environmental and socio-economic risks and maximizes opportunities and economic benefits for Inuit in Pond Inlet, Arctic Bay, Sanirajak, Clyde River, and Igloolik (the **Impacted Communities**), the Qikiqtani Region, Nunavut and Canada as well as our company.
2. Phase 2 is the response to the fact that the Early Revenue Phase approved by NIRB in 2014 was not intended to sustain the operation long term, and the investment capital required to construct the more expensive Steensby Project has not been successfully raised. This expansion builds on Baffinland's history of operations in Nunavut. For Phase 2, Baffinland will leverage its existing knowledge and systems and incorporate all planned mitigations and improvements described in its evidence to ensure the Project meets or exceeds any Board requirements.
3. The Phase 2 Final Environmental Impact Statement (**FEIS**) Addendum and subsequent submissions filed with the Board through the Phase 2 reconsideration review, was the culmination of significant engagement, operational experience, scientific data and IQ collection and expert analysis. The FEIS Addendum consists of a main document together with 28 Technical Supporting Documents, including the Valued Ecosystem Components (**VEC**) and Valued Socio-Economic Components (**VSEC**) assessments. The information contained in the FEIS Addendum addresses the information required by NIRB pursuant to the Mary River EIS Guidelines, reissued in 2015, and forms the basis for the NIRB regulatory process for the Project, as supplemented by the additional evidence filed by Baffinland during the review.
4. Some of the issues raised by Intervenor and parties to the NIRB process (**Intervenor and Parties**) are addressed in this document however, issues raised by Intervenor and Parties were also directly addressed throughout the NIRB process, verbally and in writing.
5. The information provided by Baffinland in the FEIS Addendum and subsequent filings and oral evidence is comprehensive. It ensures the NIRB has sufficient information to make a positive recommendation regarding the Project.

6. Any suggestion that the FEIS Addendum is incomplete or that the Project does not result in net benefits to Inuit and Nunavummiut, or that they are overstated is in no way consistent with the facts on the record. The economic, environmental and social benefits from the Project, including benefits for Baffinland Inuit employees and Inuit employees of our contractors, Impacted Communities, and QIA and NTI are significant and real.
7. There is an inherent level of risk in all activities, but risks do not equal impacts—particularly in the case of the Phase 2 Proposal where significant and precedent setting mitigation measures and monitoring programs have been agreed to and will be implemented.
8. One purpose of the NIRB process is to allow participants the opportunity to understand what has been put forward by the proponent, to articulate their views and provide evidence to support the reasoning behind their views. The evidence filed and spoken to by individuals, Parties, Intervenor and commenters with the Board has revealed that differing opinions, beliefs and perceptions exist within and between the individuals and communities affected by the Project. Baffinland has made its best efforts to work with all participants and will continue to do that. However, it is also acknowledged that full agreement among a diverse group of participants with different mandates and goals is not likely to occur with respect to a project of this size and complexity.
9. Ultimately it is up to the Board to determine whether the Project meets the criteria set out in Article 12.5.5 of the Nunavut Agreement and section 103 of NuPPAA, considering and balancing the social, environmental and economic impacts of the Project on Nunavut, taking into account the interest of all Canadians. Baffinland is confident it has put the best available evidence on the record to address the concerns from participating Inuit, Impacted Communities, Inuit organizations and groups, regulatory authorities and non-governmental organizations and to support the Board in making a favorable recommendation to the Minister.

2.2 Project Setting

10. This assessment occurs within the context of a changing Arctic environment. Changes have been occurring geographically and at the same time as the Mary River Project.
11. Some participants have told Baffinland and the NIRB that they attribute observed changes to the Mary River Project. However, the Board should be cautioned against making a determination about causation on this basis. An observed change does not necessarily mean that Mary River is causing the changes to occur, or significantly contributing to the observed effects.

12. Baffinland readily acknowledges that its operations affect the environment.² This is consistent with assessment predictions for the Early Revenue Phase and Production Increase Proposal. It is not possible to operate a mine without any effects at all – to suggest otherwise would not be honest or transparent. However, Baffinland’s monitoring results support the impact predictions contained within the Early Revenue Phase FEIS Addendum. The only notable exception concerns dust where Baffinland has been transparent in its reporting of exceedances in predictions and our efforts to reverse that trend, however, it is important to note that monitoring programs related to vegetation and water quality continue to confirm the dust is not resulting in any significant and adverse environmental effects.
13. NIRB heard evidence from Inuit participants that wildlife continues to be observed in the Project terrestrial and marine areas, and harvesters continue to carry out successful hunts. A few examples:
- “Hunting-wise, I don’t really see an issue with the mine. Especially with shipping season because I always hear of communities catching whales or selling whale meat, maktaaq.”³*
- “Yeah, I see caribou right across the mine’s camp.”⁴*
14. The Arctic is changing and the NIRB has the difficult task to differentiate project effects from those that are occurring naturally, or are being driven from outside of the Arctic. The caribou population for instance saw a significant decline prior to the development of the Mary River Project, and thanks to IQ we understand this is part of a natural cycle and other natural phenomenon affecting their foraging. IQ also tells us that the caribou will be back, and though there are very low numbers at present, Baffinland has designed the railway with wildlife permeability to caribou at front of mind so that the Project is ready for the return of large numbers of caribou to the Project area, should that occur. Similarly, marine mammals we see in Eclipse Sound and Milne Inlet are affected by climate change, decreases in the food they rely on, increases in the predators that prey on them, changing sea ice, commercial fishing, and more.⁵
15. As mentioned during the November 2021 Community Roundtable by Baffinland,
- “I want to start by, you know, acknowledging ... our stories aren't dissimilar. We've been running aerial surveys to try to understand narwhal abundance in Eclipse Sound for several years now. We had done this in some years before that, but since there was a reported low number of*

²See, for example, NIRB Registry No. 335788.

³ Christopher Hayward (Cape Dorset) Our Inuit Voices Matter, Transcript

⁴ Christopher Hayward (Cape Dorset) Our Inuit Voices Matter, Transcript

⁵ BIM Tech Memo Re Preliminary Summary of 2020 Narwhal Monitoring Programs, April 8, 2021, NIRB Registry No. 3334437, 334440; Baffinland Response to Comments Re Preliminary Narwhal Monitoring, June 17, 2021, NIRB Registry No. 335788; BIMC Response to QIA, DFO and PC Submissions, August 31, 2021; BIM Preliminary 2020 Narwhal Monitoring Update, September 13, 2021, NIRB Registry No. 336783; Update to the Preliminary Summary of the 2020 Marine Mammal Monitoring and 2021 Adaptive Management (Update 2), October 27, 2021, NIRB Registry No. 337190

narwhal in Eclipse Sound by the community of Pond Inlet in 2018, every year since then we've run aerial surveys to try to add more information into the understanding of what's happening.

I spoke about this a few nights ago, and Joe did as well yesterday, that there's our project, and our project is certainly going to have an effect in the area -- and that's what we've spent a lot of this process looking at -- but there's other ... trends that have been observed, and Inuit·Qaujimajatuqangit and the stories of hunters are informing that.

When the quota was set for narwhal in Eclipse Sound in 2016, there was a public hearing. And looking through the notes of that hearing, the transcripts, it's evident that there's ... concerns about shipping, but there's also an acknowledgement that there's a lot of natural variation when it comes to narwhal in Eclipse Sound. Some of the themes that come up in those transcripts are that narwhal don't always go to the same channels, sounds, or inlets, that they travel between Arctic Bay and Eclipse Sound, that in years where there's more narwhal in Admiralty Inlet, there's less in Eclipse Sound.

It also says that when ice breaks up early in Lancaster Sound, more narwhal are usually reported in the Kitikmeot. So that's what we're trying to do at this point in time. We're trying to understand not just what effects our project is having, but what's actually been quite common over the last several decades in Eclipse Sound.

Some of the things we struggle with is that in the year when we had the most shipping occurring with ore carriers and freight and fuel, over 90 vessels came to Milne Port that year. That was also the year our abundance surveys told us the population of narwhal was stable with what had been found in previous aerial surveys and that there was a high level of confidence in that estimate because we had not just used visual observations and had local Inuit on ... those flights helping us make those observations, but we also had cameras on those planes that helped us verify when large numbers of narwhal were observed to count exactly how many were there.”⁶

16. Baffinland further discussed this issue during the public hearings:

“This process that's brought us here over - spanning two years now -- and that's just been the hearing -- has been about investigating, you know, all the different angles that our project -- that the Phase 2 proposal could impact the environment. And it's on us to show how we plan to manage those effects. And ultimately what we want to do is show that this project presents a net benefit to the people of Nunavut, that there are more benefits than there are costs, and the costs in this case are the environmental risks and potential effects in a lot of ways on harvesting.

Now, what's very difficult for us to do and for everyone around this table and in Pond is to try to separate out what effects our project is having or could have and what's happening at scales we can't control.

⁶ Vol. 21, Transcript, 3906-3908

We've heard a couple of times today about climate change, and there are just factors influencing what happens in the Arctic and in our marine area that the project isn't leading.

So, Lucy, I believe you commented on, you know, seal and whale, and are not being as much in your area of Grise Fiord that they used to be. We hear the exact same thing from people from Pond Inlet and hunters from Arctic Bay.

Things are changing. We don't know exactly what's driving those changes all the time, but what we've been doing and what we're committed to doing is implementing monitoring programs to try to understand and separate out what our project may be influencing so that we can manage that.”⁷

17. A similar observation was made during the public hearing by an Inuit employee of Baffinland:

“The weather is always changing around. And I think it really depends on the environment like the weather changing and animals moving around I think has nothing to do with Phase 2 or the ships.”⁸

18. The Hamlet of Sanirajak also gave evidence on this point:

“There have been environmental concerns raised as arguments for why the Phase 2 proposal should not be approved. In particular, the residents of Pond Inlet have indicated that they are concerned about the environmental effects observed, particularly those on Narwhal. It is clear that global warming is having an impact on the Narwhal population. With much more open water, there has been increased predation from killer whales. With the year after year depletion of ice cover that Narwhal need to be safe from killer whales, it is not clear whether in the long term there would be any Narwhal in the area even if the mine were to close. Should Baffinland's Phase 2 proposal not approved and the mine closes followed by all the Narwhal leaving the area because of killer whale predation, the closure of the mine would have been for nothing.”⁹

19. GN has also explicitly acknowledged that a multitude of factors other than industrial activities can influence wildlife and the environment:

“IQ and research show that there are many factors that affect wildlife and the environment such as climate change, harvesting pressures, predation, food availability, cycles in population levels as well as industrial activities”.¹⁰

20. One of Baffinland's employees weighed in on potential influencing factors:

⁷ Transcript, Vol. 17, 3296-3298

⁸ Verna Palluq (Clyde River) Our Inuit Voices Matter, Transcript

⁹ Hamlet of Sanirajak, Final Written Statement, January 10, 2022

¹⁰ Government of Nunavut Final Written Statement, January 10, 2022

*"I enjoy going out hunting with my family and friends, remembering the times I had gone out when I had the opportunity to as a child with my grandfather, grandmother, and uncles. I was always taught to never harvest more than what you need unless you are also harvesting for elders or the community. I have continued to practice this tradition and it brings joy when I can share any catch I do with the community. Overharvesting will create problems with wildlife over time and to make sure this doesn't happen hunters should be monitored when harvesting to get true data and numbers on amount of animals harvested and the location. Often I hear Baffinland being blamed for their animals being harder to harvest, when in reality it is the possibility of over harvesting being done. Not only in Pond Inlet has it been harder to come by seals, as I have noticed this year [in and around Iqaluit] it's been harder to come home successfully with seals than the previous years but also noticed that the seals migrate in different areas where they are sometimes abundant and sometimes not."*¹¹

21. Taken together, the evidence tendered by Baffinland and others supports the view that changes are likely occurring with or without the Project, regardless of whether it is approved, and these are broader issues to manage with implications that must be addressed by all parties.
22. The Project Marine Regional Study Area includes the proposed Tallurutiup Imanga National Marine Conservation Area (**TINMCA**). As confirmed by Parks Canada to NIRB, once established, a key component of the operationalization of the TINMCA will include community and scientific research and monitoring activities within the TINMCA. Taking into consideration the enhanced community based monitoring agreed to between Baffinland and QIA under the Inuit Certainty Agreement and committed to per the Commitment List during the Phase 2 NIRB process, along with the research funded through the TINMCA described in Parks Canada's submission, Fisheries and Oceans Canada (**DFO**) mandated research under the *Oceans Act* and the Integrated Fisheries Management Plan for narwhal in the Nunavut Settlement Area (**NSA**), and Baffinland's own effects monitoring required under the Project Certificate and other regulatory approvals, the Project Marine Regional Study Area will become one of the most studied areas in the Arctic. The large volume of IQ and scientific information that will be made available cumulatively through these efforts will help ensure that effects of the Project, or other changes in the environment unrelated to the Project, are rapidly identified and addressed. Ultimately this will allow for enhanced evidence-based decision making by all responsible Parties for the continued protection of the environment and preservation of Inuit use.¹²

¹¹ Devin Aviugana Support Letter

¹² BIMC Response to QIA, DFO and PC Submissions, August 31, 2021, NIRB Registry No. 336643

23. It is important that the NIRB understand the significant benefits contained within the Phase 2 Proposal, and the capacity building potential these benefits offer for remote communities like Pond Inlet, Arctic Bay, Igloodik, Sanirajak and Clyde River that are especially vulnerable to a changing Arctic. Baffinland submits that these supports as well as the Phase 2 Proposal's contributions towards monitoring in the region can help identify and mitigate the effects of exogenous changes on Inuit and their environment, in addition to preventing negative impacts from the operation of Phase 2.

2.3 Purpose and Need

24. The following is a quote from the Project Proposal:

The Government of Nunavut has focused on mine development as an economic driver and a non-economic catalyst for social change. The Phase 2 proposal will allow the project to continue to address the need to support the NPC's broad planning principles, policies and goals, which include encouraging sustainable economic development, building healthy communities and protecting and sustaining the environment. The project has helped build healthy communities and strengthen partnerships between Baffinland and stakeholders and institutions. The Phase 2 proposal will allow the project to continue to contribute to the development of infrastructure, skills training, employment, and business opportunities in Nunavut as outlined in Parnautit, the Government of Nunavut exploration and mining strategy. In Canada's northern strategy, to strengthen Canada's sovereignty, protect the country's environmental heritage, promote economic and social development, and improve northern government.¹³

25. To achieve these goals, the Mary River Project must be sustainable over the current, medium, and long term. However, investors will only fund the investments if a positive financial return can be achieved and financial risks reduced, and the evidence to date proves this will not happen with the current approach and susceptibility of the Project to variable iron ore price markets¹⁴. Iron ore prices fluctuate significantly due to world-wide economic factors and the Mary River Project is not of a size even, under a 30 mtpa operation, to influence that price. Baffinland recognized that it had to lower production costs to be sustainable in both the current and any future low-price environment. A railway to existing infrastructure at Milne Inlet was determined to be the safest and most cost-effective means to achieve that goal¹⁴.

¹³ Transcript, Vol. 1, 77

¹⁴ Mary River Project Economics Explained. NIRB Registry No. 332873

26. To date, the project has not been financially sustainable regardless of ore price. For mining projects to be sustainable, they must minimize the cost of producing each tonne of ore. Increasing the number of trucks in order to increase production and lower the Project's cost per tonne was neither economically feasible, nor is it environmentally responsible. Increased hauling on the Tote Road would accelerate the wear-and-tear on the road alongside increased costs for new haul trucks and more maintenance. Baffinland's detailed analysis found that any financial gains from increased production would not cover the added costs associated with increased hauling¹⁴. With Phase 2, the railway will reduce our transportation costs substantially, and the higher volumes will reduce our fixed cost per tonne, a benefit known as economics of scale. The long-term sustainability of the project will secure and enhance the existing benefits to Inuit through training and employment, business opportunities, general economic growth, and financial revenues.
27. The Mary River Project and Phase 2 can also help address the urgent need that Nunavut has identified for more employment opportunities for Nunavut's current and growing population. During the public hearing, Government of Nunavut stated:

The challenge Nunavut faces is pretty stark when it comes to the economy. We have the highest rates of unemployment. We have some of the highest rates of food insecurity, meaning people don't have in many cases enough to eat, and we also have a challenge that's facing us over the next - over the coming two decades, and that's something that the Government of Nunavut is very concerned about.

In addition to the people who are currently unemployed and who are currently unable to provide the necessities of life for their family, we're facing 10,000 young people across Nunavut becoming adults. That's a very high number, and in the five affected communities for the Baffinland project, there will be ... 1,800 young people becoming adults over the next 10 years.

In our minds, we are hopeful and we've remained hopeful that we could find a way for this project to proceed with everybody finding agreement and finding - yeah, finding a way to proceed together. The opportunities that this project represents are - are huge when it comes to employment. They're - in many ways, there's not much that can replace in terms of employment the opportunities that are presented recognizing at the same time that those who have expressed concerns about the project and who are opposed to the project understand this and have weighed that in their own minds, for sure. So I guess the short answer is, yes, we are hopeful, as the Government of Nunavut, that we can find major opportunities because as we looked at the different sectors, mining represents one of the largest opportunities for employment within Nunavut.¹⁵

¹⁵ See Transcript, Vol. 15, 2914-2915

28. The Government of Nunavut went on to confirm that it has not identified any viable alternative opportunities for the level of employment Mary River provides and can provide, in the event Phase 2 does not proceed:

if this project is approved and proceeds, then those of us in this room and those of us around the table have a lot of work to do to sit down and figure out how to milk as many jobs and opportunities out of this project as possible.

If it doesn't proceed, then we have a real hard question about if not this, then what? What are the other opportunities that will replace this for the 1,800 new entrants? Never mind the people who are currently there. You know, we're doing a lot of hard work on fisheries. We're doing a lot of hard work around traditional economy, and we want to see the ability for people to make living -- a living being hunters, being seamstresses. But when you look at the totality of those jobs, it doesn't really come close to the opportunity that's presented here. So either way, we have a very big decision. We recognize the NIRB has an extremely hard decision in front of them, and then we have collectively in this room a lot of work to do to figure out what's the plan for these 1,800 people. Thank you.¹⁶

29. The Government of Nunavut went on:

The short answer - like, we've looked really hard, and we're really trying our best to collaborate with organizations like QIA on - on other sectors. We've done a lot of work on fisheries, and we're hopeful that we can make some really strong improvements on - on quota and allocation for - for this region when it comes to the fisheries. But even considering the -the process that exists within the Department of Fisheries and Oceans and others, in a best-case scenario, we're talking for the North Baffin potentially dozens of jobs, which is good. These are good - these are good jobs, and we're hopeful that we can work on - you know, we heard in Pond Inlet the desire for community country food markets and the ability to sell country food. This would be extremely good and extremely important. We hope we can all come together and do that, but, again, that's a relatively small number of full-time jobs that would be created from that. We know -- and I'm kind of looking at NTI when I say this. We know we have a lot of work to do to increase Inuit employment within the Government of Nunavut, and even if we were to achieve the agreed upon targeted levels of Inuit employment within the five affected communities, we're -- we're still talking perhaps 100 or 200 jobs where Inuit would take over from non-Inuit. So, I think it's clear to us that the thousand or so jobs that - that will be created from this not only will be really important upon themselves, but the spin-offs that could achieve for the other communities, it's - there are very few things that could replicate that, and we're open to ideas. But - but looking at what we have in front of us, it's - it's a very difficult situation.¹⁷

¹⁶ See Transcript, Vol. 15, 2917-2018

¹⁷ See Transcript, Vol. 15, 2920-2917-2018

30. The Government of Nunavut also commented on the positive impacts of employment at Mary River and in the mining industry generally that they have observed to date:

Yes, and I think we found in other regions as you see the increase in Inuit employment within the mines, you also see associated employment in home communities.

There's more disposable income. And the primary economic response, I think, we're seeing is - is in many cases those people who are working at the mines actually spend - have the money and ability to hunt more, and it increases the amount of country food available in - in communities for - either for sale or for covering for the families' needs. So as we're looking at - at what the impacts of this project could be, it's not only the jobs that are at - at site, but, in theory, there's a larger market for sewn products, for arts, for - for crafts, and it - that increase of pool of income in the community allows for more communities-based economic development, meaning the idea of a country food market becomes more viable, or, you know, people hiring others to do what would otherwise be considered traditional activities. So all that to say - I mean, we - we have a lot of work to do amongst all of us to maximize that. Like, that's - that's not necessarily a predetermined thing that it's going to happen. It would involve a lot of work on the part of the Government of Nunavut and others, like I said before, to make sure that every opportunity is - is pulled out of this project. It's not an automatic yes for the project means this is all going to happen. We all have a lot of work to do, and we - we look forward to that work.

You know, in the alternative, we all - all of us around this table and all of us in this room have a lot of planning to do if this project doesn't proceed because we still have this group of people who will be hitting the workforce.

And if I could just add a little piece. Like, I know there's some - this has been framed in some way about choosing jobs over the environment, and I just really want to say that, you know, the direction we've been given within the GN from our cabinet is these jobs accomplish something. You know, we have people who need food for their families, people who aren't able to clothe their children. You know, we - we've seen people from - Hollywood stars providing parkas for our kids and stuff. These are jobs to provide the basics of life, and I just hope it can be framed in that way. We're not talking about greed, or we're not talking about jewellery, gold jewellery, or something. It's really about trying to find a way to improve the quality of life.¹⁸

31. The need for jobs in the community was confirmed by the Hamlet of Pond Inlet:

There have been as many as 75 people from Pond Inlet working at one time at the Mary River site. If an economic base is to be established that will ensure future training and employment opportunities, improved quality of life for all families, retention of the young people as residents of our community, and the economic growth from the spin off effects of newfound wealth, this

mine must stay open. Pond Inlet will not be able to replace the lost jobs to the residents of Pond Inlet, nor will it replace the economic benefits should this mine close. There are no other prospective employers on the horizon that could fill the void that would be created. Approval of Phase 2 and the ongoing successful operation of the Mary River project ensures positive generational impacts to the Hamlet, some of which we have already realized since the early days of operations.¹⁹

32. This was echoed by the Hamlet of Sanirajak:

There has been as many as 80 people from Sanirajak working at the Baffinland Iron Ore Mines' Mary River mine. This makes Baffinland Iron Ore Mines continued operations critical for the livelihood of a large portion of Sanirajak's population. For a relatively small community like Sanirajak, were the loss of those jobs to occur, it would have a devastating impact on the community. Should Baffinland's Phase 2 proposal not be approved and the mine closes, there are no potential employers that would be able to replace the jobs for these Sanirajak residents.²⁰

33. Inuit employed at the Project also provided their perspective on the need for the Project to support employment in the region and shared their own personal experiences with the Board:

"There's only a few jobs opening, opening jobs here and a lot of people are always looking for jobs but it'd be harder for sure for searching for a job. Jobs barely open, but when they do a lot of people try and get that job."²¹

"If Phase 2 didn't happen, many of us would be unemployed at some point. And the impacts to all of us losing employment would cause some hardship at some point financially. Unless, you know, because the limited market up here in Nunavut, job market prohibits, you know, or limits our ability to work with the limited amount of jobs. Well, that would be a lot like, you know, a lot of the settlements. There's only so much employment, right? There's only limited amounts of job spaces available for, for their skill sets, right? There's not that many. They don't need that many vehicle operators or building maintainers. They're all filled basically... Well, prior to joining Baffinland I had been unemployed for three years. And I was very grateful that I was given the opportunity to join and learn much more different broad trades."²²

"I was jumping jobs and it was really difficult, money-wise, and I couldn't even get a house to rent or anything with the amount of money I was making. But now with Baffinland my money more than doubled. So I got much better after that."²³

¹⁹ Final Written Statement, Hamlet of Pond Inlet, January 10, 2022, NIRB Registry No. 337607

²⁰ Final Written Statement, Hamlet of Sanirajak, January 10, 2022, NIRB Registry No. 337621

²¹ Verna Palluq (Clyde River) Our Inuit Voices Matter, Transcript

²² Carson Soucie (Iqaluit) Our Inuit Voices Matter, Transcript

²³ Christopher Hayward (Cape Dorset) Our Inuit Voices Matter, Transcript

*"I support Baffinland Phase 2 railway project because it helps me with my family and the bills that we have to pay, the food, and the groceries are getting expensive."*²⁴

*"And I support the Phase 2, Baffinland Phase 2 railway project because Baffinland enables me to make a career, make a good job, have a good living, and provide for my family."*²⁵

*"I support Phase 2, because there's not much jobs available in my hometown here in Clyde River. And more Inuit would have a chance to work at Baffinland, if the Phase 2 is approved."*²⁶

*"I have four grandkids and five kids, and I support Phase 2. I want it. I want more jobs to come, thank you."*²⁷

*"I support the Phase 2 Baffinland iron mine, Phase 2 project. I support it. I hope it goes through. So that I can support my family the way I should and that's it."*²⁸

*"I support Phase 2 because I have kids to take care of and a business to take care of. Thank you."*²⁹

*"I support Phase 2 because it helps me support my family. And I don't know, it's having me a job at Baffinland, I like it. And I got to support my family. I got like seven kids and it's helping me a lot financially."*³⁰

*"Employment is not always easy to come by as most jobs that are available are ones that are at minimum wage and doesn't make living any easier as everything is becoming more expensive, including gas, food, clothes, hunting equipment, sewing materials etc. Working at Baffinland brings stability in finances in my home, so that I don't need to worry about my family being hungry or not having clothes to wear. I now have the ability to teach my kids hunting by getting them their own equipment and so on."*³¹

2.4 Project Description and Overview

34. Since it first began consideration of the Project in 2014 and throughout the NIRB process, Baffinland has updated and clarified the scope of the Phase 2 Project Proposal as a result of detailed technical and economic feasibility studies, as well as in response to feedback from Inuit participants and other participants in the reconsideration process.

²⁴ Darlene Croxen (Arctic Bay) Our Inuit Voices Matter, Transcript

²⁵ Lionel Aqatsiak (Igloodlik) Our Inuit Voices Matter, Transcript

²⁶ Peter Aipellee (Clyde River) Our Inuit Voices Matter, Transcript

²⁷ Josah Atagootak (Pond Inlet) Our Inuit Voices Matter, Transcript

²⁸ Norman Simonie (Pond Inlet) Our Inuit Voices Matter, Transcript

²⁹ William Koonoo (Pond Inlet) Our Inuit Voices Matter, Transcript

³⁰ Robert Aglak (Pond Inlet) Our Inuit Voices Matter, Transcript

³¹ Devin Aviugana (Iqaluit) Support Letter

35. For clarity, the Phase 2 Project Proposal that has been presented to the Board and the Minister for approval includes the following activities and works:
- Increased iron ore production to 12.0 million tonnes per annum (**mtpa**) (with operational flexibility to 14.4 mtpa to be shipped through the existing Early Revenue Phase shipping route - the Northern Transportation Corridor. This would be in addition to the 18 mtpa (21.6 mtpa with operational flexibility) permitted through the Southern Transportation Route, via the port at Steensby as part of the approved Mary River Project.³²
 - Increased iron ore production produced via Phase 2 will be shipped using no more than 168 ore carriers along the Northern Transportation Corridor in a season. The same range of vessel types and sizes will continue to be used along, with the limited addition of capesize ore carriers if/when available. Ore carriers will not transit through Navy Board Inlet.
 - Construction and operation of a ~110 km railway within the Northern Transportation Corridor between the Mine Site and Milne Port, generally following the existing Tote Road route with a short deviation at the km 67 hill (also known as “Route 3”). Once the railway is in place, the Tote Road would remain operational, but its use would be limited to moving personnel, freight, fuel, water and equipment. No ore haulage will continue by road once the North Railway is fully commissioned.³³ With ore haul truck traffic eliminated on the Tote Road, hunters and land users will have improved access to the road under a program to be developed between land users and Baffinland.
 - Expansion and improvement of the Milne Port facilities: a second ore dock and ship loader would be added and able to accommodate capesize vessels; railway unloading and maintenance facilities, and additional support infrastructure would be developed, in addition to an enclosed crushing facility.³⁴
 - Minor modification of the shipping season to allow for contingency shipping up to November 15th, if ice conditions allow for it. Otherwise, Baffinland will continue to plan its shipping season to occur no earlier than July 15th and no later than October 31st in any given year. Vessels will continue to avoid shipping through landfast ice, and will rely on Pond Inlet to confirm the floe edge hunting season has closed before operations commence. Shipping through ice early and late in the shipping season will be subject to transit restrictions over 24-hour periods based on ice concentrations (Spring) and ice conditions (Fall).
 - Modification to Mine Site infrastructure, including the addition of ore loading infrastructure for the North Railway, added fuel storage capacity, and a reduction in overall ore crushing via the relocation of secondary crushing to an indoor facility at Milne Port.³⁵

³² Updated project scope with clarification on operational flexibility (Attachment 1) NIRB Registry No. 327956-327957

³³ Updated project scope with clarification on operational flexibility (Attachment 1) NIRB Registry No. 327956-327957

³⁴ Updated project scope with clarification on operational flexibility (Attachment 1) NIRB Registry No. 327956-327957

³⁵ Updated project scope with clarification on operational flexibility (Attachment 1) NIRB Registry No. 327956-327957

36. The proposed Phase 2 Project components are reviewed in detail in Baffinland’s Phase 2 Proposal Updated Information Package, filed January 7, 2020³⁶ and (as communicated during the public hearing) some aspects were further refined during consultation and engagement with Impacted Communities since January 7, 2020, as reflected in the BIM Phase 2 Disposition Table (Appendix A) and Commitment List (Appendix B and C).
37. In its Final Written Statement, QIA has misconstrued the scope and scale of the Mary River Project. Phase 2 is by no means a “greenfield” project. In fact, Phase 2 has the unusual advantage of building from an existing project and an existing footprint.
- The Mine Site itself is already constructed, and the existing footprint will see minimal to no changes if Phase 2 proceeds. Phase 2 will continue to mine from the same deposit (Deposit 1) as the Early Revenue Phase and the Production Increase Proposal and Production Increase Proposal Extension.
 - Unlike other NWT and Nunavut production mines, Baffinland has no on-site processing of its product – these produce waste streams such as tailings, which can remain fixtures of the landscape long after operations are completed.
 - The footprint of the Mine Site and transportation infrastructure currently and as modified by Phase 2 is of a similar size or smaller than that of many existing and past Nunavut and other Northern production mines.
 - While it is the only project in Nunavut with a railway, it is not the only project in Nunavut or the North with linear infrastructure (i.e. roads) and Baffinland has incorporated the lessons learned from these mines as well as its own operation of the Tote Road in its assessment and other materials provided to the Board. As an example of this, when Baffinland held its Rail Alignment Crossing Workshop in 2019, it included an Inuk employed at another Nunavut mine to help provide first hand Inuit knowledge, experience and expertise to the workshop participants (who were from the Impacted Communities).³⁷ The proposed infrastructure changes for Phase 2 (primarily, the railway) were developed using the existing corridor as much as possible to reduce the Project’s overall zone of influence, a common land use planning principle.

³⁷ Mary River Phase 2 Proposal Rail Alignment Summary Report, NIRB Registry No. 327139-327149

38. The same Northern Shipping Route for the current operation will continue to be utilized for Phase 2, based on the same rationale applied in the Early Revenue Phase and accepted by the NIRB in its approval of that phase of the Mary River Project. There is an increase in vessel traffic frequency associated with Phase 2 as compared to the Early Revenue Phase, which is necessary to continue to maintain a similar shipping season to today and avoid winter shipping, as it was previously removed based on community preferences. The increase in vessel traffic and frequency has been subject to a rigorous and conservative assessment, with modelling using a larger number of vessels than is planned (176 versus 168) and a disproportionate mix of larger vessels (66% capesize) than is commercially or physically possible.³⁸ The overall increase in ore carrier traffic using the maximum number of vessels over a slightly modified shipping season translated to an average of 3 ore carriers passing by Pond Inlet a day (as compared to the current average of 2).³⁹ To address concerns related to a sudden increase in vessel traffic once Phase 2 becomes operational, Baffinland has highlighted that shipping will increase in increments in concert with robust Baffinland and Inuit led monitoring, and the application of stringent adaptive management thresholds and responses.⁴⁰

³⁸ NIRB Registry No. 327957

³⁹ Transcript Vol. 17, 3301

⁴⁰ Commitment No. 239 - 242 in the Final Table of Post Phase 2 Approval/Regulatory Phase Commitments, Appendix C to this document

39. Baffinland does agree with the comment included in QIA's Final Written Statement that, "the Mary River Project is no ordinary mine", particularly taking into consideration Phase 2.⁴¹ The Inuit-centered mitigations that have been developed through deep consultation with QIA, communities and any Inuit group that was willing to engage with Baffinland are legally binding and enforceable, detailed, specific, and unique to the North Baffin and the explicitly stated needs and preferences of Inuit residents. They reflect a profound commitment to direct Indigenous involvement in operational decision making that, to Baffinland's knowledge, exceeds that of any major industrial project in Canada. This taken together with the mitigations that have been developed based on the best available western science and IQ means Inuit can count on robust protection against significant adverse effects from mining. Royalties to Inuit are expected to be \$2.4 billion, using conservative assumptions. Communities will experience direct investment in needed infrastructure that is normally funded by government, including improvements to roads in Pond Inlet and daycares in all Impacted Communities. Our significant workforce needs means that Baffinland also has the opportunity to employ the largest Inuit workforce in Nunavut. Baffinland is already the largest private sector employer of Inuit in the Qikiqtani Region and the current⁴² 325 Inuit Mary River employees⁴³ will have the opportunity to continue and grow in their careers. Baffinland, Government of Nunavut (GN) and QIA have cooperative and targeted strategies that will help increase the total number of Inuit that are employed at Mary River and in the communities by Baffinland, and Baffinland can help support the well-being of today's Qikiqtani families for generations to come. None of these aspects of the Mary River Project are in any way "ordinary". However, approval of Phase 2 is essential if this outcome is to be realized.

2.4.1 Mitigation by Design

40. Throughout the NIRB process, Baffinland has updated and clarified the scope of the Phase 2 Project in response to written information requests and technical submissions, questions and requests during technical meetings and public hearings, and through our extensive engagement record. What is before the Board is a Project which has taken into account the views expressed to Baffinland to the greatest degree possible. Mitigation by design is the most impactful form of mitigation as adverse effects are reduced or avoided entirely as a result of the design. The result of this "mitigation by design" approach is an updated Project design, taking into account feedback provided by Parties, targeted specifically at reducing potential negative environmental and socio-economic effects while in some cases enhancing positive Project benefits.
41. Examples of such mitigation by design that apply to, or were developed specifically for the Phase 2 Project include:

Marine Based Mitigations by Design:

⁴¹ QIA Final Written Statement, January 10, 2022, NIRB Registry No. 337612

⁴² As at the November 2021 public hearing

⁴³ Note this is current to the November 2021 Public Hearing.

- Reduced the number of ore carriers to be used to no more than 168 ore carriers per year (down from the originally proposed maximum of 176).⁴⁴
- Commitment to gradually increase the number of ore carriers starting the year after approval, if approved, rather than a full transition in a single season.⁴⁵
- Removal of the requirement for winter shipping to avoid time periods of heightened Inuit land use and harvesting activities.⁴⁶
- Avoidance of breaking landfast ice – resulting in a reduction in the shipping season from the original proposed 10 months per year to approximately 4 months.⁴⁷
- Continued implementation of restricted areas where vessels cannot travel along the shipping route (e.g., Koluktoo Bay).⁴⁸
- Commitment to not commence shipping until landfast ice has broken along the entire shipping corridor and the floe edge near Pond Inlet has been closed for hunting due to safety concerns.⁴⁹

Terrestrial Based Mitigation by Design

- Switch from outdoor secondary crushing at the Mine Site to indoor secondary crushing at Milne Port to reduce dust emissions from this key source.⁵⁰
- Switch from ore haulage by truck to rail, significantly reducing wildlife disturbance and dust generation along the Northern Transportation Corridor, as well as greenhouse gas emissions due to fuel efficiencies in transport by rail.
- Movement of proposed rail alignment along the deviation area at the km 67 hill from Route 1 to Route 3 to avoid an identified traditional travel route between Igloolik and Pond Inlet.⁵¹
- Establishment of Special Protection Areas along the railway where additional wildlife crossings (1:3 slope embankments) may be installed; in these areas speeds may also be reduced generally or during certain times of the year, and additional wildlife surveillance monitoring may occur.
- The creation of three new wildlife monitoring stations will enhance surveillance further and will also create 24 new monitoring jobs for Inuit at the Mary River Project.⁵²

⁴⁴ Transcript, Vol. 17, 3166; Commitment 241 Final Table of Post Phase 2 Approval/Regulatory Phase Commitments, Appendix C to this document

⁴⁵ See Commitment 242, BIM Final Table of Post Phase 2 Approval/Regulatory Phase Commitments, Appendix C to this document

⁴⁶ See Nunavut Planning Commission Conformity Determination, May 29, 2018, NIRB Registry No. 318134.

⁴⁷ See WWF-FWS-04, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

⁴⁸ See WWF-FWS-04, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

⁴⁹ See Commitment 89 and 215, Commitment List, Appendix A-C

⁵⁰ See Commitment 231, Commitment List, Appendix A-C

⁵¹ See QIA-6, QIA-20, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

⁵² See Commitment 238, Commitment List, Appendix A-C

- General modifications to railway design to make embankments smoother using smaller fill material (Type 12 to Type 8) and gentler by decreasing the slopes over large areas to what was proposed for the South Railway for caribou crossings only (1:1.5 to 1:2).⁵³

2.4.2 Operational Flexibility

42. As a result of its experience with the Project to date, Baffinland has determined that operational flexibility is needed to create stability and certainty for the Project. Mining operations experience variability due to many factors including ore production, logistics, weather and market demand. Baffinland has also committed to stringent environmental management conditions, including adaptive management thresholds and responses that could impact operations. Operational flexibility is required to allow Baffinland to make up for shortfalls in the amount of ore that may be mined or transported in a single subsequent year. Baffinland would not seek to use the operational flexibility until a shortfall in production or transportation is experienced, and would not increase production or transportation over 12 Mt for more than one year following the shortfall year.
43. Operational flexibility is not new to the Mary River Project, and is included in the current project certificate for activities associated with the Steensby Project, as well as the Early Revenue Phase. Operational flexibility with respect to production is also commonly exercised in mining generally, with other mines having discretion to adjust production levels within the scope of their approved infrastructure and activities and other approvals. Only the Mary River Project Certificate includes dedicated terms and conditions which set limits on production. The original Mary River Project Certificate allowed Baffinland to ship 18 mtpa with 20% operational flexibility providing for annual shipment of up to 21.6 mtpa from Steensby Inlet (operational flexibility is recognized by increasing the total number of vessels allowed per year and during the summer season). The amendments to Project Certificate No. 005 approving the Early Revenue Phase also allowed for operational flexibility allowing Baffinland to ship 3.5 mtpa with 20% operational flexibility up to 4.2 mtpa (without vessel level restrictions).
44. What Baffinland proposes for the Phase 2 Project is the ability to make up a single or consecutive years of ore production and transportation shortfalls in a single, subsequent year, by up to 20% of the total 12 mtpa permitted for transportation by rail and via Milne Port. The make-up activities would be capped to be within the prescribed overall transportation activities limits of:
- a maximum of 168 ship calls per year for the ore carriers; and
 - no more than 10 ore train trips per day (20 transits).

⁵³ See QIA-02 and GN-03, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

45. The exercising of operational flexibility is entirely within the confines of the Phase 2 Proposal's environmental effects modelling associated with rail transits, vessel transits, and air emissions. Similarly, operational flexibility does not present any implications for cumulative effects as it is proposed to occur within the transportation limits and life of mine activities assessed in the Phase 2 FEIS Addendum. This is demonstrated unequivocally in the Operational Flexibility Assessment Memo, submitted to the NIRB on September 30, 2020.⁵⁴
46. Baffinland is recommending transportation limits to the Board for inclusion in the Project Certificate, as intensity of activities is more directly tied to environmental effects than simply referring to ore tonnage (see current Term and Condition 179).
47. Activities related to operational flexibility would be subject to the same stringent regulatory and Inuit agreement requirements as the rest of the Project.

Key Reference Documentation:

- Baffinland's Phase 2 Proposal Updated Information Package, filed January 7, 2020, NIRB Registry No. 327957
- Operational Flexibility Assessment, Phase 2 Proposal, September 30, 2020, NIRB Registry No. 331634
- Technical Supporting Document 2 – Project Description, NIRB Registry No. 320586

⁵⁴ NIRB Registry No. 331634.

2.4.3 Phased Development

48. The Mary River Project is a phased project. Phased development is a key strategy for development in Nunavut, and particularly in areas in which there has been little previous development experience with major projects. There are a number of major development projects that have undergone assessment and approval by the NIRB which are phased projects – Mary River is not unique in that regard.
49. There are several reasons why phased development offers benefits, namely:
- Phased development of the Mary River Project has allowed Baffinland to invest in the project incrementally reflecting the ability to raise capital through fluctuating economies.
 - Phased development also allows Baffinland to take into account lessons learned from operational experience, monitoring program results and feedback from the Impacted Communities as it builds out the Project – it allows for a precautionary approach to development, with each phase building on lessons learned from the previous one. This applies to the operation and environmental monitoring.
 - Phased development provides a valuable line of evidence to be used in each additional impact statement addendum in the form of monitoring results. With an operating project and active monitoring program, previous impact predictions have been tested and confirmed. Subsequent assessments (like the Phase 2 FEIS Addendum) benefit from both an extensive baseline and actual monitoring data, rather than relying only on predictions that are typically all that is available for a new “greenfield” project.
 - Phased development supports the establishment of a local workforce that is better positioned to benefit from employment opportunities when the full Project is built out than if it had all occurred at the same time because it allows for training and capacity building initiatives to take root.
50. While Baffinland’s initial application for the Mary River Project was for an 18 mtpa mining project that envisioned a railway to a port at Steensby, together with year-round shipping, a lower price of iron ore coupled with a less favourable investment climate resulted in the need for Baffinland to change its approach to the Project. Baffinland did so and put forward the application for the Early Revenue Phase (4.2 mtpa with operational flexibility) (approved by the NIRB in 2014).

51. The purpose of the Early Revenue Phase was to confirm the best way in which to operate the mine, test the product in the marketplace, establish a customer base, and generate enough revenue to cover the cost of the interim operation while a more sustainable solution was developed. However, this phase of production is not sustainable the current rate of production does not generate sufficient revenue to allow Baffinland to sustain the mine, at a production rate of 6 mtpa (approved by the NIRB in 2019, and extended in 2020 to the end of 2021), let alone 4.2 mtpa.⁵⁵ The cost of trucking ore is consistently high, while the price of iron ore is highly unstable and has remained below the break-even point for the majority of the operation to date. In 2016, Baffinland had a negative cash flow generation of US\$91 million and therefore required further cash inflows in the form of additional debt as well as additional investment dollars from investors. The reality is that iron prices are going to fluctuate over the next 20 years. Baffinland cannot develop a mine plan that will only generate profits when prices are at historic highs. Inuit and investors alike need some level of confidence that the mine will not only prosper in good times but will remain viable in bad times. The long-term, sustainable solution to this challenge is the proposed Phase 2 North Railway⁵⁵. If the Project does not move to a proven transportation system and a higher production rate, it cannot continue.
52. Throughout the Phase 2 assessment process, Baffinland has been transparent that it would like to seek to expand the mine in the future if it is possible to do so in a way that protects the environment and provides benefits to Inuit and Baffinland's shareholders. Some Parties have indicated a preference to know Baffinland's long-term plans for the Mary River Project in their entirety, that is, Baffinland's plan for the Mary River mine for the next several decades. For the reasons provided, it is not possible to indicate such a long-term plan as it depends on long-term economic, environmental and social conditions.
53. However the following point cannot be emphasized more strongly: no phase of the Project proceeds without further regulatory process, comprehensive engagement with Inuit and regulatory approval. In addition to the regulatory process that would be required to be followed pursuant to the Nunavut Agreement in relation to any expansion, under the Inuit Certainty Agreement, Baffinland has agreed with QIA to additional steps that will ensure early engagement with Inuit in the Impacted Communities and consultation at the Project planning stage well in advance of any regulatory application. This includes a formal requirement to conduct an Alternatives Assessment, a Cumulative Effects Assessment, and a Culture, Resources and Land Use Assessment with the QIA and communities before Baffinland submits any further FEIS Addendum to NIRB.⁵⁶

⁵⁵ Mary River Project Economics Explained, January 29, 2021, NIRB Registry No. 332873; NIRB Project Certificate No. 005 Amendment 3, NIRB Registry No. 331634.

⁵⁶ ICA Schedule A, ID 9B – Project Scope, filed September 28, 2020, NIRB Registry No. 331607

2.4.4 Inuit Qaujimajatuqangit (IQ)

54. Some Intervenors alleged that Baffinland failed to collect and incorporate IQ into Project planning, and suggested that Baffinland conducted an environmental assessment and developed mitigation measures without the benefit of IQ. As the volume of evidence filed by Baffinland shows, this statement is without foundation.⁵⁷
55. Baffinland conducted its environmental assessment of Project effects using all traditional use and IQ information available to it at the time of the assessment. Additional IQ and traditional use information was reviewed as it was received in the context of the NIRB reconsideration. With the application of mitigation measures, Baffinland determined that the significance conclusions for Project-related effects and the Project's contribution to cumulative effects remained unchanged by the results of the supplemental IQ and traditional use information received from oral and written submissions made throughout the review process.
56. Baffinland appreciates the continued work of the QIA to take a leading role in the collection of IQ in the Qikiqtani region. This work contributes to the ongoing development of QIA's permanent IQ archive, which Baffinland has been contributing to since 2006 when IQ studies related to the Mary River Project first began. Baffinland recognizes that one of the many benefits of maintaining a robust and accessible IQ archive is that proponents could have access to an extensive and consistent collection of IQ, which is verified, accepted and shared by the Regional Inuit Association. This system has been applied successfully in other jurisdictions in Nunavut, most notably in the Kitikmeot, where the Kitikmeot Inuit Association administers an IQ database that proponents can access in order to prepare their impact statements. Baffinland is hopeful the Tusaqtavut Studies will contribute to the successful development of a parallel database for the Qikiqtani region.⁵⁸
57. Baffinland has worked with the QIA for over a decade to develop methodological approaches for IQ studies, consistent with the IIBA. This collaborative approach resulted in QIA providing its written support for requisite Nunavut Research Institute Research Licenses for IQ studies and active participation in IQ interviews and workshops. The results of these undertakings have been consistently integrated into Baffinland's environmental impact statements, and made available as part of NIRB review and reconsideration processes. A summary of key documents used specifically in the Phase 2 FEIS are as follows:
- Summary of Community Based Research Undertaken for the Mary River Project, 2006-2010 (FEIS, Volume 2, Appendix 2B) (NIRB Registry # 285329)
 - Mary River Inuit Knowledge Study Map Book (Phase 2 TSD-05) (NIRB Registry # 320559)
 - Phase 2 Community Workshops, 2015-2016 (Phase 2 Addendum, TSD-03) (NIRB Registry # 320557)

⁵⁷ See NIRB Registry Nos. 320559, 323801 (Appendix 13), 322558, 326802

⁵⁸ BIMC Response to QIA, DFO and PC Submissions, August 31, 2021, NIRB Registry No. 336643

- Inuit Qaujimajatuqangit and the Mary River Project (Submitted to NIRB March 2019) (NIRB Registry #323799-323805)
 - Community Risk Assessment Workshops (Submitted to NIRB October 2019) (NIRB Registry # 327146-327147)
58. QIA participated in other notable targeted community engagement initiatives on Phase 2 components that provided a better understanding of Inuit perspectives, including the Rail Alignment Crossing Workshop (August 2019) and an EA Workshop (January 2020). These workshops were summarized and submitted to the NIRB as the following documents:
- Rail Alignment Summary Report, (Submitted to NIRB October 2019) (NIRB Registry # 327148- 327149)
 - Community Engagement on the FEIS Addendum (Phase 2), Draft Workshop Report (Submitted to NIRB October 2020) (NIRB Registry #331791)
59. Baffinland disagrees with QIA's assertion made in their covering letter to the Clyde River/Arctic Bay Tusaqtavut submission that previous IQ work conducted by Baffinland is "out of date". Inuit participants have shared with Baffinland that the very essence of IQ is that it is knowledge that is passed down from generation to generation, and that there is no expiry or timeframe. While Baffinland agrees that our commitment to continue enhancing and formalizing the incorporation of IQ into Project decision making is an important component of Phase 2, we do not agree that IQ shared in the past is no longer valid or meaningful as a result of the time that has passed since knowledge holders first shared this information with us. We also do not agree with the suggestion that previous IQ work was controlled by Baffinland or self-directed. IQ shared with Baffinland has been incorporated in Project design and mitigations and will continue to be incorporated into the future. During the public hearing, Baffinland responded to the criticisms regarding reliance on IQ shared with Baffinland in the earlier project planning stages:⁵⁹

I'd like to ... first comment by saying that we have great respect for the individuals who participated in those workshops and who shared information for us, and to suggest that ... that knowledge is now dated, I do not believe shows that respect for those individuals. Knowledge that was shared previously remains relevant, and we continue to ask for historical and current experiences when we meet with individuals. ...

As with many parts of our assessment, you cannot look at a single technical supporting document in isolation. So the information included in Technical Supporting Document, the study map book, that was available to our experts to consider as part of their assessments mostly worked into baseline information. But it was also important in forming the original guidelines that dictated the format of our assessment, and the Phase 2 environmental impact statement followed those guidelines.

⁵⁹ Transcript. Vol. 2, 280-282

So to say those studies are important is an understatement. That being said, we understand we were putting forward an addendum and that there was a need to look at more contemporary land use. So that was the rationale behind moving forward with the 2015 and 2016 workshops. Those were included as Technical Supporting Document Number 3. Those two were available to our consultants in their assessments, and the information was used as it was applicable.

We understand that Inuit Qaujimajatuqangit is not static. It will always evolve, and that is why in 2019 we continued collecting information to support the proposed management mechanisms for the project. That was the intent behind the risk workshops, and that was supplemented by the Tusaqtavut studies which, again, are forming the basis for how the project will be monitored going forward.

So just to be clear, the information in the map books is not the only component of IQ used to form the Phase 2 environmental impact statement. We updated where we thought it was necessary. We did those studies in a manner that was accepted both by the Qikiqtani Inuit Association and the participants. Throughout the review process, we have continued to collect Inuit Qaujimajatuqangit. Should the project be approved, it'll be hard-coded into any approval associated with the project and further supported by amendments to the Inuit Impact Benefit Agreement.

60. During the public hearing, in answer to questions from the MHTO, Baffinland provided examples of its incorporation of IQ and described its current processes for incorporating IQ in the project operations as well as the enhancement structures that have been agreed under the Commitment List and are under active development by the QIA in consultation with Inuit:⁶⁰

We do have these processes in place, and we have a number of examples where Inuit Qaujimajatuqangit has led us to make project changes that is different and distinct from what our monitoring programs are telling us. So we've reconciled these differences by making project changes, evaluating concerns brought forward by community members in different formats, and then trying to address those concerns. Examples include starting transit restrictions in the early shipping season, additional dust suppression along the roadway, and now more recently at our stockpile at Milne Port, we've extended our monitoring programs including adding new locations for aquatic invasive species monitoring, which, according to our science, is not necessary.

What we are committing to under Phase 2 is formalizing these processes. What we've committed to under the Inuit Certainty Agreement strengthens these processes and provides very clear guidelines on accountability and the decisions that the company will make if Inuit-based thresholds are surpassed.

⁶⁰ Transcript, Vol. 2, 326-327

61. Phil Rouget, Golder Associates expert on marine mammals, gave an example during the public hearings as to how IQ was incorporated in his assessment:⁶¹

I'll start off by responding to the first question, that being provide an example in the way IQ was incorporated into the effects assessment for the marine environment.

IQ was integrated in the effects assessment from the very early stages of the project prior to the initial development of the final environmental impact statement. This was done through information shared through interviews with community members, including Elders, dating back to 2006. It was used to characterize baseline conditions in the study area, including detailed information on animal distribution in the regional study area, timing of animal movements throughout this area, migratory patterns, sensitive and important life cycle stages for different species, and sensitive areas throughout the region.

That information helped us as EA practitioners understand where to focus our efforts in our marine baseline data collection and also helped us understand what valued ecosystem component should play the focus for the effects assessment. We also learned at that point from Inuit what key issues were for both marine mammals and marine environment as a ... result of the project.

Following that process, there was a number of focused invite workshops that were held with communities with Pond Inlet and Arctic Bay. I think that was in 2015 and '16. Those were focus group workshops related specifically to the Phase 2 proposal. They were there to discuss the key issues and specifically mitigation measures to minimize or avoid any of the adverse impacts on both marine mammals and the marine environment.

They had key themes. The ... workshops related to marine were open-water shipping, shipping through ice, contemporary Inuit land use and sea use, and the Phase 2 proposal specifically around marine effects.

More recently through 2019, there was several community risk assessment workshops in the various North Baffin communities which, again, focused on identifying project effects and protection measures as well as monitoring for aspects of the Phase 2 proposal.

And through these workshops, community perspectives were documented on risk assessment and management issues related to the marine environment. This included specific impacts related to shipping on narwhal, aquatic invasive species introduction through ballast water discharge, construction of the new ore dock, oil spills in the marine environment, and general vessel management practices.

In many of these cases, IQ is aligned closely with other lines of evidence used in the assessment such as our understanding that narwhal are sensitive to underwater noise and that project

⁶¹ Transcript, Vol. 13, 2411-2415

shipping and icebreaking have the potential to result in behavioural changes in narwhal while they're on their summer calving grounds.

Since the start of the project, Baffinland's mitigation and management measures have all been very much shaped through dialogue with Inuit. For example, we have identified sensitive areas in Milne Inlet for which harvesting occurs along the western shoreline and where calving occurs primarily. Those areas have been identified as avoidance zones for the ship.

Similarly, we received feedback in 2018, a year when we had no aerial surveys being conducted. And the limited Bruce Head project, we heard from the communities that numbers of narwhal were lower, and lower levels of harvesting were reported.

Based on that input alone, a large number of additional precautionary mitigation measures were developed and implemented for the subsequent season, including restricted icebreaker transits during the shoulder season and an established buffer zone or setback area 40 kilometres outside the entry to the regional study area such to avoid any conflicts between ships coming in and staging in that area at the start of the season and animals that would potentially be holding at the edge of the floe edge waiting for entry into the regional study area.

Baffinland's marine based monitoring programs involve Inuit in all aspects of the monitoring, including study design and field implementation, data collection, data processing and analysis, and reporting of the data. We look at the scientific results in close association with what we know from Inuit perspective and IQ.

62. Melanie Austin, Jasco expert on underwater sound also spoke to integration of IQ and scientific knowledge in her assessment during the November 2021 public hearing, after an Elder generously shared his IQ with NIRB and hearing participants:⁶²

And thank you for the question and for sharing your knowledge and for explaining to us the ways that narwhal hear noise and the way that they use sound and how important sound is to narwhal.

I appreciate hearing your perspective on this, and I agree with you that ... sound is important and that noise from ships has the potential to be disturbing at close ranges, and this is why Baffinland has mitigations in place to reduce the amount of noise that's generated and to limit the amount of time that narwhal are exposed to noise from shipping.

As some examples, the speed restriction of 9 knots and particularly things like the setback at the floe edge which was implemented in response to knowledge that was shared, that that is a sensitive area and a sensitive time, so the vessels limit the amount of time that they are close to the floe edge and when narwhal may be there.

⁶² Transcript. Vol. 17, 3206-3207

Because noise issues with narwhal is so important, that is also why we do significant monitoring of the sound levels in the water and of the ways that narwhal are responding to the noise and the presence of the vessels.

To clarify perhaps a misunderstanding about the response I gave yesterday: Yesterday I was talking about distances from vessels where narwhal show responses to vessels and where they show a reaction, which the data that we've collected indicate the distances are at close range, normally 1 to 2 kilometres, sometimes as far as 5 kilometres.

But as you have shared with us, narwhal can hear this sound much further than those distances. Our studies indicate that at those longer ranges, we don't expect there to be a stressful response to the noise at long range. You told us about the sounds from snow machines, and as the narwhal get closer to that sound, they become more responsive. That was my understanding of what you shared with us, and that is what we see as well. When they are close to vessels, they're more likely to respond, but at longer ranges, we don't see those same responses even though they can hear the noise.

63. Michael Settingington, EDI Dynamics expert on caribou, gave detailed and repeated examples during the public hearing of his respect for the IQ shared with him and how this information was incorporated throughout his assessment of terrestrial wildlife, including caribou, and the development of culturally sensitive mitigations.⁶³ As one example:

We've been asked the question for examples of where Inuit Qaujimajatuqangit was used in our assessment on caribou. And, Madam Chair, ... I've always made the statement that this is an Inuit Qaujimajatuqangit-led assessment specifically around how we characterize baseline conditions, how we understand caribou, how they can respond to disturbance. We ask questions about who caribou would respond to a railway. Our participants had no knowledge of how a caribou would respond to a railway. There was no firsthand information.

I also ask questions about significance of effects. We move that into risk assessment workshops as well. We incorporated Inuit Qaujimajatuqangit and knowledge from people in mitigation. Again, things like let the leaders pass. We've had long discussions about how important to it is to let those leading caribou get across things and move through things so the others will follow.

I had questions again when we were talking about the railway embankment for the southern rail. How can caribou get up and over an embankment like this. And then the traditional knowledge came back and firsthand observations from people commenting on how they've seen caribou go straight up hillsides, steep hillsides. That information is built into the environment assessment and confidence and predictions.

⁶³ See Hearing Transcript, Vol. 3, 508-509; Vol. 6, 644-645, 647-648, 692-693, 711-712, 718-720, 729-732; Vol. 5, 837-838; Vol. 13, 2527-2528; Vol. 19, 3580-3581, 3603-3604, 3615.

Madam Chair, those are – those are some of the examples, again, after being involved with Inuit knowledge holders on this project since 2008 to the present for over 11 years of working and trying to incorporate as much as I can understand about Inuit Qaujimajatuqangit.⁶⁴

64. Baffinland's approach to, and demonstration of, its integration of IQ and other forms of community input into the design, assessment and review of the Phase 2 Proposal is a central theme in this Final Written Statement. The sections that follow aim to highlight ways in which Baffinland has taken into account and respected the information that has been shared with it from Inuit through various forms of engagement, not just those that are seen as formal mechanisms of IQ collection. There have been many forms of engagement including Community Roundtables and public meetings. Inuit have shared their knowledge and lived experiences so graciously and freely with us. One concern is that to try to categorize or formalize each share as IQ in order to be able to list its collection could take away from the relational aspects of sharing. Put another way, it would detract from the ultimate goal of including as much IQ as Inuit wish to share in the Project if Baffinland were required to demonstrate formal social science methodology in every instance of IQ collection in the manner that some participants to this process have suggested.
65. Baffinland has committed to the creation of advisory positions in each Impacted Community. These 'IQ Advisors' as well as an Elders room to be included in new office spaces in each community will further strengthen the ability to communicate, share and consider Inuit knowledge in relation to the Project. Baffinland has also worked to develop a formalized system which will ensure the efforts made to date continue through the operation of Phase 2, in recognition that IQ is always growing and changing. These commitments are all reflected in the Commitment List.
66. Baffinland values all of the methods in which Inuit from the Impacted Communities share their views and perspectives on the Project. Together, these sections will amply support the conclusion that Baffinland was able to leverage an extensive record of existing Inuit knowledge related to the Project, add to that record to account for modifications to the Project introduced by the Phase 2 Proposal and meaningfully integrate the sum of shared knowledge into the FEIS Addendum, the ICA and all associated mitigation strategies and monitoring programs presented to the NIRB for approval.

⁶⁴ Vol 3. November 4 2019, 624-625

2.4.5 Summary of Key Phase 2 Agreements with the Designated Inuit Organization

67. After extensive consultation and negotiations, the Inuit Certainty Agreement was completed on June 16th, 2020. As acknowledged in the Inuit Certainty Agreement, the agreement is itself an addendum to the IIBA pursuant to Article 26 of the Nunavut Agreement.⁶⁵ The schedules to the Inuit Certainty Agreement provide information regarding mitigation, adaptive management, monitoring, local firm, employment and training opportunities and consideration for future development.⁶⁶ In addition to a general summary, the QIA prepared and filed with NIRB separate summaries for the agreement for hamlets, for community members, for hunters and trappers organizations, and for Inuit firms to aid in their understanding of the agreement.⁶⁷
68. It should be made clear that these systems are over and above the current processes and programs established by the NIRB for the Mary River Project. Baffinland's Environmental Management System (EMS) and detailed and comprehensive monitoring programs that are required under its key regulatory approvals (including the Project Certificate) are specifically designed to effectively monitor and respond to changes in the biophysical and socio-economic environments, including effects to culture, resources and land use, as Phase 2 infrastructure and activities are developed and implemented. Our commitments provide for ongoing collaboration between Baffinland and Inuit for the protection of the environment, the well-being of communities, and the provision of benefits. Baffinland's existing EMS has a strong history of integrating Inuit knowledge from local communities into the various monitoring programs. QIA Environmental Monitors have also been present at the Project since operations began. Baffinland also heard evidence during these proceedings on the growing number of Inuit members of Baffinland's monitoring teams.
69. Baffinland has made detailed commitments to adaptive management and we will identify and establish thresholds for each of the management plans in Baffinland's EMS that identify specific actions based on input from Inuit as well as technical experts. We have committed to plans and programs for socio-economic monitoring and engagement including the Inuit Social Oversight Committee, and we have committed to increased benefits for Inuit through increased royalty payments and direct community benefits.

⁶⁵ See Inuit Certainty Agreement, Section 8.2

⁶⁶ Inuit Certainty Agreement Schedules "A" to "9B", filed September 28, 2020, NIRB Registry ID No. 331607. Note that the full ICA was filed by the QIA on February 5, 2021, NIRB Registry No. 333015.

⁶⁷ NIRB Registry No. 332611.

70. The additional Inuit governance structures established under the Commitment List (and the Inuit Certainty Agreement) will supplement existing structures. Baffinland will continue our annual reporting as well as the annual project review forum with the Qikiqtani Inuit Association to hear from Inuit directly. We will continue to host meetings at the Mine Site to ensure that Inuit have a first-hand look at the operations and to identify potential issues on the ground at project sites. Inuit will continue to be directly engaged through monitoring carried out by Baffinland in addition to independent Inuit-led monitoring that will be carried out under conditions in the existing IIBA, including the Inuit Certainty Agreement.
71. The Inuit led programs and systems introduced by the ICA and the NIRB Commitment List are designed to enhance Baffinland's current systems and the new mitigations that have been developed directly with the Impacted Communities for Phase 2, in order to give Inuit even more certainty that IQ and Inuit perspectives are formally integrated into the Project operations, and that Baffinland will respond in a timely way should key indicators developed in collaboration with Inuit be passed.
72. While by agreement QIA is currently leading development of the Inuit Committees, Inuit Stewardship Plan, and supplemental CRLU Assessment, and Baffinland has every expectation that QIA will ultimately be successful in completing the tasks they have committed to undertake and is well prepared to support QIA in this endeavor, that is not the only path forward to establishment of these new structures and plans. Baffinland appreciates that QIA has a broader administrative and political role in relation to its constituents. Should QIA be unwilling or unable to advance the agreed Inuit Committee, Inuit Stewardship Plan, and CRLU work, Baffinland is committed to directly ensuring these structures will be in place before Phase 2 operations proceed.
73. In this scenario, QIA would continue to have a key advisory role. The new IQ Advisor positions that Baffinland has committed to may be an ideal bridge to support advancing and finalizing these initiatives. This is exactly the intended purpose of those positions: to build Inuit capacity and IQ and information sharing between Baffinland and Inuit in the Impacted Communities. In October 2021, Baffinland also recently added Paul Quassa, former Premier of Nunavut and one of the negotiators of the Nunavut Agreement, to our team as its Senior Advisor to the Chief Executive Officer. Baffinland has ample capacity to carry out this task. There are precedents in Nunavut mining for the creation of Project specific Inuit advisory groups, and thus NIRB is well aware that these structures are practically achievable and functional. Based on its own engagement with the Impacted Communities, Baffinland believes there are many Inuit residents in the Impacted Communities that would be interested in sitting on the committees proposed under the ICA and the Commitment List and working on development and execution of Inuit led monitoring programs. Inuit have told us and told the NIRB repeatedly that they want to have a direct say in the operations at the Mary River Mine.

74. Whether it is QIA or Baffinland that takes the lead role in supporting Inuit in creating the initial structure for the Inuit Committee and related plans and monitoring, the end result will remain the same as exhaustively detailed in the schedules to the Inuit Certainty Agreement and the Commitment List: before Phase 2 operations proceed, Inuit Committees will be established and direct Inuit led monitoring plans will be in place to ensure integration of IQ in the Project and decision making in relation to the Adaptive Management Plan (as jointly agreed between QIA and Baffinland and subject to review and comment by NIRB). The NIRB can proceed with a positive decision on Phase 2 with the confidence that Phase 2 operations will not proceed until the committed tasks are complete.⁶⁸
75. The Inuit Stewardship Plan advances the role Inuit will directly play in project management, with QIA being the author of the Plan with input from the communities. Baffinland's only current roles with respect to the plan is to fund its implementation and respond to its reports or provide information in person or otherwise as and when requested. The plan will ultimately focus on two streams, 1) culture, resources, and land use, and 2) social issues related to community life. These programs will supplement Baffinland's existing EMS, inclusive of Inuit participation.
76. Baffinland is confident that the additional commitments Baffinland has made in the Inuit Certainty Agreement, together with the commitments made through the NIRB process in the Commitment List, have established a significant balance between the benefits of the project and the protection of environmental, socio-economic and Inuit values, and it establishes an ongoing collaborative framework between Inuit and the company.
77. The Inuit Certainty Agreement is an unprecedented agreement in its financial benefits to Inuit throughout the North Baffin region as well as the improved role Inuit will play in project management and oversight. The signing of this agreement represents an important milestone in the development of the Mary River Project. Since signing the agreement, Baffinland has committed to further community benefits that will directly enhance the positive benefits of the Project on the most Impacted Communities.
78. In response to concerns expressed during the NIRB process from Inuit residents of the Impacted Communities, the QIA has committed under the Inuit Certainty Agreement to developing a community benefits governance structure for delivering benefits received by QIA under the IIBA as community direct benefits for Impacted Communities. QIA will work with communities to develop a management structure that delivers direct benefits to Impacted Communities. The fact that this structure has not yet been developed should not be a factor in the NIRB's decision, given that this is a matter between QIA and the Impacted Communities which does not include Baffinland.

⁶⁸ Hearing Transcript, Vol. 16, 3081-3082

79. Over six years, the royalty percentage to QIA will grow to 3 percent of Baffinland's net sales revenue.⁶⁹ In years where the price of iron ore exceeds established benchmarks, provisions for upside sharing will add .75% to QIA's royalty share. This is a significant amount of royalties that is based on the company's sales and not on profit. That means even in a year when Baffinland is not profitable, Inuit will still receive benefits. With conservative assumptions about iron ore prices and assuming Phase 2 is approved, Baffinland expects to pay the QIA approximately \$1 billion in royalties between 2021 and 2038.⁷⁰ This is in addition to the \$1.4 billion expected to be delivered to NTI (based on conservative assumptions) through the grandfathered royalty paid through the Government of Canada.

In addition to royalties, Baffinland will make one-time financial payments to the Qikiqtani Inuit Association in the amount of \$45 million should Phase 2 proceed.

	At 6 mtpa	At 12 mtpa	Improvement
Iron Ore Price (62%, USD/t)	\$150	\$150	N/A
IIBA Royalty (up to 3%)	1.19%	3%	315%
Upside Sharing (.75%)		+ .75%	
Annual Royalty Payment (CAD)	\$12.6 million	\$88.2 million	700%

2.5 Precautionary Principle

80. The Precautionary Principle provides that where there are threats of serious or irreversible damage to the environment, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. However, a lack of scientific certainty should not necessarily preclude potential activity no matter how low the risk of potential harm to the environment. Instead, governments and regulators will be required to balance interests and concerns and weigh while carefully considering the risks of environmental harm, especially in light of proposed follow-up and monitoring activities.
81. The definition of the Precautionary Principle in Canadian jurisprudence is the same as that used by the NIRB in its Amended EIS Guidelines for the Phase 2 Proposal. It is the definition established by the Supreme Court of Canada in *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*⁷¹:

In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent and attack the causes of

⁶⁹ Transcript, Vol. 1 103

⁷⁰ Transcript, Vol. 1, 76

⁷¹ 2001 SCC 40 at para. 31.

environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

82. More recently, the Supreme Court of Canada explained the Precautionary Principle as follows:

As the intervenors Canadian Environmental Law Association and Lake Ontario Waterkeeper pointed out in their joint factum, s. 15(1) is also consistent with the precautionary principle. This emerging international law principle recognizes that since there are inherent limits in being able to determine and predict environmental impacts with scientific certainty, environmental policies must anticipate and prevent environmental degradation (O. McIntyre and T. Mosedale, “The Precautionary Principle as a Norm of Customary International Law” (1997), 9 J. Env’tl. L. 221, at pp. 221-22; 114957 Canada Ltée (Spraytech, Société d’arrosage) v. Hudson (Town), 2001 SCC 40 (CanLII), [2001] 2 S.C.R. 241, at paras. 30-32). Section 15(1) gives effect to the concerns underlying the precautionary principle by ensuring that the Ministry of the Environment is notified and has the ability to respond once there has been a discharge of a contaminant out of the normal course of events, without waiting for proof that the natural environment has, in fact, been impaired.⁷² [Emphasis added]

83. The BC Supreme Court also considered the application of the Precautionary Principle in *Blaney et al v. British Columbia (The Minister of Agriculture Food and Fisheries) et al.*⁷³ In that case, the Homalco First Nation took the position that there should be no amendment to an existing fish farm licence to allow any aquaculture of Atlantic salmon in their traditional territory until the Ministry and Marine Harvest (an aquaculture company) could prove that there was no risk to the wild salmon stock. In essence, the Homalco First Nation argued that the Precautionary Principle means that governments are bound to prevent activities which might cause harm, however low or speculative that risk.

84. The Court disagreed with that interpretation of the Precautionary Principle, and held as follows:

The Homalco take the position that there should be no amendment to allow the aquaculture of Atlantic salmon until the Ministry and Marine Harvest can prove that there is no risk to wild salmon stock. They argue, that the gaps in scientific knowledge and research make it impossible to prove that there is no risk to wild salmon stock. Therefore, they argue that no amendment should be allowed.

The respondents argue that the Homalco have misunderstood the precautionary principle. They argue that the principle really means that lack of scientific knowledge is not a basis for failing to pass regulations or controls to avoid potential serious or irreversible damage to the environment. They argue that it does not mean, nor are governments bound, to prevent all activities which

⁷² *Castonguay Blasting Ltd. v. Ontario (Environment)*, 2013 SCC 52 at para. 20.

⁷³ 2005 BCSC 283 [*Homalco*].

might cause such harm however low the risk might be, or however speculative the risk might be, until it is proven as a certainty that there is no risk.

I agree with the respondents that the precautionary principle does not require governments to halt all activity which may pose some risk to the environment until that can be proven otherwise. The decisions on what activity to allow and how to control it often require a balancing of interests and concerns and a weighing of risks. This is exactly the kind of situation which requires consultation, discussion, exchange of information, and perhaps accommodation.⁷⁴

[Emphasis added].

85. The principle that any potential risk must not necessarily result in a restriction of the proposed activity where full scientific certainty does not exist is discussed further below in the context of environmental assessment as a planning tool. The *Spraytech* and *Castonguay* decisions provide that the Precautionary Principle stands for the proposition that scientific uncertainty is not a reason for postponing measures to prevent environmental degradation. The *Homalco* decision provides some further clarity. Governments are not required to restrict all activity which may potentially cause a risk of harm, no matter the risk. Instead, the Precautionary Principle requires a balancing of interests and concerns and a weighing of risks, suggesting that certain activities, although there is a risk they may potentially cause harm to the environment, may be permitted so long as they are monitored and properly managed. Baffinland's approach to mitigation by design and mitigation measures in operation are consistent with the Precautionary Principle.
86. Baffinland's Phase 2 Proposal adequately and correctly applied the Precautionary Principle as it is generally defined and understood, without question. The Phase 2 Proposal commits to the application of extensive mitigations and monitoring plans across the VECs and VSECs established for the Mary River Project. Through the NIRB process Baffinland has continuously expanded its proposed EMS to address Intervenor and Inuit concerns, and further agreed to fund independent Inuit led monitoring programs and capacity to participate in Project decision making. These commitments have been offered to meet the high degree of certainty that Parties have requested and are a clear demonstration of best practice in the application of the Precautionary Principle.

2.6 Environmental Assessment as a Planning Tool

87. The purpose of environmental assessment, including that conducted by the NIRB, is a planning tool as an integral component of sound-decision making. It was described by the Supreme Court of Canada in *Friends of the Oldman River Society v. (Minister of Transport)*,⁷⁵ as follows:

Environmental impact assessment is, in its simplest form, a planning tool that is now generally regarded as an integral component of sound decision-making. Its fundamental purpose is

⁷⁵ [1992] 1 S.C.R. 3, 1992 CarswellNat 1313.

summarized by R. Cotton and D. P. Emond in “Environmental Impact Assessment”, in J. Swaigen, ed., *Environmental Rights in Canada* (1981), 245, at p. 247:

The basic concepts behind environmental assessment are simply stated: (1) early identification and evaluation of all potential environmental consequences of a proposed undertaking; (2) decision making that both guarantees the adequacy of this process and reconciles, to the greatest extent possible, the proponent’s development desires with environmental protection and preservation.

*As a planning tool it has both an information-gathering and a decision-making component which provide the decision maker with an objective basis for granting or denying approval for a proposed development; see M. I. Jeffrey, *Environmental Approvals in Canada* (1989), at p. 1.2 (SS) 1.4; D. P. Emond, *Environmental Assessment Law in Canada* (1978), at p. 5. In short, environmental impact assessment is simply descriptive of a process of decision making.*

88. The jurisprudence confirms that the determination of significance of effects involves a large degree of opinion and judgment, and that a board or panel’s review of the assessment of significance does not require the elimination of all uncertainty regarding project effects. As stated by the Federal Court of Canada in *Pembina Institute for Appropriate Development v. Canada (Attorney General)*:⁷⁶:

With respect to assessing the significance of environmental effects, the jurisprudence reveals that this assessment is not a wholly objective exercise but rather contains “a large measure of opinion and judgement.” The Federal Court of Appeal has asserted that “[r]easonable people can and do disagree about the adequacy and completeness of evidence which forecasts future results and about the significance of such results [...]” (Alberta Wilderness Assn. v. Express Pipelines Ltd., [1996] F.C.J. No. 1016 (QL), at para. 10).

The adequacy and completeness of the evidence must be evaluated in light of the preliminary nature of a review panel’s assessment. In Express Pipelines, supra, at para. 14, Hugessen J.A. discussed the predictive and preliminary nature of the panel’s role:

The panel’s view that the evidence before it was adequate to allow it to complete that function “as early as is practicable in the planning stages ... and before irrevocable decisions are made” (see section 11(1)) is one with which we will not lightly interfere. By its nature the panel’s exercise is predictive and it is not surprising that the statute specifically envisages the possibility of “follow up” programmes. Indeed, given the nature of the task we suspect that finality and certainty in environmental assessment can never be achieved.

This view was echoed in Inverhuron & District Ratepayers’ Association v. Canada (Minister of the Environment), 2001 FCA 203, [2001] F.C.J. No. 1008 (QL), at para. 55, by Sexton J.A. Therefore, given the predictive function of an environmental assessment and the existence of follow-up

⁷⁶ 2008 FC 302.

mechanisms envisioned by the CEAA, the Panel's assessment of significance does not extend to the elimination of uncertainty surrounding project effects.

[Emphasis added].

89. The predictive nature of environmental assessment expressly contemplates the potential requirement for follow up or monitoring programs.
90. Courts have also confirmed that “perfect certainty” with respect to environmental effects is not required. The Federal Court of Canada considered the standard required by a panel appointed under the *Canadian Environmental Assessment Act* in resolving uncertainty with respect to predicted environmental effects as follows:

In sum, the CEAA represents a sophisticated legislative system for addressing the uncertainty surrounding environmental effects. To this end, it mandates early assessment of adverse environmental consequences as well as mitigation measures, coupled with the flexibility of follow-up processes capable of adapting to new information and changed circumstances. The dynamic and fluid nature of the process means that perfect certainty regarding environmental effects is not required.⁷⁷ [Emphasis added].

91. The principle that perfect certainty is not required with respect to the potential environmental effects applies equally to the NIRB's assessment. This legal principle is a full response to the suggestion by some Intervenor that NIRB should determine that Baffinland's assessment is somehow incomplete because they do not agree with the certainty of its conclusions. It is not a procedural requirement that the assessment conducted by Baffinland be “perfect” in terms of certainty or content (a standard dictated by a particular Intervenor). Baffinland is not required to eliminate every uncertainty in its assessment to the satisfaction of Intervenor. Baffinland conducted a rigorous assessment, and included IQ alongside best available western science to the greatest extent possible based on information provided to it by Inuit through multiple engagements over multiple years, addressing all of the valued ecosystem and valued socio-economic components required by the NIRB in its Amended EIS Guidelines. This was confirmed by the NIRB when it issued its conformity determination in October 2018.
92. Further, courts have confirmed that where uncertainty may still exist with respect to the potential environmental consequences of a project, adaptive management is an appropriate tool to address such uncertainty:

*An approach that has developed in conjunction with the precautionary principle is that of “adaptive management”. In *Canadian Parks and Wilderness Society v. Canada (Minister of Canadian Heritage)*, 2003 FCA 197, [2003] F.C.J. No. 703, at para. 24, Evans J.A. stated that “[t]he concept of “adaptive management” responds to the difficulty, or impossibility, of predicting all the environmental consequences of a project on the basis of existing knowledge”*

⁷⁷ *Pembina Institute for Appropriate Development v. Canada (Attorney General)*, 2008 FC 302 at para. 34.

and indicated that adaptive management counters the potentially paralyzing effects of the precautionary principle. Thus, in my opinion, adaptive management permits projects with uncertain, yet potentially adverse environmental impacts to proceed based on flexible management strategies capable of adjusting to new information regarding adverse environmental impacts where sufficient information regarding those impacts and potential mitigation measures already exists.

Accordingly, the scope of the duties incumbent upon a panel must be viewed through the prism of these guiding tenets: the precautionary principle and adaptive management. As an early planning tool, environmental assessment is tasked with the management of future risk, thus a review panel has a duty to gather the information required to fulfill this charge.

[Emphasis added].

93. The courts have therefore recognized that because environmental assessment does not require “perfect certainty” with respect to environmental effects and that gaps in information or the need to update to changing circumstances may be balanced by employing robust monitoring and adaptive management – adaptive management is a powerful tool recognized by the courts to address any uncertainty in the assessment or change in future circumstances.

94. This concept of balancing uncertainty with the tool of adaptive management was further explained by the Court in *Wet’suwet’en Treaty Office Society v. British Columbia (Environmental Assessment Office)*:⁷⁸

Adaptive management responds to the difficulty or impossibility of predicting all of the consequences of a project. Courts have recognized that some level of uncertainty should not paralyze entire projects: Canadian Parks and Wilderness Society v. Canada (Minister of Canadian Heritage), 2003 FCA 197 [Canadian Parks] at para. 24; and Pembina at paras. 32 and 56. Adaptive management permits projects with uncertain, yet potentially adverse effects to proceed based on flexible management strategies capable of adjusting to new information regarding adverse impacts. [Emphasis added].

95. It is within this context that the NIRB must consider the assessment undertaken by Baffinland. A lack of perfect certainty with respect to certain aspects of the assessment should not serve to “paralyze” the advancement of the Phase 2 Proposal when Baffinland has demonstrated use of the adaptive management tool on multiple occasions in its operations to date (which shows its commitment to adaptive management is by no means new to Phase 2), and has significantly expanded its obligations towards it moving forward.

⁷⁸ 2021 BCSC 717 at para. 122.

96. Consistent with the Board's direction, Baffinland has found it necessary to implement adaptive management from time to time through the ERP and Production Increase Proposal and Production Increase Proposal Extension phases. For example, adaptive management responses have shaped our shipping activities through Eclipse Sound and Milne Inlet, working directly with the community of Pond Inlet to establish practices like 'no-go' zones, drifting limits and limiting the number of vessels to be anchored in the vicinity of Ragged Island, all for the purpose of reducing or removing negative interactions with harvesters as they have been identified. Another practical and non-novel exercise of adaptive management to the existing project includes the unexpected identification of acid rock drainage at the Waste Rock Facility (**WRF**) and subsequent resolution through the establishment of a new treatment system and modifications to the WRF design, showing a complete cycle of an effective adaptive management system.
97. Adaptive management actions include small to moderate adjustments as described above, but also include major and costly measures where necessary despite significant negative impacts to the operations. More recently, fluctuations in narwhal abundance observed by Pond Inlet community members as well as Baffinland's monitoring programs have been raised through the Phase 2 review process, and confirm Baffinland's commitment to respond to environmental effects even before they are confirmed to be project related, a central tenant of the newly proposed Adaptive Management Plan. Baffinland decided not to ship through ice during the Spring 2021 shipping season even in the absence of clear evidence that shipping was a primary contributing factor to shifting narwhal abundance among other factors including the construction of a small craft harbor in Pond Inlet that involved blasting and pile driving during sensitive narwhal migration periods, killer whale predation, climate change, and harvesting.⁷⁹

⁷⁹ BIM Tech Memo Re Preliminary Summary of 2020 Narwhal Monitoring Programs, April 8, 2021, NIRB Registry No. 3334437, 334440; Baffinland Response to Comments Re Preliminary Narwhal Monitoring, June 17, 2021, NIRB Registry No. 335788; BIMC Response to QIA, DFO and PC Submissions, August 31, 2021; BIM Preliminary 2020 Narwhal Monitoring Update, September 13, 2021, NIRB Registry No. 336783; Update to the Preliminary Summary of the 2020 Marine Mammal Monitoring and 2021 Adaptive Management (Update 2), October 27, 2021, NIRB Registry No. 337190

98. The new structures and systems established for Phase 2 demonstrate Baffinland's commitment to continual improvement and will ensure an ongoing, pro-active and robust approach to monitoring and adaptive management that will protect the environment and Inuit cultural activities. The transition between Baffinland's existing Adaptive Management Framework to a comprehensive Adaptive Management Plan captures much of the informal processes Baffinland has developed with the communities and regulators to date. It also provides an opportunity to integrate a more systematic and collaborative that addresses any uncertainty the NIRB agrees remains with respect to the assessment. The NIRB and Inuit of the North Baffin can also find additional certainty in the powers negotiated by the QIA through the ICA to require agreement between Baffinland and QIA on the Final Adaptive Management Plan. In this process it is intended that Inuit from the Impacted Communities via the Inuit Committees that will be established for the Project will be directly involved in this work.
99. Adaptive management is particularly valuable to the Phase 2 Proposal and the activities of greatest concern— the increase in shipping and change from road transportation to railway transportation of ore from the mine to Milne Port – are scalable, meaning project component activities can be adjusted in response to Inuit and Baffinland monitoring results through the application of adaptive management.
100. For example, should Baffinland be permitted under the Project Certificate to use 168 ore carriers, that does not mean that volume of shipping would necessarily happen. Baffinland will be guided by its comprehensive EMS system and the support of the MEWG, while a separate Inuit led system is implemented through the Inuit Stewardship Plan to assess the operations. If shipping is causing an unanticipated effect, there are many options to vary the shipping operations, including the modification of its vessel mix, use of less vessels, avoidance of shipping in specific periods or areas, or suspend shipping all together, should it be warranted. Similarly, if the rail operation is causing an unanticipated effect, Baffinland can modify the railway embankments, train schedule, number and length of trains used or suspend operations during sensitive periods, should it be warranted.
101. As confirmed by Baffinland during the public hearing in response to questions from the Clyde River Hunters and Trappers Association, adaptive management includes actions up to and including mine shut down should the circumstances require it.⁸⁰ The potential actions that would be taken will all be clearly set out in the final Adaptive Management Plan submitted to the NIRB for review and comment and separately agreed to between Baffinland and the QIA on behalf of Inuit of the Impacted Communities. The Project is adjustable and will be adjusted as needed based on monitoring and Inuit feedback.⁸¹

⁸⁰ Transcript, Vol. 13, 2440-2442

⁸¹ Transcript, Vol. 17, 3178

102. In Baffinland's view, the ability to adjust these activities, together with robust monitoring and an adaptive management plan with novel concepts such as tiered thresholds and responses (includes the concept of Early Warning Indicators) based on best available science and IQ is precisely the kind of flexible management strategy to address any residual uncertainty suggested by the Court in *Wet'suwet'en*.

2.7 Board's Jurisdiction and Mandate

103. The NIRB has jurisdiction over the reconsideration of the Terms and Conditions of Project Certificate No. 005 under Article 12, Part 8, Section 12.8.2(b) of the Nunavut Agreement. Project Certificate No. 005 was issued by the NIRB on December 28, 2012 (original Project), and amended on May 28, 2014 (for the Early Revenue Phase), amended a second time on October 20, 2018 (for the Production Increase Proposal), and amended a third time on June 18, 2020 (for the Production Increase Proposal Extension).
104. Section 12.2.5 of the Nunavut Agreement provides that in carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of residents of Canada outside the Nunavut Settlement Area.⁸²
105. In the context of the Phase 2 Proposal, the function of the Board is to gauge and define the extent of the regional impacts of the Proposal, including a review of the ecosystemic and socio-economic impacts of the Project, to determine if the Phase 2 Proposal should proceed, and if so, under what terms and conditions. This determination must be made solely taking into account the evidence on the record before the NIRB.
106. In carrying out this function, the NIRB's primary objective is at all times the protection and promotion of the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and protecting the ecosystemic integrity of the Nunavut Settlement Area.
107. It is important to emphasize that the residents and communities of the Nunavut Settlement Area, and the Intervenor and Parties to this process, will not necessarily all share the same views with respect to the Phase 2 Proposal, and the NIRB is therefore required to consider and balance disparate views and opinions with respect to what might constitute the "existing and future well-being of the residents and communities of the Nunavut Settlement Area" in a reasonable manner, taking into account the evidence before it.

⁸² It is noted that the primary objectives of NIRB does not include any reference to well-being of residents outside of Canada.

108. It would be contrary to the Nunavut Agreement for NIRB to fetter this discretion by implicitly or explicitly delegating this responsibility to any of the individual participants in the NIRB reconsideration process, including the Designated Inuit Organizations. The NIRB process is not a referendum of its participants.

2.8 Participants in the NIRB Process

2.8.1 Inuit Participants and Perspectives

109. The Board had the opportunity to hear from a wide range of Inuit perspectives throughout the reconsideration process:
- QIA participated as the Designated Inuit Organization for Qikiqtani Inuit and fee simple landowner under the Nunavut Agreement and is responsible for negotiating IIBAs per Article 26. NTI also participated in their capacity under the Nunavut Agreement.
 - As a democratically elected local government, Hamlet Councils have the responsibility to represent their entire communities, and to weigh a broad spectrum of interests including environmental, community services, food security, economics and the health and wellness of their residents. The role of municipalities and deference that must be paid to them in respect of land use matters is enshrined in the Nunavut Agreement. For example in developing a land use plan, the Nunavut Planning Commission (**NPC**) is required to solicit opinions from municipalities about planning objectives, goals and options of the region.⁸³ Part 7 of Article 11 says that NPC must give great weight to the views of municipalities: *“In the development of a regional land use plan, the NPC shall give great weight to the views and wishes of the municipalities in the areas for which planning is being conducted.”*⁸⁴ Likewise, NIRB should give “great weight” to the views of municipalities with respect to these topics as they arise within an environmental assessment. Municipalities are uniquely situated to assist NIRB in gauging and defining the extent of the regional impacts of a project (a primary function of NIRB) set out in 12.2.2 of the Nunavut Agreement.

Further, communities are given explicit acknowledgement in the “Primary Objectives” of NIRB, which is set out at 12.2.5 of the Nunavut Agreement as follows:

“In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future of the well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of residents of Canada outside the Nunavut Settlement Area.”

⁸³ See Section 11.4.4, Nunavut Agreement, “Role and Responsibility”: “Consistent with the Agreement, the NPC shall: (e) solicit opinions from municipalities, residents and others about planning objectives, goals and options of the region

⁸⁴ See Section 11.7.3, Nunavut Agreement

110. It is notable that of the participating Inuit groups in this assessment, only the communities are expressly acknowledged in the NIRB Primary Objectives. For this reason as well as the broad mandate that Hamlet Councils have to represent all community residents, Baffinland submits the views of communities on the Phase 2 proposal should be given particularly close consideration by NIRB.
- The hunters and trappers organizations (**HTO**) are recognized under the Nunavut Agreement as having the role of regulating hunting practices amongst their members (see Article 5), and Baffinland respects that the HTOs have brought that experience to this process. Individual hunters also shared their opinions on Phase 2 during the NIRB process.
 - Baffinland Inuit employees are among the most directly impacted individuals should the Phase 2 Proposal not proceed, and have an intimate professional knowledge of the details and facts of the Mary River Mine operation and monitoring programs. Additionally, these individuals have presented to the NIRB their own Inuit Qaujimagatuqangit (IQ) and the ways in which they have experienced and/or advocated for the Project through this lens.
 - Through the submission of NIRB Comment Forms and participating in the Pre-Hearing Conference, Public Hearing and Community Roundtable individual Inuk community members, including Elders, women and youth, also shared their views.
111. Many organizations have claimed to speak on behalf of Inuit throughout the NIRB review process. Some of the Intervenor's submissions even claim to know the views of "Inuit". Respectfully, to say that one knows the views of 'Inuit' on the Phase 2 Proposal is to suggest Inuit speak with one voice. Inuit views, perspectives, knowledge and worldviews are far more complex and diverse than to be treated as one voice. This complexity is reflected in the written and oral evidence that has been presented to the Board. Some individuals spoke passionately to their support of the Project, some shared their concerns or opposition. Many issues were resolved to the satisfaction of Inuit groups, while other groups identified issues they view as outstanding. All of these voices should be heard, respected and considered, and weighted as appropriate, with all of the evidence presented to NIRB during this assessment.
112. Treating Inuit as having a universally held view on the Phase 2 Proposal would not honour and respect the many individual Inuit and groups that have dedicated time and effort to participate in this NIRB process.

2.8.2 Individual Participants

113. Baffinland asks that the NIRB give great weight to the words and evidence shared by Inuit employees of Baffinland and its contractors during the NIRB process.⁸⁵

⁸⁵See the written submissions of the International Union of Operating Engineers Local 793 dated November 15, 2021, NIRB Registry No. 337337

114. It is clear that these individuals will be significantly impacted by a negative decision on Phase 2. Despite this serious risk to their livelihoods and families, these individuals have faced barriers to participation in the NIRB process. Baffinland supports the NIRB's decision to allow many individuals to give testimony in the form of a video submission that they prepared with the help of their union.
115. During the public hearing Udlu Hanson, Vice President, Community & Strategic Development, and Inuk, described some of the personal challenges Inuit employees of Baffinland have faced in sharing their positions on Phase 2 with the NIRB during its process:

The question ... about how would you feel? How would you feel if this was affecting your cabin because, I mean -- you know, it's one thing ... to talk about the effects of the mine, and it's another to make it personal. And, you know, for somebody like the Government of Nunavut representative to speak from his own experiences, it takes a lot. It's really hard to put your heart out there and try and be as passionate as you have been, Anita, very brave, very courageous, but it's also very hard and courageous for people to say why they think the mine should exist and why they think it can co-exist with hunting and harvesting. It's very difficult.

I mean, words that are being passed around like "coercion" and "demands", and we've been accused of being liars, and then we're asked, Where are our employees? Why aren't they speaking out? Because they're scared. This is what happens to us. We get attacked, personally in some cases. The video that -- it's not a Baffinland video, by the way, just for correction. It's a union video. Baffinland did not tell them who to interview, didn't help with the interviews.

With each hearing, we have employees contact us and say, I support, but I'm scared to say something. So we were thrilled that the union wanted to represent ... their members, our employees. We were thrilled. We had nothing to do with the way -- what they asked or how they put it out there. And so for people to disregard what some of those employees so courageously shared and so happily -- I mean, some of them were just so happy to share.⁸⁶

116. Throughout the Hearing the Board also heard from other Nunavummiut, who have shared their supportive views on the Phase 2 Proposal. In November 2019, Mr. Fred Hunt of Pond Inlet addressed the Board:

We stayed, and I stayed there for 17 years. And during that time, we became, during that period of time, the largest Co-Op in the CACFL -- which is now the ACL -- Co-Op system, we were a multipurpose Co-Op. We -- we built a large retail store. We rehabbed 3 houses. We operated a 24-hour, seven-day a week international aviation weather station. We developed a sports fishing camp at Koluktoo Bay where -- where I notice that you guys are not going to run your ships, the Baffinland guys, which is a good idea. That's where the fish are. We had a sports fishing camp there. So we did many, many things.

⁸⁶ Transcript, Vol. 19, 3420-21

We trained our Inuit population skills in how to do all of those jobs. They -- they hired me and one other qallunaat. Everybody else who worked for that Co-Op were Inuit. And, you know, I heard the report yesterday about how offering Inuit people a wage-earning economy doesn't do them any good and they didn't handle it well and the crime rate was higher and on and on and on. I couldn't believe that somebody would submit that report in this room and expect people like me to believe it. Statistics that come from somewhere, as far as I'm concerned, don't mean anything to what it is we're trying to do here. And I'll just slow down a bit. And I want to say that -- I'm trying to point out to you that I have unbelievably strong support for wildlife protection and environmental protection. I know how important that is to the same people I'm talking about.

But I don't believe that conflict with what is going to result in a quality-of-life change for the population of the North Baffin communities, calling them -- excuse me -- calling them liars, expressing concerns of disbelief, contradicting the evidence, not believing the -- the offer to work collaboratively with the communities, and -- it's, from my point of view, not the way that you should be going about this. I believe that -- that both sides of this debate need to realize that they have to work together.

And you're not working for yourselves there. Every one of us sitting in this room, we're all getting a paycheque. We're all going on to something else when we come back from Pond Inlet. But we've got the lives of hundreds, if not thousands, of Inuit families in our hands here because whatever we decide here is going to dictate what happens to those communities on North Baffin.

The iron ore deposit in the Mary River site -- and I was taken there 50 years ago by the hunters, by the Elders, and they asked me if I could pick up one of the rocks on the ground and tell them what I thought about that rock. When I pick -- when I picked it up -- I hope I don't lose my voice. When I -- I'm not finished yet. When I picked it up, the -- the weight of the rock was what surprised me, and I told them, This rock is too heavy. And they said, Yes. Look at the colour of the growth on the side of the hills, and what colour do you see?

And it was orange. And they said to me -- and I'll never forget it because it drove the next 17 years of my life. They said to me, That's iron, and that's what's going to save the lives of our kids, our 6 grandkids, and our great-grandkids. That is going to -- that is going to be what makes our community -- and they were talking about Pond Inlet because that's where they were from -- that is what's going to make our community grow and keep our children here so they never have to go away to survive.

Those people were all hunters. They were all livers on the land, people. But they understood what that Mary River site meant. And as I spent 17 years building that Co-Op, I was building that Co-Op to that end. I was -- never lost sight of the fact that that's what our one and only real chance was going to be, and we had to be ready for it. I understand why groups -- interest groups are trying to maximize the benefits, and they should be doing that. I'm not a politician. I fully understand the role of QIA. I fully understand the role of the Hamlet councils and the Hunters and Trappers Organizations. It's not what I do. It's not my interest. My interest is the

quality of life that you're representing at this table, and it's not your interest, but it's their -- the people's interest.

There's so many people who are gone now that have driven me. Some of them are still around with me. Daniel Komangapik, the first chairman of the Board of Tununiq Sauniq Co-Op, he's still alive. He can't hear, and he can't see, but him and I can still communicate to each other, and he still talks about, How did we do? Did we get it done? And it's near and dear to him.

So I guess the -- I will try not to drag this out. The importance of the Co-Op movement in our communities is -- is amazing. It -- it brings into -- into our community many millions of dollars in wages at the community level. We have taken the four -- five -- four Co-Ops in the North Baffin into two joint ventures in Baffinland, one of which is a Nuna Logistics North Baffin Co-Op coalition joint venture called "Nuna East". It has enhanced the employed population of -- of the four Co-Ops or of the community by more than 100 people. The distribution of the profits derived above and beyond the wages paid to those people is spread out in the form of patronage dividends to the membership, which basically is all of the families in these communities. Pond Inlet Co-Op distributed \$1.8 million in patronage dividends to their membership in 2018.

This is all adding to the -- the wealth and the opportunities that are being generated through the Co-Ops and through their joint ventures, and Baffinland Iron Mines is a critical opportunity to continue that growth. I urge everybody here to think hard about what it is you're trying to achieve in this hearing, and -- and are you really striving to find solutions to the problems, or are you prepared -- and this is the tough question -- are you prepared to walk out of this room and see this mine shut down?

And if you don't think that's a reality, you should think again about that. Because it is a reality. Hundreds of millions of dollars have to be invested to -- to produce what's coming out of that ground. And, yeah, there's going to be profit made by those investors, and we, as -- as people of those communities, have to -- and this is your job -- maximize what the benefits are going to be for us.

But you have to work together, and you have to earn -- the big word you have to learn how to use is "trust". Everything I've ever done in my lifetime with the Inuit people -- and I'm classified as an Elder now ... I'm on my last road. I want to see it happen, but you've got to work with trust. And as a representative of the North Baffin Co-Op coalition, I am here in full support of the approval of the Phase 2 expansion opportunities that are being generated through the 2 Co-Ops and through their joint ventures, and Baffinland Iron Mines is a critical opportunity to continue that growth.⁸⁷

⁸⁷ Transcripts, Vol. 5 (November 2019), 922-931

2.8.3 Nunavut Tunngavik Inc.

117. NTI is a privately incorporated organization that is the successor to Tunngavik Federation of Nunavut, the signatory to the Nunavut Agreement. NTI is responsible for representing the Inuit of all the regions and communities of Nunavut to safeguard, administer and advance the rights and benefits that belong to the Inuit of Nunavut and to promote their economic, social, and cultural well-being through succeeding generations. NTI advances and protects Inuit interests and ensures that the commitments made under the Nunavut Agreement are met.
118. Baffinland appreciates the acknowledgment in NTI's Final Written Statement that, "NTI continues to believe that the Mary River Project has the potential to provide extensive economic and social benefits to Inuit when impacts on Inuit harvesting, wildlife and the environment can be adequately monitored and mitigated in partnership with Inuit and through the incorporation of Inuit Qaujimajatuqangit." Baffinland agrees, and we believe the Phase 2 Proposal presented to the Board meets this standard.
119. Baffinland notes, however, that in its Statement it appears NTI has misunderstood that an increase in tonnage does not simultaneously mean and lead to an increase in impacts. This relationship is not linear and is a common misconception that appears to be shared by many participants in the NIRB process. For context, a recent analysis conducted by Baffinland in response to the Board's 2020-2021 Annual Monitoring Report, demonstrates that there is no direct correlation between the volume of dustfall and the increase in production associated with the current Project. Specifically, from 2016 to 2020, dustfall generally plateaued with only modest increases in some Project areas (NIRB Registry No. 337505). Key design aspects of Phase 2 will reduce dust along the Northern Transportation Corridor significantly compared to the 4.2 mtpa or even 6 mtpa trucking operation, even though more ore will be transported when the railway is operational. There has also been no correlation between increased shipping, narwhal abundance and narwhal harvesting.⁸⁸ Hunters have continued to have successful narwhal hunts during current operations. In fact in 2021 hunters experienced the most hunting success late in the season when Baffinland vessels were still transiting through Eclipse Sound and the only other activity occurring in the area (it is noted community members described that the successful harvests outside of Pond Inlet occurred only after construction activities at the Pond Inlet Small Craft Harbour project were complete).
120. NTI also included wording in its Final Written Statement which suggests that NTI could support the approval of the Phase 2 Proposal by NIRB and the Minister if there is:
- substantial progress in addressing current impacts from the existing Mary River Project through stronger Project terms and conditions and implementation measures that satisfy Inuit concerns, and
 - improvements to the Phase 2 Proposal that provide for greater integration of Inuit views, IQ and western science in the assessment of potential impacts from the Phase 2 Project and the monitoring and mitigation of any impacts

⁸⁸ Marine Environment Presentation, page 55, NIRB Registry No. 332553.

121. With respect to the first bullet, should a Phase 2 Project Certificate be issued by NIRB, Baffinland, QIA, GC and GN have all suggested Project Certificate Terms and Conditions that would strengthen and clarify existing Terms and Conditions, and most of these suggestions to NIRB were made with concerns expressed by Inuit participants in the NIRB process at top of mind. QIA will also be consulted by the Minister before the Minister's recommendation is made, which should help give NTI further assurance that this condition of support can be met.
122. With respect to the second bullet, there is no doubt that the Phase 2 commitments provide for greater integration of Inuit views, IQ and western science in the assessment, monitoring and mitigation of Phase 2. Baffinland and QIA have each outlined their commitments to implement the components of the ICA that provide for exactly what is requested, including the completion of an additional CRLU Assessment to add additional baseline to the robust CRLU Assessment that was already completed by Baffinland in the FEIS Addendum and help inform the CRLU Monitoring Program. These commitments are conditional on Phase 2 approval.
123. Baffinland also appreciates that at the time of filing NTI did not have the benefit of the Hamlet of Pond Inlet and Hamlet of Sanirajak's Final Written Statements support for the proposal demonstrating that the majority of Impacted Communities wish the Phase 2 proposal to proceed, or the updated Commitment List and Disposition Table which includes significant additional commitments targeted specifically at addressing concerns raised by Pond Inlet residents. These additional commitments have further improved the Phase 2 Proposal, such that it has now garnered community support from the Hamlet of Pond Inlet.
124. As NTI has otherwise essentially relied on QIA's Final Written Statement, Baffinland refers NTI generally to its response to QIA's Final Written Submission in the following section.

2.8.4 Qikiqtani Inuit Association (QIA)

125. QIA is a Designated Inuit Organization under the Nunavut Agreement, representing the rights and values of the Inuit within the Qikiqtani region concerning rights to water and wildlife compensation, landowner rights, and negotiations of an Inuit Impact and Benefit Agreement.
126. Of the 53 technical issues raised by the QIA, only three remain not fully resolved between QIA and Baffinland. Despite not having a mutually resolved status to report to the NIRB on the outstanding issues, Baffinland submits that those issues have been objectively addressed with our detailed technical responses and associated commitments as described in the Disposition Table.

2.8.4.1 General Response to QIA Final Written Statement

127. The general position expressed by the QIA in its Final Written Statement is summarized at page 24 as follows:

Inuit Participation in Monitoring and Decision Making

“In the case of Baffinland’s current Phase 2 proposal, Inuit were asked to respond to plans submitted by the company without the necessary Inuit participation in the development of those plans. Attempts to bridge Inuit participation gaps during this hearing process have not yet resulted in the studies, plans, and structures which need to be in place to ensure Inuit participation in adaptive management, monitoring, and environmental decision-making on an expanded Mary River Project which will so deeply affect Inuit communities.”

128. However, during the NIRB process, in June 2020, Baffinland agreed with the QIA, under the ICA, to “ensure Inuit participation in adaptive management, monitoring, and environmental decision-making”. In signing this agreement, it was determined by QIA and Baffinland that any residual perception the QIA held with respect to a lack of integration of Inuit into the FEIS Addendum could in fact be addressed, following the approval of the Project, through the implementation of exemplary commitments, contained within the ICA and made by Baffinland to ensure Inuit perspectives are deeply embedded into monitoring and management of the Project.

129. Respecting monitoring, under Schedule ID1 (Inuit Committee and Inuit Stewardship Program) of the ICA, both Parties agreed:

“1.1.1 Nothing is of higher importance to Inuit than the ability to conduct independent, proactive monitoring of the Project for the purpose of mitigating adverse impacts and enhancing beneficial outcomes in a manner that captures the direct experiences of Inuit in impacted communities. This monitoring would be in addition to monitoring mandated by regulatory bodies and instruments including, but not limited to, any monitoring plans they prescribe, adding an Inuit-led, IQ-enriched form of monitoring to the Project that is in keeping with the expectations and rights of Inuit.”

130. The provisions of Schedule ID1 provide details of independent Inuit led monitoring and Inuit development of the Inuit Stewardship Plan. The Inuit Stewardship Plan is a “Project management plan that will be authored by the QIA . . . and implemented by Inuit” (Schedule ID1, Section 1.1.2).

131. Section 1.1.3 of Schedule ID1 specifies that:

“The ISP will describe how Inuit monitoring activities tie into the adaptive management system and other management, mitigation, and monitoring plans, and, how Inuit monitoring will relate to the protection and promotion of Inuit rights defined under the Nunavut Agreement and described under legal agreements with Baffinland related to management and stewardship of Inuit owned lands and resources.”

132. The ICA provides extensive details of how Inuit participation is ensured:

- Schedule ID1 – Inuit Committee and Inuit Stewardship Program
- Schedule ID2 – Adaptive Management Plans Approval

- Schedule ID3 – Social Monitoring Framework
- Schedule ID4 – Culture, Resources and Land Use Monitoring
- Schedule ID6 – Culture, Resource and Land Use Assessment
- Schedule ID7 – Pond Inlet Country Food Baseline

133. The QIA Final Written Statement acknowledges this at page 9:

“The ICA work resulted in proposed structures to strengthen IQ integration and Inuit-led adaptive management, including:

- *an **Inuit Committee** with impacted Inuit community participation to ensure Inuit leadership in environmental decision-making for the project, and to address Inuit concerns about the lack of responsiveness to Inuit concerns in the existing Working Group processes for the marine and terrestrial environments;*
- *an **Inuit-led Adaptive Management Planning process** including Inuit defined triggers (**Inuit Objectives, Indicators, Thresholds and Responses** or OITRs);*
- *a **Culture, Resources and Land Use Study** (CRLU Study) to ensure adequate IQ is available for comparison and use in any adaptive management planning process;*
- *an **Inuit Social Oversight Committee** (ISOC) to ensure Inuit leadership, from the impacted communities, in identifying and measuring the impacts of the Mary River Project on social wellbeing; and*
- *an **Inuit Stewardship Plan** (ISP) developed by QIA and the impacted Inuit communities as a framework for Inuit-led environmental and social impacts monitoring and management.”*

134. Again, these provisions, binding on Baffinland under the ICA and under Project Certificate Terms and Conditions, achieve the objective of ensuring Inuit participation in monitoring and adaptive management decision-making.

135. The QIA Final Written Statement does not indicate that these requirements under the ICA or the Project Certificate Terms and Conditions are inadequate in any specific way. They are in fact the requirements and terms and conditions proposed by the QIA and agreed to by Baffinland under the ICA, many of which can also be enshrined within a revised Project Certificate and have been proposed in each of Baffinland and QIA’s recommended Terms and Conditions.

136. The QIA Final Written Statement states that the ICA structures are based on the assumption that all the communities would need to “consent”. This is not reflected in the ICA, which refers to reasonable and adequate “consensus” among communities (ICA, Section 5.6(d)). In fact, the Hamlet of Pond Inlet, the community most affected, has indicated its support, as have the Hamlet of Sanirajak, in their Final Written Statements and in previous submissions to the NIRB, the Hamlet of Arctic Bay and Grise Fiord. These expressions of support are not considered in the QIA Final Written Statement and constitute the majority of Impacted Communities demonstrating their support.

137. The QIA Final Written Statement says that further work and input from communities is needed on the Inuit Committee, the Inuit Stewardship Plan and other ICA structures and mechanisms. Baffinland agrees that further work and input is required, but it was agreed between QIA and Baffinland that the work was required to be complete prior to proceeding with Phase 2 operations. It was not contemplated that this work would be completed prior to the closing of the NIRB public hearing record or Ministerial Project approval. At the time of signing the agreement and in building the subsequent work plan agreed to between Baffinland and QIA, QIA acknowledged and accepted that this work would be on-going post project approval, if Phase 2 were to proceed. The fact that these structures would not be in place prior to project approval was not a barrier to QIA's support for the ICA or resolution of its technical comments. Indeed the QIA has been working on these structures and there is no evidence to support their position that these structures are now required prior to project approval. The structures have been designed to specifically mitigate against adverse effects from Phase 2, and per the ICA, even if Phase 2 is approved, Phase 2 operations will not proceed until these structures are in place. However, should Phase 2 be approved, Baffinland would be supportive of getting these structures in place as soon as possible to also help address some of the concerns that have been raised with respect to current operations.
138. In fact, as outlined in Schedule C of the ICA, if Phase 2 is not approved, QIA and Baffinland agree that commitments related to the Inuit Committee, the Inuit Stewardship Program, the Adaptive Management Plan, Social Monitoring and Culture, Resource and Land Use structures, would be null and void. It would not make sense for QIA to require the structures in place prior to Project approval, given they are dependent on Phase 2 approval.

It is also a normal feature of the NIRB process for work committed to during the assessment to be completed post-approval. As an illustration of this point, the NIRB did not require the Marine Environment Working Group (**MEWG**) to be constituted before approval of the original Mary River Project. As stated by QIA during the November 2021 hearing, establishment of the Inuit Committees has advanced to at least the preparation of a draft terms of reference by QIA, the MEWG was at a similar stage at the time NIRB issued its recommendation on the original project.

139. Despite these commitments requiring an approval on the Phase 2 Proposal to advance the Inuit Committees and related work, Baffinland has made best efforts since the signing of the ICA to ensure that these commitments can be implemented as quickly as possible following an approval. For example, the ICA at Schedule ID1 – Inuit Committee and Inuit Stewardship Program, Section 1.1.2 specifies:

"1.1.2 The Inuit Stewardship Plan (ISP) is a Project management plan that will be authored by QIA, with input from the Inuit Committee and the Inuit Social Oversight Committee for the Mary River Project (the Project), impacted communities, and Baffinland and implemented by Inuit. The ISP will be presented to Baffinland for feedback prior to QIA's finalization and approval. Baffinland will be responsible to fund the ISP for the life of the Mary River Project. Funding requirements to be laid out in Schedule 31."

140. References are made to community input throughout the ICA, and under the current arrangement the QIA will have the primary responsibility to conduct this work.
141. The QIA Final Written Statement also says that the ICA structures were based on the assumption that the final structures and mechanisms (including adaptive management thresholds) would be determined. In fact, the QIA agreed to implementation of these structures through the Inuit Stewardship Plan and the Adaptive Management Plan. Baffinland has proposed adaptive management thresholds. The QIA has not yet fulfilled its own commitment to propose adaptive management thresholds – however, as we have stated above, there is time before Phase 2 begins operations for QIA to carry out these important tasks. Under the ICA, ID2 – Adaptive Management Plans Approval, and the Appendix to ID2, the QIA and Baffinland have reached a “Jointly Approved Draft” of the Adaptive Management Plan. Baffinland has submitted proposals for thresholds to the QIA and those have been filed on the public record⁸⁹.
142. Under ID2, Section 2.2.5, it is agreed that Baffinland and the QIA will have joint approval of initial objectives, indicators, thresholds and responses for adaptive management. Section 2.2.7 specifies that the initial objectives, indicators, thresholds and responses “will be subject to later refinement upon collection of IQ, completion of the CRLU Assessment and the Pond Inlet Country Food Baseline, and inputs identified in Section 2.1.8 (the Inuit Stewardship Plan).”
143. There is time to implement these requirements as a condition of Project approval before full Phase 2 operations can commence. This is described in the ICA. Should NIRB wish, this can also be a clear, binding, and enforceable condition in the Project Certificate. The QIA has confirmed that if the Project is approved, the QIA will implement the provisions of the ICA (see statements of the QIA at the April 2021 hearing, and in response to written questions) and that these commitments will be realized.⁹⁰

2.8.4.2 Addressing Uncertainties

144. The QIA Final Written Submission raises concerns about uncertainties relating to potential effects, and whether proposed environmental mechanisms would be sufficient to address evolving impacts.
145. The Draft Adaptive Management Plan, jointly drafted by the QIA and Baffinland, specifies as follows, in addressing uncertainty, adaptive management, the input of IQ, and the Precautionary Principle:

“This Adaptive Management Plan (AMP) for Baffinland’s Project provides an overview of the management mechanisms established to identify where mitigation measures may not sufficiently address potential adverse effects, and to address uncertainty or conditions that may occur during operations that were not anticipated during the planning phase. A precautionary approach to managing the Project inclusive of this adaptive management plan acknowledges uncertainties exist while developing systems and approaches for responding to changing conditions, with the goal of avoiding adverse effects by taking action before these occur or, at

⁸⁹ Inuit Certainty Agreement, NIRB Registry No. 332869

⁹⁰ Hearing Transcript, Vol. 17, 3301

minimum, responding quickly and meaningfully to observed changes that may be partially to wholly attributable to the Project. It is a particularly useful tool in long-term projects, as it facilitates progressive integration of the collective body of Inuit Qaujimanituqangit, improvements in scientific understanding and advances in mitigation measures.

This structured approach to continual improvement expands on the memo titled “Baffinland Environmental Monitoring, Mitigations and Adaptive Management Overview”, drafted to address the requirements outlined in the Mary River Project Guidelines (the Guidelines, NIRB 2015) and to integrate the various environmental management and monitoring plans into a consistent adaptive management framework.

A key part of Baffinland’s approach to adaptive management is incorporation of community review and feedback; particularly, the incorporation of Inuit Qaujimaqatuqangit (IQ) to improve or extend the effectiveness of the Environmental Management System (EMS) for the Project. In recognition of the critical role that IQ and Inuit play in project monitoring and management, the Adaptive Management Plan has been revised to better incorporate roles for QIA and affected Inuit communities. One key revision is that QIA and Baffinland must jointly agree on the Adaptive Management Plan, and specific adaptive management actions included in “sub-plans” – i.e. prescribed adaptive management elements reflected in specified management and monitoring plans, as specified in this AMP. QIA will also play a key role in the direct collection of monitoring information that trigger adaptive management actions where necessary through the Inuit Stewardship Plan. The Inuit Stewardship Plan, a Project Plan developed by and implemented by Inuit, includes mechanisms such as the Culture, Resources and Land Use Monitoring Program and the Social Monitoring Stream. Each of these areas include committees comprised of Inuit from affected communities. The Inuit Stewardship Plan will assist in gathering data, setting thresholds for impacts that are considered to require action under the Adaptive Management Plan, actively monitoring, and gauging the success of these actions. It is recognized and understood finalizing the Adaptive Management Plan requires careful integration of requirements associated with regulatory requirements. A final jointly approved Adaptive Management Plan will ensure these considerations have been appropriately made.” (Jointly Approved Adaptive Management Plan (Draft), Appendix 1 to Schedule ID2 of the ICA)

146. The QIA Final Written Submission does not indicate any specific QIA concern with the Adaptive Management Plan (which will require joint agreement to implement). Uncertainty is inherent to any environmental assessment process, even when the Precautionary Principle must apply. Baffinland refers the Board to Section 2.8 of this statement for an expanded argument in response to the QIAs outstanding concerns related to uncertainty in the assessment.

147. Baffinland's commitments go well beyond the general approach to environmental impact assessment and project approval. Uncertainty has been reduced or eliminated by the commitment to the AMP. Again, the commitment under the AMP is to monitor impacts intensively, to establish IQ based and western science-based indicators and thresholds against which to measure the impacts, and to take action by mandating additional mitigation measures from the pre-established Mitigation Toolkits to ensure that impacts are avoided or mitigated.

2.8.4.3 Monitoring and IQ

148. The QIA Final Written Statement suggests that:

"The environmental monitoring programs which are currently proposed are focused on western science with little consideration of monitoring through an IQ lens." (QIA Final Written Submission, page 13)

149. This is not true of Baffinland's monitoring programs to date, for example Baffinland has confirmed that in 2019 50% of the Baffinland led marine monitoring programs were staffed by Inuit⁹¹, and QIA's statement completely ignores the independent Inuit led monitoring negotiated and agreed to by QIA under the ICA and included by Baffinland in the Commitment List. In fact, the ICA specifies as follows, by agreement:

"1.1.1 Nothing is of higher importance to Inuit than the ability to conduct independent, proactive monitoring of the Project for the purpose of mitigating adverse impacts and enhancing beneficial outcomes in a manner that captures the direct experiences of Inuit in impacted communities. This monitoring would be in addition to monitoring mandated by regulatory bodies and instruments including, but not limited to, any monitoring plans they prescribe, adding an Inuit-led, IQ-enriched form of monitoring to the Project that is in keeping with the expectations and rights of Inuit."

150. At pages 68 and following of the QIA Final Written Statement, the QIA summarizes the structures and commitments in the ICA. The QIA states:

"The ICA proposes Inuit-designed and Inuit-led environmental management structures that strengthen IQ integration and Inuit-led adaptive management, which would resolve many of the outstanding concerns detailed in the Technical Comments above. The structures and commitments in the ICA that are relevant to the NIRB review process include:

- **An Inuit Stewardship Plan for the Mary River Project** will be created, as a framework for Inuit-led monitoring of impacts within communities and on the land, waters and ice as a result of the Mary River Project. Nauttiqsuqtiit (Inuit stewards) will be hired to monitor and report on social, environmental, and cultural impacts. The Inuit Stewardship Plan will be run by QIA and funded by Baffinland. The Inuit Stewardship Plan will be built through open and

⁹¹NIRB annual report for 2019 submitted March 2020

active engagement with two new committees, the Inuit Committee, and the Inuit Social Oversight Committee.

- An **Inuit Committee** will be established to provide oversight and direction for the culture, resource, and land use monitoring stream, and ensure input on Inuit values to be incorporated into project management plans. The Inuit Committee is a structure that guarantees Inuit community participation in environmental decision-making for the project, and addresses Inuit concerns about the lack of responsiveness to Inuit concerns in the existing Working Group processes for the marine and terrestrial environment. Impacted communities will nominate members to the Inuit Committee.
- An **Inuit Social Oversight Committee** (“ISOC”) will be established to provide oversight and direction for the social monitoring stream related to environmental management for the Project. Impacted communities will nominate members to the Inuit Social Oversight Committee.
- An **Inuit-led Adaptive Management Planning process** is the key goal of the ICA. Adaptive management means monitoring the impacts from the Mary River Project, identifying negative impacts, and acting to prevent any further or more serious effects. QIA and Baffinland will jointly approve the Adaptive Management Plan and the adaptive management components of other project management plans, and the impacted communities will play a key role in developing the determining indicators and actions (the “**Inuit Objectives, Indicators, Thresholds and Responses**” or “OITRs”) that will ensure that the Mary River Project operations are environmentally and socially responsible. The Adaptive Management Plan will have a set of key observations that can force Baffinland to take preventative measures. The Inuit Stewards from the Stewardship Program will be a significant resource of information gathering for setting indicators and actions for the Adaptive Management Plan.
- A **Social Monitoring Framework** will focus on community wellbeing. This program will monitor community impacts related to the mine. Some things that will be monitored are language preservation, access to country food, supporting youth and elders, quality of life, housing, income and cost of living, education and training, and mental health. The Inuit Social Oversight Committee will provide oversight and direction for this social monitoring.
- A **Culture, Resources and Land Use Study** (“CRLU Study”) will be conducted before any new major construction related to the rail alignment. This study will involve QIA, the impacted communities and Baffinland, and will ensure that adequate IQ is available for comparison and use in any adaptive management planning process. The findings of the CRLU Study may require modifications and additions to mitigation, monitoring, adaptive management, and compensation measures.
- A **Culture, Resources and Land Use Monitoring Program** (“CRLU Monitoring”) will collect data related to the health and abundance of wildlife, to the land and waters, and to the ability of Inuit to continue to live in harmony with the land. This Program will be Inuit-led

on-site monitoring of the Mary River Project. Monitoring will be done through Nauttiqsuqtiit (Inuit Stewards) QIA on-site monitors, and community members. This monitoring will help ensure proper implementation of the Adaptive Management Plan. The Inuit Committee will provide oversight and direction for the Monitoring Program to ensure adequate IQ is available for comparison and use in any adaptive management planning process.”

151. These are carefully considered management structures that clearly address the concerns of the QIA and of communities. They do require work to implement. Baffinland has fulfilled its initial implementation work, and more needs to be done by the QIA to implement these structures and get them operating. There is clearly enough time to do that prior to start-up of Phase 2.

2.8.4.4 Other Issues brought forward

152. The mutual commitments under the ICA address other issues raised by Inuit participants in the NIRB reconsideration.
153. Some participants suggested that additional CRLU assessment is required, based on their view that that the Tusaqtavut Studies confirms Inuit are experiencing significant impact. This is not an accurate description of the Tusaqtavut Studies. In fact, the Tusaqtavut Studies specifically confirm that they did not consider mitigation measures. By excluding consideration of the extensive mitigation measures for Phase 2, the Tusaqtavut Studies had no foundation for reaching conclusions on significant effects and did not purport to do so. (See the “Limitations” section of the Tusaqtavut Study). The conclusions of the Tusaqtavut Studies are based on an unmitigated, unmanaged version of Phase 2 – not at all resembling the Project that is presented to NIRB for approval which includes the existing mitigations in place at the current project along with the NIRB Commitment List and the robust and comprehensive ICA.
154. Baffinland carried out a CRLU Assessment as part of the FEIS Addendum, and provided supplemental information on this topic to NIRB during the assessment. Baffinland’s CRLU Assessment and Baffinland’s evidence to the Board on this topic is robust and prepared at a standard that meets the requirements of the NIRB and provides NIRB with the assessment information it needs in order to make a positive decision on the Phase 2 Proposal.
155. Nonetheless, Baffinland and QIA have agreed that it would be desirable to enhance baseline information on CRLU before Phase 2 proceeds. Baffinland appreciates that Inuit experience is not static and it always desirable to have more information from landusers. Baffinland and QIA’s agreed approach to one or more supplemental CRLU assessments is set out in detail in ID 6 of the ICA. In order to address QIA’s concerns to ensure that there is an adequate base from which to monitor impacts on CRLU related to the Project, Baffinland has agreed in the Commitment List and in the ICA that an additional CRLU Assessment will be carried out if the Phase 2 Proposal is approved:

“Inuit have therefore proposed, and Baffinland has accepted, that a Phase 2 CRLU Assessment will be conducted prior to Major Construction Activities and will form a basis from which Inuit and Baffinland will monitor and assess the adequacy of impact predictions and make decisions

on adaptive management. Baffinland agrees the Phase 2 CRLU Assessment will contribute to the body of information that will be used to monitor and manage the Mary River Project.”

“Baffinland agrees to carry out a Phase 2 CRLU Assessment, conducted jointly with QIA, and after consultation between QIA with the impacted communities. The parties’ roles, methods, and resources required for the Phase 2 CRLU Assessment will be defined through discussions between Baffinland, QIA and impacted communities.”

156. Subsequent to the signing of the ICA, QIA indicated that they wished to take the lead on this initiative, and Baffinland agreed to support this approach. The QIA has made it clear that if Phase 2 is approved it will implement the management structures of the ICA which will provide the stewardship and constant feedback processes they are seeking. (See the QIA hearing presentation and QIA Responses to Written Questions submitted March 22, 2021, and in particular Baffinland Question 6).
157. Baffinland has agreed to contribute \$9 million per year for the first three years after approval, reduced to \$8 million per year thereafter to the QIA to implement the IIBA, which will include all of the ICA commitments, and manage the tasks they are responsible for under the agreement. Baffinland proceeded in the assessment since that time in reliance on the work plan and commitments given to them by QIA.
158. It is not unexpected that many tasks have been commenced but are not yet complete at this stage of the NIRB process, and will be completed post assessment prior to project commencement. This approach has been accepted by NIRB and the NWB on multiple previous locations, and is not novel to the Phase 2 proposal. QIA's most recent position on their technical comments⁹² demonstrates that these structures are seen as critical foundations to the management of the project and that QIA is committed to the development of these structures and completing them, as confirmed by QIA at the final public hearing.⁹³
159. The Inuit Stewardship Plan, Inuit Committees, Adaptive Management Plan, and supplemental culture resource and land use summaries and monitoring will be completed before Phase 2 proceeds. Baffinland remains committed to support QIA in its execution of this very important work. However, in the event that QIA is unable to carry out the required tasks, Baffinland would support the full implementation of these structures and could rely on their IQ Advisors in each Impacted Community to work directly with the Hamlets, HTOs and individual residents in order to ensure these important structures are in place. In any event, Baffinland has made the commitment that operations for Phase 2 would not proceed in the absence of these structures and plans.

⁹² QIA Cover letter sent to NIRB on January 21, 2022

⁹³ Hearing Transcript Vol. 16, p. 3078-3080, NIRB Registry No. 337420; Hearing Transcript Vol. 17, p. 3301, lines 1-23, NIRB Registry No. 337437.

2.8.4.5 Moving Forward

160. The consultation record with the QIA is extensive and comprehensive. There is no basis to any suggestion that the QIA has not been party to the fullest and most intensive consultation. The ICA itself is evidence of this full consultation. In the ICA negotiations, the QIA sought and achieved, as stated above, its own proposed “structures to strengthen IQ integration and Inuit-led adaptive management” as well as extensive additional socio-economic benefits relating to training, employment, business opportunities for Inuit firms, and substantially increased royalty payments that can be applied to community benefits.
161. On-going consultation with QIA is fundamental as well to the ongoing Inuit led monitoring under the ICA through the Inuit Committee, the Inuit Stewardship Plan and the adaptive management process. That process includes Inuit-defined triggers (Inuit Objectives, Indicators, Thresholds and Responses). These processes are in fact full consultation and active engagement throughout the life of the Project. Consultation with the QIA has been extensive leading to the QIA objectives fulfilled in the ICA, and ongoing extensive and meaningful consultation is a key fundamental structure of the ICA.
162. The QIA indicated to NIRB that they were not able to achieve “consensus” with the Impacted Communities on the ICA structure and processes. However, Baffinland continued to consult directly with those communities to address their concerns. The Hamlet of Pond Inlet has now clearly expressed its support for the Project and the ICA, as have Arctic Bay and Sanirajak. These represent a majority of the Impacted Communities – what would generally be deemed a consensus.
163. With respect to the other Impacted Communities of Clyde River and Igloolik, and the HTOs, Baffinland is confident that the commitments made through the ICA and other measures, and the direct commitments made to all communities and the HTOs substantially address their concerns. And we hope that those communities and HTOs will ultimately recognize that their objectives of environmental protection and the receipt of appropriate benefits will actually be fulfilled with appropriate terms and conditions for the Project. Clyde River and the Igloolik Working Group also both acknowledge in their Final Written Statement that they based their position in part on their understanding that the Hamlet of Pond Inlet does not support the Project – which is incorrect.
164. The QIA raises the issue of whether their “consent” is required for Phase 2. We address this legal issue in detail in Section 7 of this Final Written Statement. Neither the Nunavut Agreement nor NuPPAA requires QIA consent for project proposals.
165. Baffinland hopes that in view of the support of Pond Inlet, Arctic Bay and Sanirajak, our commitment to avoid or mitigate impacts to the environment, our commitment to adaptive management, our commitment to the Inuit-led structures and processes under the ICA, our commitment to communities and to HTOs and harvesters, the QIA will come back to its original position of support as reflected in the successful ICA negotiations.

166. The Phase 2 Project will enhance the current and future well-being of Inuit, and the measures adopted by Baffinland and agreed to (in fact proposed) by the QIA will ensure full Inuit participation in monitoring, ongoing impact assessment, and adaptive management to avoid or mitigate significant environmental or socio-economic impacts.
167. If the Project is approved, the QIA has confirmed that it will implement the ICA and that implementation will address their concerns in a positive and sustainable way, with full Inuit participation.

2.8.5 Hamlet of Pond Inlet

168. As stated by the Hamlet of Pond Inlet, “The Hamlet Council is responsible for the well-being of all the residents of Pond Inlet.” They must decide independently on behalf of the entire population of the community to support Phase 2 based on the economic impacts and long term, committed benefits that Pond Inlet will receive by keeping the mine open through Phase 2.” [emphasis added]⁹⁴
169. The role of the democratically elected municipalities and deference that must be paid to them in respect of land use matters is enshrined in the Nunavut Agreement. For example, in developing a land use plan, the NPC is required to solicit opinions from municipalities about planning objectives, goals and options of the region.⁹⁵ Part 7 of Article 11 says that NPC must give great weight to the views of municipalities: “In the development of a regional land use plan, the NPC shall give great weight to the views and wishes of the municipalities in the areas for which planning is being conducted.”⁹⁶ In Baffinland’s view, the NIRB is also obligated to give great weight to the views and wishes of the most impacted municipalities in relation to land use activities in their area.
170. Baffinland is grateful to the Hamlet of Pond Inlet for acknowledging the community engagement on the Proposal since 2014. The changes made to Phase 2 as a result have immeasurably improved the proposal. Baffinland also appreciates that in coming to their position of support for Phase 2 the Hamlet has listened intently to the variety of views on Phase 2 expressed within the community. The Hamlet of Pond Inlet also includes a detailed and lengthy list of evidence of some of the direct financial benefits that have been experienced by Pond Inlet to date from the Mary River Project, as well as a detailed list of direct benefits Baffinland has committed to should Phase 2 proceed. Our commitments to Pond Inlet are also set out in detail in the NIRB Commitment List. The Hamlet of Pond Inlet reconfirmed its support for the Inuit Certainty Agreement and the greater Inuit participation in the Project and benefits to Inuit it will ultimately provide.

⁹⁴ Final Written Statement, Hamlet of Pond Inlet, January 10, 2022

⁹⁵ See Section 11.4.4, Nunavut Agreement, “Role and Responsibility”: “Consistent with the Agreement, the NPC shall: (e) solicit opinions from municipalities, residents and others about planning objectives, goals and options of the region;

⁹⁶ See Section 11.7.3, Nunavut Agreement

171. Baffinland also appreciates the great weight that Pond Inlet has placed on the Phase 2 approach to adaptive management, and its advice to NIRB to place emphasis on protection of wildlife and the environment in the form of new and modified terms and conditions in the Project Certificate:

The commitment made by Baffinland Iron Mines in the establishment of an Adaptive Management Plan – controlled by Inuit, is very important and critical. Inuit, not BIM will have decision making control and BIM’s commitment to this management system will ensure maximum input from Inuit into mitigation solutions of any potential adverse environmental effects.⁹⁷

2.8.6 Hamlet of Arctic Bay

172. Baffinland is grateful to the Hamlet of Arctic Bay for its expression of support for the Phase 2 Proposal. The Hamlet of Arctic Bay confirmed its support of the Inuit Certainty Agreement and the Phase 2 Proposal in its submission of September 23, 2021. For NIRB’s convenience, Baffinland reproduces this motion in its entirety:

“Whereas the Hamlet of Arctic Bay has spent more than three years engaged in discussions, workshops, hearings and deliberations concerning Baffinland Iron Mine’s Phase 2 expansion proposal for the Mary River Project,

Therefore, the following motion is passed by the Hamlet of Arctic Bay:

That the Hamlet of Arctic Bay supports the Phase 2 expansion that has been presented by Baffinland Iron Mine at the NIRB hearings in Iqaluit and Pond Inlet with the condition that environmental monitoring be fully enforced, and further

That the Hamlet of Arctic Bay supports the Inuit Certainty Agreement as developed by Baffinland Iron Mine and the Qikiqtani Inuit Association and further

That the Hamlet of Arctic Bay agrees that the Adaptive Management Plan envisioned in the Inuit Certainty Agreement will greatly improve the ability of North Baffin Inuit to monitor the impact of the mine on local wildlife and adjust mining activities at the Mary River Project as required to protect and sustain that wildlife”⁹⁸

2.8.7 Hamlet of Sanirajak

173. Baffinland is grateful to the Hamlet of Sanirajak for its expression of full support for the Phase 2 Proposal. Their Final Written Statement also recognizes the significant investment in infrastructure that has been committed to if Phase 2 proceeds:

⁹⁷ See Final Written Statement, Pond Inlet, January 10, 2022

⁹⁸ Hamlet of Arctic Bay Council Motion 21-2021-152

Baffinland has committed to making significant investment in infrastructure in Sanirajak should their Phase 2 proposal be approved. These including the creation of a training centre where seven people would be employed and as many as 20 people would be trained every six months, the building of a garage where three apprentices would be employed and community residents would be provided with free labour to repair their equipment, the building of a daycare and an office. They have also committed that they would buy a research vessel valued at \$300,000 for the community. Additionally, Baffinland has committed to providing assistance with the erection of repeater towers between Igloolik and Sanirajak that will greatly assist with Search and Rescue operations in the area. With Sanirajak having such a massive infrastructure deficit, these infrastructure investments that the approval of Baffinland's Phase 2 proposal would bring are badly needed.⁹⁹

174. Baffinland is also grateful to have been in a position to provide significant support to Sanirajak to date:

Since 2015, Baffinland has spent \$11,562,804 on wages to Sanirajak residents with as much as \$2.75 million in a single year and the total value of contracts awarded to Sanirajak businesses since 2018 totalling \$42,935,369. They also have provided \$124,500 to the local co-op under the charter flight contract and \$57,000 in office rental to the Hamlet. They have spent over \$156,260 on the Sponsorship/Donations Program providing support for various community needs such as an elder gathering in 2019, COVID-19 food relief and fishing derbies. They also supplied lots of cleaning supplies to residents during the COVID-19 pandemic and they regularly have provided support for such things as Christmas food hampers and flying hockey teams to tournaments as well. Clearly Baffinland Iron Ore Mines has demonstrated that they are an extremely good corporate citizen by providing support to communities in many ways.¹⁰⁰

175. Baffinland also appreciates the support expressed for the adaptive management process, and reiterates its commitment to this approach:

Baffinland has committed to the establishment of an adaptive management process where Inuit are the ones that will have decision making control rather than the company. One would expect that such an adaptive management system in the control of Inuit would help ensure that adverse environmental effects will be mitigated to the extent possible. One of the elders on the Council indicated that many of his own grandchildren do not eat much country food at all any more and that most of what they eat is bought from the store. Additionally, he indicated that there are very few people today that are full time hunters and that most people today on wage employment to survive. He stated that these were some of the reasons that he supports Baffinland's Phase 2 proposal.¹⁰¹

⁹⁹ Hamlet of Sanirajak, Final Written Statement, December 20, 2021

¹⁰⁰ Hamlet of Sanirajak, Final Written Statement, December 20, 2021

¹⁰¹ Hamlet of Sanirajak, Final Written Statement, January 10, 2022

2.8.8 Hamlet of Clyde River

176. Baffinland thanks the Hamlet of Clyde River for its participation and sharing its views on Phase 2. Baffinland also wishes to thank the Kangiqtugaapik (Clyde River) Co-operative Ltd for the letter of support provided to NIRB in December 2021.
177. Baffinland notes that Clyde River explicitly noted that it based its own position on Phase 2 in part on their understanding that the Hamlet of Pond Inlet did not support the expansion. Per the update provided in the Hamlet of Pond Inlet's Statement above, the Hamlet of Pond Inlet supports Phase 2 and the ICA.
178. In its Statement, the Hamlet of Clyde River mischaracterizes the federal and territorial government's position on the Project. Respectfully, Baffinland reviewed the Government of Nunavut as well as all Government of Canada Final Written Statements and there was no submission from government which stated that they disagreed with Baffinland's conclusion that the Project will have no significant effects. Baffinland directs the Board to the Disposition Table which is clear evidence that all technical issues raised by these parties were resolved (but for a single issue relating to distillate fuel commitments).
179. Furthermore, Clyde River's reference to the *Taseko Mines Ltd. v Canada*, 2017 FC 1099, para 124 is not applicable to Phase 2. In *Taseko* it was determined that the proponent had presented almost no detail at all on potential mitigations. In stark contrast to the *Taseko* case, Baffinland has identified an extensive suite of environmental mitigations to minimize or eliminate potential effects associated with the Proposal. These mitigations build off existing best practices and EMP that are already in place to support current operations. These mitigations have been integrated into the effects assessment and were critical in determining that Phase 2 would not result in any significant adverse impacts on the biophysical environment. The additional mitigations that have been developed and committed to since the FEIS Addendum only strengthens the initial determinations of "no significance". Extending beyond that, a comprehensive adaptive management approach that has been presented by Baffinland, including a detailed draft Adaptive Management Plan that is on the NIRB record and a detailed and comprehensive plan to achieve a final Adaptive Management Plan that is set out in the ICA and the Commitment List. This is all required to be in place before Phase 2 operations. Baffinland is committed to implementation of the Adaptive Management Plan, and the binding legal obligations under the Project Certificate and ICA should give all parties additional confidence that the Adaptive Management Plan will be followed.
180. Baffinland encourages Clyde River to give full consideration to all of Baffinland's key commitments, such as Baffinland's commitment to the gradual ramp up of shipping, which will provide the opportunity for further monitoring and mitigation measures and adjustments should the triggers and thresholds enshrined in the Adaptive Management Plan be exceeded. With respect to the concerns expressed regarding the capacity of Inuit to participate meaningfully in the Project should it be approved, the ICA also includes capacity funding to support the Inuit Committees and development of key plans including the Adaptive Management Plan.

181. Clyde River offers opinions on the functionality of environmental working groups for the Project established under the Project Certificate. Baffinland notes this opinion is not formed by first-hand experience – the Hamlet is not a member of either the MEWG or the TEWG. Regardless, Baffinland has provided a more detailed separate submission on this topic under the heading “Working Groups” in this Final Written Statement.
182. It is surprising to Baffinland that Clyde River’s submission suggests that the 325 (as of the November 2021 public hearing) Inuit Mary River employees is not evidence of current employment of “large numbers of Inuit.” The Board also heard evidence that in 2019 (pre-covid) at least 400 Inuit were employed by Baffinland. Conservative assumptions are commonly used in labour force planning in environmental assessments. The assessment conducted for Phase 2 showed that the overall workforce will remain at a similar capacity to what currently exists. Additionally, the labour force assessment was conservative, in that it does not account for the opportunities to train Inuit and bring them into the workforce that have been typically or previously held by Southern employees.¹⁰² It can also be assumed that new and diverse positions, exemplified in the commitment to create additional in-community employment such as the new IQ Advisor positions, will increase as Baffinland’s needs and relationships with the Impacted Communities grow. There is no basis to support a view that Phase 2 will result in a loss to Inuit jobs. On the contrary, Baffinland has confirmed multiple times that no Inuit will lose their jobs as a result of the transition to Phase 2.
183. Further, Baffinland notes the view of the Kangiqtugaapik Co-op which has recognized that without Baffinland’s contribution, Clyde River could not develop a Co-op store, and that without Baffinland’s contribution to the Impacted Communities, there would be a loss of jobs, no infrastructure built, and a loss of income to all contractors.¹⁰³
184. Clyde River has indicated that they would like to see more details on Baffinland and QIA’s plans to address barriers to employment for Inuit. Baffinland is pleased to provide this information (which is also part of the NIRB Record).
- With the commitments made during the Phase 2 review process, not only will new employment and training opportunities be created under Phase 2, but the stability it brings to Baffinland will also support a strong and stable workforce. One that is capable of building career paths that will help guide Inuit who enter the workforce and wish to build their career into more senior or diverse positions.
 - With a continued productive partnership with QIA, a new Inuit Career Mobility Strategy will be implemented that sees a continued focus on Advanced Skills Training and Management Training. This will see an increased opportunity for Inuit to pursue more senior roles at the mine as well as to

¹⁰² Baffinland Final Written Submissions, Appendix 13 Updated Labour Market Analysis, NIRB Registry No. 321614; TSD 25 – Socio-Economic Assessment.

¹⁰³ Letter from Billy Palluq, Kangiqtugaapik Co-operative Limited to Cassel Kapolak, Nunavut Impact Review Board dated December 13, 2021, filed with the NIRB December 13, 2021.

develop into the future leaders of the Mary River project. Encouragement and support to undertake training through either short term or long term post-secondary education will be provided in addition to financial support and assistance. Opportunities to job shadow to explore new career opportunities will be provided and a Baffinland Mentorship program will be put in place to provide a longer term supportive environment which encourages Inuit to grow and develop.

- Additionally, Baffinland will create priority access of local Inuit firms through the development of a Preferred Inuit Firms list, wholly-owned Inuit Firms located in the Qikiqtani Region. As required by the ICA, Baffinland and QIA will set minimum Preferred Inuit Firm contracting goals which Baffinland is then required to meet or exceed.
- Inuit Content Requirements will be required with all contractors which will further increase Inuit employment, training, and subcontracting opportunities through Baffinland's contracts with Inuit and non-Inuit Firms. Inuit Firm assistance and capacity development will be provided including 'tailoring' of large contracts to promote Preferred Inuit Firm participation in contracts through subcontracting to major contractors. Inuit employees and communities participating in the Phase 2 process have shared their views on the topic of existing and future well-being with the Board:

*"When I was with the, the geotech team, they actually wanted to send me to university to study geology. Education wise, well, I have heavy machinery now. You know, it's a ticket, you know, some companies will train you. And then your ticket is only valid with that company. Whereas Baffinland has just openly sent me. Well when I was there, I think we were a class of six. You know, they, they sent us down south, trained us, gave us the training to be a heavy machinery operator, and then we can do whatever we want with that ticket, you know, whether it was, of course, they want us to work for Baffinland. But it's valid anywhere, you know, training. Education."*¹⁰⁴

*"I believe that if Phase 2 is approved, it will mean that I will get to keep my job at the mine as a millwright apprentice, there will be more jobs available for Inuit, and more training opportunities will open up. This will all help in bringing more pride and joy to our work. I believe the Phase 2 railway will be better for the environment and ecosystem. I made these comments in the videos."*¹⁰⁵

185. Baffinland also notes that the Hamlet has referred to external evidence in its Final Written Statement that is not part of the NIRB record relating to the research station and so NIRB must disregard that reference. In any event Baffinland stands by its commitment to contribute funding to the Laval Research Station should Phase 2 proceed and clarified this on the record during the November 2021 public hearing.

¹⁰⁴ Bernard Choquette (Iqaluit) Our Inuit Voices Matter, Transcript

¹⁰⁵ Timosie Arnaqjuaq Comment Form 11/09/21

2.8.9 Igloolik Working Group

186. With respect to the Igloolik Working Group Final Written Statement, Baffinland notes that the Igloolik Working Group has based its position in part on their understanding as of January 10, 2022 that the Hamlet of Pond Inlet did not support the expansion. Per the Hamlet of Pond Inlet's submission summarized above, the Hamlet of Pond Inlet supports Phase 2 and the ICA. Baffinland encourages the Igloolik Working Group to give consideration to all of the commitments in the Commitment List, as attached to this Final Written Statement, as it represents further substantial commitments that have improved the Phase 2 Proposal since November 2021.
187. Baffinland also wishes to emphasize that while it is fully committed to the mitigations it has presented to the NIRB, the Igloolik Working Group is not being asked to support the Phase 2 Proposal on trust alone. QIA has confirmed it will meet its obligations under the ICA which includes a direct community benefits program, should Phase 2 be approved and these commitments will be backed up by a legally binding Project Certificate. As was expressed in the Hearing, the ICA also creatively addresses community concerns respecting benefits:

There's a lot of things we haven't discussed, including penalties, and I can assure you I know the Qikiqtani Inuit Association may have received some criticism about how the Inuit Certainty Agreement was negotiated or how it wasn't, but I could tell you in terms of the penalties and the assurances that they feel they needed to put in place, they're strong. And any time Baffinland doesn't live up to its obligations, we have to pay the communities through the direct benefits policy. So if we don't live up to our employment obligations, we have to pay this fund, and it hasn't all been worked out yet, but it's in the Inuit Certainty Agreement that that's where it goes. When we don't live up to our obligations, that goes to the communities.¹⁰⁶

188. Baffinland appreciates the recognition by the Igloolik Working Group that it has made substantial changes to the Phase 2 Proposal and its assessment. Should Phase 2 be approved Baffinland will continue to engage and respond to the communities through direct, meaningful and productive relationship.

2.8.10 MHTO

2.8.10.1 Capacity of MHTO to Participate in Assessment

189. Baffinland appreciates the participation of the MHTO in the reconsideration of the Phase 2 Proposal.
190. The MHTO is an organization established under the Nunavut Agreement to regulate hunting among its members and receives operational funding for these purposes from the federal government. It received more participant funding from the federal government than every other participant in this assessment. Baffinland has also extended support to the MHTO including funding to increase their capacity and acknowledge their active participation in the current operation as well as the Phase 2 review.

¹⁰⁶ Transcript Vol. 19, 3425

191. MHTO was supported throughout the NIRB public hearing process by experienced external professional advisors, including the former Technical Director of NIRB who was a NIRB staff member during the 2012 assessment resulting in approval of the Mary River Project, scientific advisors and a large legal team, and as such any suggestion MHTO as an organization was not able to access or understand information provided to NIRB is not credible.

2.8.10.2 Consultation and Engagement with MHTO

192. Baffinland has consulted with the MHTO throughout project operations, planning and review, and has given careful consideration to their concerns and the information and IQ that they have provided. Baffinland has undertaken extensive and detailed assessments on the potential effects to marine mammals and to caribou, and has adopted and committed to numerous measures to avoid or mitigate impacts. IQ was incorporated into the Baffinland process of project design, operation, and monitoring, and into developing measures to avoid or mitigate impacts on marine mammals and on harvesting. Baffinland also made clear on many occasions that it is always open to meet directly with the MHTO and its advisors to answer any questions and to work together to try to address concerns. These invitations are described in the community engagement updates listed in the Community Consultation section of this Final Written Statement. Unfortunately, this includes requests to meet that went unanswered. Baffinland continues to extend this open invitation to meet with the MHTO.

2.8.10.3 Incorporation of IQ in Assessment

193. As Baffinland has emphasized, we appreciate the IQ shared with us on the importance of wildlife and of harvesting to Inuit. IQ has provided Baffinland with knowledge and information on wildlife abundance and life cycles, populations, including natural fluctuations, important habitat areas and seasonal activities, the location and timing of harvesting, and the needs of harvesters. All of this knowledge and information has been incorporated into each aspect of the Project, from design, through operations, monitoring and adaptive management.
194. In general response to the MHTO Final Written Submission, Baffinland emphasizes the following points:
- Both science and IQ provided foundations of knowledge and information in all of our assessments, plans and commitments. There is no part of any IQ referred to in the MHTO Final Written Submission that has not been given careful consideration. As stated in the Executive Summary, there are many examples where Baffinland has made specific decisions based on Inuit feedback and IQ and made changes to the way the Project currently operates:
 - In 2016, winter shipping (shipping through landfast ice) and shipping outside the period from July 1 – Nov. 15 was removed during the Nunavut Planning Commission process;
 - In 2017, winter shipping was removed from the Phase 2 Proposal and the number of ships was restricted at anchor to reduce disturbance to marine wildlife and marine harvesters;
 - In 2019, the number of vessel transits were reduced through ice break up after Pond Inlet residents notified Baffinland that narwhal had not come into Eclipse Sound and Milne Inlet in 2018;

- In 2019, a portion of the rail route was changed to preserve a trail between Pond Inlet and Igloolik based on feedback from Inuit who directly use this route;
 - In 2020, a spray that acts like a cover on the stockpiles at Milne Port to prevent dust from spreading began to be used;
 - In 2021, shipping through ice in the Spring was suspended as a response to reduced narwhal numbers observed in 2020 and uncertainty regarding the presence of new sound exposures (impulsive vs. continuous) coming from the small craft harbour construction in Pond Inlet; and
 - As part of Phase 2 and referenced above, the maximum number of ore carriers proposed for Phase 2 has been reduced from 176 to 168; Baffinland has also committed to increase shipping gradually, and we are actively continuing to address the current dust and designed Phase 2 in a way that has put dust reduction front and centre.
195. Baffinland and its third party experts incorporated IQ along with the best available western science in the FEIS Addendum as well as in Baffinland's subsequent submissions to NIRB, in the current and proposed monitoring programs and in the development of Phase 2 mitigations and design^{107, 108, 109, 110}. Phil Rouget, Golder Associates, gave specific and detailed examples during the public hearings as to how IQ was incorporated in his assessment of marine mammals. Melanie Austin, Jasco, also gave details about how she integrated IQ and scientific knowledge in her assessment of underwater noise, after an Elder generously shared his own IQ with NIRB and hearing participants in November 2021. Michael Setterington, EDI Dynamics, gave detailed and repeated examples during the public hearing of his respect for the IQ shared with him and how this information was incorporated throughout his assessment of terrestrial wildlife, including caribou, and the development of culturally sensitive mitigations.

¹⁰⁷ Inuit Qaujimajatuqangit (IQ) and the Mary River Project Phase 2 Proposal, NIRB Registry No. 323799-323805

¹⁰⁸ TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559

¹⁰⁸ Community Risk Assessment Workshop, NIRB Registry No. 327139-327149

¹⁰⁸ Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530

196. Further commitments to incorporate IQ in project monitoring, assessment and adaptive management are included in the IIBA and as suggested by Baffinland and QIA can also be incorporated in the Project Certificate for Phase 2. In addition to the Inuit Committees and direct independent Inuit-led monitoring agreed under the ICA, Baffinland will appoint an Inuit Qaujimajatuqangit advisor in each community so that we can hear and respond to concerns that may be raised related to the project on a more local and on-going basis. These advisors will be another direct link between communities and Baffinland to ensure IQ is properly understood and verified, and that Baffinland's incorporation of it in the Project is done correctly.
197. Baffinland has also made an important commitment to finalize the IQ Management Framework (currently in draft) with the help of Impacted Communities. This Plan will outline the overall relationship between IQ and Baffinland's overall Environmental Management System, including our guiding principles, available IQ sources and bodies, relationship to the QIA's Inuit Stewardship Plan, the schedule and timing of IQ collection and reporting, and IQ's role in adaptive management.
198. All of its current and new Phase 2 commitments will ensure that Baffinland will continue to undertake an active and ongoing approach to consultation and engagement on the Mary River and Phase 2 Project with the QIA and with communities and stakeholders to incorporate their IQ and other feedback in the Project.

2.8.10.4 Protection of Caribou and Marine Mammals

199. Taking into account the measures we have proposed to avoid or mitigate impacts on marine mammals and caribou, outlined in the FEIS Addendum, the ICA, and other commitments, the Project will not have a significant impact on marine mammals or caribou.
200. The mitigation measures to protect caribou and marine mammals are summarized in more detail in this Final Written Submission (Section 5.7 and 5.9), but include (with references to Commitment ID Nos. in attached Commitment List, where applicable):
- Reduced the number of ore carriers to be used to no more than 168 ore carriers per year (down from the originally proposed maximum of 176) (see Commitment ID No. 241);
 - Commitment to gradually increase the number of ore carriers used over a period of several years starting the year after approval, if approved (see Commitment ID No. 242);
 - Removal of the requirement for winter shipping to avoid time periods of critical Inuit land use and harvesting activities and to avoid breaking of landfast ice – resulting in a reduction in the shipping season from the original proposed 10 months per year to approximately 4 months (see Commitment ID No. 239);
 - Establishment of restricted areas where vessels cannot travel along the shipping route (e.g., Koluktoo Bay);

- Commitment to not commence shipping until landfast ice has broken along the entire shipping corridor and the floe edge near Pond Inlet has been closed for hunting due to safety concerns (see Commitment ID No. 215);
 - Switch from outdoor secondary crushing at the Mine Site to indoor secondary crushing at Milne Port to reduce dust emissions from this key source;
 - Switch from ore haulage by truck to rail, significantly reducing wildlife disturbance and dust generation along the Northern Transportation Corridor, as well as greenhouse gas emissions due to fuel efficiencies in transport by rail;
 - Movement of proposed rail alignment along the deviation area at the km 67 hill from Route 1 to Route 3 to avoid an identified traditional travel route between Igloolik and Pond Inlet (see Commitment ID No. 129);
 - Establishment of Special Protection Areas along the railway where additional wildlife crossings (1:3 slope embankments) may be installed; in these areas speeds may also be reduced generally or during certain times of the year, and additional wildlife surveillance monitoring may occur (see Commitment No. 67);
 - General modifications to railway design to make embankments smoother using smaller fill material (Type 12 to Type 8) and gentler by decreasing the slopes over large areas to what was proposed for the South Railway for caribou crossings only (1:1.5 to 1:2) (see Commitment No. 67).
201. Respecting concerns relating to seals, these concerns were addressed in detail in Baffinland's Written Comments of September 2021, Part VI – Seal Breathing Holes and Part XII – Ringed Seals.¹¹¹
202. Those issues are addressed in more detail under the section on Marine Mammals, but the following paragraphs from the Written Comments are particularly relevant:

“138. The mitigation measures in place for ringed seal have been carefully developed to completely avoid shipping impacts on ringed seal during periods when they are ‘grouped up’ (i.e., the winter and spring) when group behaviour is critical to reproductive activities such as mating. In addition to the mitigations described at the January-February hearing, Baffinland has recently added a new mitigation commitment, in that icebreaking will not begin before July 15, which also helps to protect seals during the moulting period, and will not run later than October 31, which also aims to avoid impacts on seals at a time when they start maintaining breathing holes during initial ice freeze-up.

139. The impact of icebreaking on ringed seal during the fall will be limited to the narrow swath of the icebreaker route, which represents 0.33% of available sea ice habitat in the RSA, plus the associated acoustic disturbance zone on either side of the corridor. Animals maintaining breathing holes in late October along the ship track might experience localized disturbance

¹¹¹ NIRB Registry No. 336778

effects and may elect to move away from the shipping lane to pursue these activities. The impact is expected to be temporary and intermittent in nature (on the scale of several weeks with limited number of daily transits), and not likely to result in any large-scale displacement within the RSA. No impacts on the reproduction or survival of ringed seal are anticipated to occur from either shipping or icebreaking.

140. Baffinland acknowledges feedback from Inuit hunters indicating they are observing local changes in seal abundance and distribution in the RSA, with carry-over effects on seal harvesting. In response to this feedback, Baffinland has recently committed to undertaking targeted ringed seal monitoring along the Northern Shipping Route starting in 2021. This monitoring program will incorporate IQ and Inuit perspectives into the design, planning and implementation of this monitoring program. This will include dedicated ringed seal aerial surveys to monitor for potential shipping-induced changes in ringed seal distribution and relative abundance (i.e., density and seal hot spots) in the RSA. The 2021 survey results will be compared to ringed seal baseline aerial surveys undertaken by Baffinland in the RSA in 2006, 2007, 2008 and 2014, as well as to surveys undertaken by DFO in 2016 and 2017 (Yurkowski et al. 2019). This monitoring will address any residual uncertainty with the impact predictions related to shipping and ringed seal. Tracking ringed seal numbers in the RSA has also been identified as a long-term indicator for this species as part of the OITR developed for the Phase 2 proposal.”¹¹²

2.8.10.5 Robust Mitigation and Inuit-led Monitoring

203. In addition to Project design mitigations, Baffinland has agreed and committed to a wide range of management practices relating to operations, monitoring, ongoing assessment of potential effects, and adaptive management to avoid and mitigate potential adverse environmental and socio-economic effects. If Phase 2 is approved, the Commitment List will be attached as an Appendix to amended Project Certificate No. 005, and NIRB can recommend Terms and Conditions to the Minister based on these items as they see fit in accordance with the jurisdiction granted under NuPPAA.
204. Additionally, (and as Baffinland and QIA both suggest should also be incorporated as Project Certificate Terms and Conditions if Phase 2 is approved to proceed) Baffinland has agreed to processes and frameworks with the QIA for the establishment of an Inuit Stewardship Plan that will be guided by two Inuit Committees that will conduct independent Inuit-led monitoring of the Project for the purpose of mitigating adverse impacts and enhancing beneficial outcomes. The Inuit Stewardship Plan will be funded by Baffinland and led by Inuit from the Impacted Communities, and will help directly shape the Adaptive Management Plan.

¹¹² NIRB Registry No. 336778

205. Additional commitments made through the Phase 2 reconsideration process, specifically the commitment to develop Inuit objectives, indicators, thresholds and responses (OITRS) for the Phase 2 Project, will ensure that community and cultural values and priorities drive the development and management of the Mary River Project. At the QIA's request, this work will be driven by QIA on behalf of Qikiqtani Inuit. The additional commitments made by Baffinland through the NIRB process and agreed between QIA and Baffinland will ensure Inuit knowledge will be at the forefront of Baffinland's approach to monitoring and mitigating Project effects.
206. In addition, the ICA confirms Inuit independent monitoring of Project effects (including potential effects on harvesting) and Inuit participation in developing additional measures of protection under the Adaptive Management Plan. Baffinland has predicted no significant effects with committed measures to avoid or mitigate impacts, but has also agreed to adopt additional measures if necessary, on an ongoing basis.

2.8.10.6 Support to Harvesters

207. Baffinland has committed to measures to support harvesting, including:
- A one-time payment of \$1.3 million to the MHTO for changes in hunting experience that Inuit from Pond Inlet have described and to address difficulties in accessing the Wildlife Compensation Fund;
 - Funding for the purchase of a dedicated hunting vessel for Pond Inlet, not to exceed \$500k;
 - An annual payment for the Regional Harvesters' Enabling Program of \$750,000. This fund would be administered by QIA with funds potentially going towards initiatives that increase the effectiveness of harvesting or offset the cost of harvesting, such as equipment, supplies that support harvesters, or new technologies that support harvester success. This is in addition to the continuation of the existing \$750,000 Wildlife Compensation Fund;
 - The existing Harvesters' Enabling Program for Pond Inlet will be expanded to include the communities of Igloolik, Sanirajak, Kimmirut and Kinngait, which would each receive the provision of 300L of gas, to a total value of \$400,000 annually (in 2018 dollars), indexed to inflation, when Steensby is developed;
 - An annual payment of up to \$3.68 million per year to the Pond Inlet Tasiuqtiit Working Group to help support community wellness initiatives as decided by the Hamlet and the MHTO. Specifically, this includes:
 - An annual payment to the Pond Inlet Tasiuqtiit Working Group for each ore carrier that travels by their community, which could amount to \$1,680,000 per year at full Phase 2 operations (168 vessels @ \$10,000/vessel). This working group has already received \$590,000 to date with an additional \$190,000 coming for the 2021 season;
 - An annual payment to the Tasiuqtiit Working Group, or other group as determined by the Hamlet of Pond Inlet, for each individual loaded ore car delivered to Milne Port, valued at up to \$2 million per year (120,000 loaded ore cars @ \$16.67/car). This is in addition to the funds provided for ore carriers transporting ore through the Northern Shipping Corridor referenced in the previous bullet.

208. In addition, Baffinland meets regularly with the MHTO and has offered to provide additional administrative support to enhance their functioning and to recognize their on-going involvement in the project which has included funding additional training support and administrative positions in the MHTO.

2.8.10.7 Narwhal Harvesting Statistics

209. The reference at paragraph 122 of the MHTO Final Written Statement, that narwhal harvesting numbers have declined, is incorrect, and not consistent with the harvesting data.
210. Harvesting records up to 2021 indicate that harvesters, such as the MHTO, have been successful in harvesting narwhal since shipping began in Eclipse Sound. See the harvesting records shown on Slide 55 of the Baffinland hearing presentation on marine mammals¹¹³ and the summary in the marine mammal section of this Final Written Submission. These numbers indicate relatively higher levels of harvesting success during current project operations.
211. The Government of Nunavut confirmed at the public hearing in November 2021 that for the 2021/22 harvesting years, the entire quota of 137 narwhal were successfully harvested. See also GN Final Written Statement, January 10, 2022:

During the Community Roundtable of the week of November 1, 2021 the topic of narwhal harvesting and tags arose.

Narwhal management ultimately is the responsibility of the Fisheries and Oceans Canada (DFO). DFO decides the allocated quotas per community and provides the tags to the local HTO who distribute them to hunters. The GN and DFO maintain a memorandum of understanding that covers enforcement, some program delivery, and harvest recording. Should a hunt be successful, and a tusk be procured, the hunter brings it to the GN wildlife office where a conservation officer will affix a metal cable tag to the tusk allowing for sale and export.

There are three distinct seasons for narwhal harvesting: Spring (April 1 to July 10), Summer (July 11 to October 15) and Fall (October 16 to March 31). During the 2021-2022 harvesting year a total of 152 tags were issued to Pond Inlet (137 for Summer, and 15 for Fall/Spring). The entire summer quota of 137 narwhal were successfully harvested and reported to the GN Wildlife Office.

There have been reports of hunters needing to travel farther and search longer during their narwhal hunts. The catch per unit effort and any potential changes to it over time have not been analyzed by the GN.

212. This also shows that narwhal harvesting has been successful during the ERP, PIP/PIPE shipping operations as indicated by high harvesting success rates in previous years (see Slide 55 of the Baffinland Marine Environment Presentation, January 2021).¹¹⁴

2.8.10.8 Impacts to Harvesting Generally

213. The Board has heard evidence that employment with the Project allows time for harvesting during rotations of two weeks on and two weeks off at the mine, and that income earned at the mine supports the purchase of harvesting equipment such as boats, rifles, ammunition and gear. Many employees at the mine are harvesters as well.¹¹⁵
214. However, Baffinland (and Inuit) will continue to monitor any effects and determine if additional protection measures or harvesting support are necessary.
215. Any impacts of dust on harvesting or use of the land will be reduced by using the railway to haul ore and by other measures to reduce dust from crushing ore as well as through the implementation of recommendations coming from an independent dust audit that incorporates an Inuit committee.¹¹⁶
216. Baffinland has engaged in full consultation on railway alignment and on railway crossings and trail routes, and committed to specific mitigation measures such as gently sloped crossings, monitoring, and operational measures to enhance permeability of the rail for wildlife and to reduce negative interactions with landusers.
217. Baffinland has committed to operational changes to its proposed shipping operations to reduce potential impacts to marine wildlife (such as set-back restrictions, reduced vessel speeds and reduced numbers of ship transits or transit restrictions) and commitments to changes in the shipping route (such areas of no-go and limitations on anchoring) to minimize interactions with landusers.
218. Baffinland has committed to provide the MHTO with a vessel to be used for hunting purposes valued at up to \$500,000¹¹⁷ and will continue to support programs such as the Harvesters Enabling Program.
219. The Phase 2 operation will enhance access to the area but removing ore haul trucks from the Tote Road allowing hunters and land users to have improved access to the road under a program to be developed between land users and Baffinland, as well as continued support from the Project site inclusive of food, shelter and fuel.

¹¹⁴ Marine Environment Presentation, NIRB Registry No. 332553

¹¹⁵ Hearing Transcript, November 2, 2021, 3197

¹¹⁶ See Commitments 230-233, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

¹¹⁷ Commitment 257 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

220. Independent Inuit led monitoring and participation in ongoing assessment and adaptive management measures provide assurances that these measures will be implemented through the Inuit Stewardship Program under the ICA. Both Baffinland and the QIA (in consultation with communities and HTOs) have work to do on an ongoing basis to implement the Adaptive Management Plan. The framework, structures, funding, and objectives (incorporation of IQ, following the Precautionary Principle) are firmly established under the ICA. These commitments are also included in the Commitment List.

2.8.10.9 Conclusion

221. The NIRB process has been procedurally fair to all parties, and the NIRB review has ensured that all parties have been provided with full information, with support and opportunities to review information and make their own submissions. The NIRB review and recommendation can be relied upon by the Government of Canada as a strong foundation and component of consultation and consideration of accommodation measures.
222. If the Project is approved, Baffinland has committed to funding of Inuit monitoring of environmental and socio-economic effects, including harvesting. Baffinland is confident that the measures that will be taken to avoid or mitigate impacts will ensure the protection of harvesting, and will provide support for harvesters to continue to be successful.
223. A detailed summary of Baffinland's assessment of harvesting and food security issues is found below under the heading of Culture, Resources and Land Use. The initiatives and measures committed to by Baffinland for harvesting and food security are summarized in detail in Baffinland's Written Comments of September 10, 2021 under Section IX – Food Security.
224. The following paragraphs from Section IX of the Written Comments are particularly relevant:

"Enhancing Inuit Access to Wildlife Stocks

120. Ensuring Inuit are able to access wildlife stocks for harvesting is as essential as ensuring the Project does not have significant effects on those wildlife stocks that affects their availability. Baffinland has committed to mitigations which support hunter access to the Project area specifically and the land and waters around Pond Inlet generally. Relevant Phase 2 commitments include:

(a) Enhanced Community access to Tote Road under Phase 2 (see Commitment No. 42)

(b) Additional hunter cabins along Tote Road, plus monitoring stations that will also serve as emergency shelters for hunters when needed (see Commitment No. 238)

(c) Provision of fuel, food and other supplies for Inuit at Mary River (existing Project requirement under Mary River IIBA 13.3.1 and 13.3)

(d) Designated hunter crossings across railway (see Commitment No. 61, 163)"

"Supporting Traditional Land Use

123. Baffinland has listened to Inuit who have told us that the value in harvesting country food extends beyond the nutritional value it provides. Harvesting country food is a critical cultural practice and a significant contributor to community and individual well-being. To this end Baffinland proposes for consideration that a portion of the funds received by the Tasiuqtiit Working Group (up to \$1.68 million/year) could support Pond Inlet specific harvesting programs aimed at supporting the preservation of traditional knowledge, including:

(a) Support for traditional hunting camps for youth

(b) Support for adoption of traditional hunting techniques and equipment (harpoon guns)

(c) Other initiatives as determined by the Tasiuqtiit Working Group

124. Baffinland is confident that the Phase 2 Proposal, with the implementation of the comprehensive mitigations and monitoring plans that have been presented to NIRB, will avoid affecting the availability of, and access to, wildlife for harvesting. If wildlife stocks do decline (narwhal, seal), or do not return (caribou), affecting country food availability, Baffinland is committed to work with Inuit to understand the impact by either modifying the project or providing additional supports to overcome barriers preventing country food harvests. This is reflected in Baffinland's commitments to NIRB (see for example Commitment No. 133, 134, 135, 136, 138, 159, 167, 198, 218, 225 and as part of its agreement with QIA under the ICA (see generally ID 2, ICA)."

225. The members of the MHTO and other harvesters have been successful in harvesting narwhal and seals over the last six years of shipping operations. Through its mitigation measures and support for harvesters, and through the Adaptive Management Plan and ICA structures, Baffinland has demonstrated its commitment that the Project will continue to operate in a manner that considers IQ and community input, and does not have significant impacts on wildlife or Inuit harvesting.

2.8.10.10 Amaruq Hunters and Trappers Association

226. Baffinland acknowledges the contribution of the Amaruq Hunters and Trappers Association to this assessment and for its sharing of IQ in its Final Written Statement. As a general response to its Final Written Statement, Baffinland refers the organization to its response to the MHTO above.

2.8.10.11 Sanirajak Hunters and Trappers Association

227. Baffinland thanks the Sanirajak Hunters and Trappers Association for their efforts in this assessment. As a general response to its Final Written Statement, Baffinland refers the organization to its response to the MHTO above.

2.8.10.12 Ikajutit Hunters and Trappers Association

228. Baffinland appreciates the opportunity to learn from the Ikajutit Hunters and Trappers Association. As a general response to its Final Written Statement, Baffinland refers the organization to its response to the MHTO above.

229. In its Statement, the Ikajutit HTA has emphasized a request for time and resources to measure data on issues they see as critical to wildlife, health, dust and marine environment monitoring. That is exactly what Baffinland has committed to in this process through the funding of Inuit led monitoring through the Inuit Committees and Inuit Stewardship Plan. Baffinland also confirms that the inclusion and adoption of IQ as the foundation for this monitoring will be adopted (as suggested in the organization's Final Written Statement). Baffinland has also committed to a gradual ramp up of shipping for the Phase 2 Proposal, which could help address the Ikajutit HTA request for time.
230. In its submission, the Ikajutit HTA has asked several questions which Baffinland can answer here, based on evidence provided during the NIRB proceedings:
- How many Inuit are employed? Answer: At the time of the November 2021 public hearing, 325 Inuit were employed at Mary River by Baffinland and Baffinland contractors.
 - From which communities? Answer: Pond Inlet, Arctic Bay, Sanirajak, Clyde River, Igloolik, Kinngait/Cape Dorset, Grise Fiord, Iqaluit.
 - What businesses are utilized? Answer: Baffinland has contracted over \$1 billion with Inuit firms registered under the NTI Inuit Firm Registry, which provided services ranging from (in order of dollars spent) civil works, mobile equipment/maintenance, charter air services, catering, infrastructure construction, sealift, professional services, environmental services.
 - What businesses have been created? Answer: The creation of businesses is supported by the \$275,000 Business Capacity Startup Fund under the IIBA.
 - What training and development plans are available? Answer: With a continued productive partnership with QIA, a new Inuit Career Mobility Strategy will be implemented that sees a continued focus on Advanced Skills Training and Management Training. This will see an increased opportunity for Inuit to pursue more senior roles at the mine as well as to develop into the future leaders of the Mary River project. Encouragement and support to undertake training through either short term or long term post-secondary education will be provided in addition to financial support and assistance. Opportunities to job shadow to explore new career opportunities will be provided and a Baffinland Mentorship program will be put in place to provide a longer-term supportive environment which encourages Inuit to grow and develop.
231. A new commitment based on a Phase 2 approval would see new Baffinland offices built in each of the Impacted Communities. In addition to offices and working spaces, these new office centres would also include a 20 seat training room which would allow Baffinland to deliver further on a new commitment to hire 40 Inuit from each impacted community over the first three years following Phase 2 approval. These new hires would undertake in community training for up to six months after hire that in addition to foundational training would also provide Pre-employment training that provides the knowledge and education to enter a career in a variety of fields and in a variety of skill classifications.

2.8.11 Government Participants

2.8.11.1 Government of Nunavut (GN)

232. While the federal government currently has authority over the management of mineral resources in Nunavut, the GN has significant jurisdictional responsibility and permitting authority over activities that affect wildlife and wildlife habitat, Commissioner's lands, municipalities, education, health, social services, public safety, culture, community development, property rights, and the administration of the laws in Nunavut. It is the GN's objective to ensure that mineral resource projects in Nunavut are developed in a manner that respects, protects and cares for the land, animals and the environment. At the same time the GN is responsible to ensure that the Mary River Project will create positive effects on the socio-economic conditions of the territory by providing opportunities for employment, education and training to Nunavummiut.
233. As confirmed in its Final Written Statement, during the Phase 2 process, the GN brought forward 86 information requests, 30 technical review comments and 9 comments in its final written submission. Baffinland appreciates GN's confirmation that, "Ultimately, BIMC addressed GN's concerns around habitat loss by committing to update their Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) to reflect that BIMC will, at least every 5 years, undertake research to estimate the zone of influence and disturbance coefficients exerted by the Project's operations on caribou." ¹¹⁸
234. Baffinland also respects that through Sections 5.1.2 and 5.2.33 of the Nunavut Agreement GN has a legal, constitutional obligation to research and monitor caribou on a regional scale separate and apart from Baffinland's responsibility to monitor for effects from its operations. We reiterate our commitment to collaborating with GN on addressing uncertainties and gaps between our respective monitoring mandates.
235. Baffinland also agrees with GN's conclusion that "The GN also finds it reasonable that dust generation will be significantly reduced with the use of a train, under the Expansion, to transport ore versus use of haul trucks as the current practice."¹¹⁹
236. Baffinland acknowledges the summary provided by GN on the topic of narwhal harvesting and tags:

During the Community Roundtable of the week of November 1, 2021 the topic of narwhal harvesting and tags arose.

Narwhal management ultimately is the responsibility of the Fisheries and Oceans Canada (DFO). DFO decides the allocated quotas per community and provides the tags to the local HTO who distribute them to hunters. The GN and DFO maintain a memorandum of understanding that covers enforcement, some program delivery, and harvest recording. Should a hunt be successful,

¹¹⁸ Final Written Statement, Government of Nunavut

¹¹⁹ Final Written Statement, Government of Nunavut

and a tusk be procured, the hunter brings it to the GN wildlife office where a conservation officer will affix a metal cable tag to the tusk allowing for sale and export.

There are three distinct seasons for narwhal harvesting: Spring (April 1 to July 10), Summer (July 11 to October 15) and Fall (October 16 to March 31). During the 2021-2022 harvesting year a total of 152 tags were issued to Pond Inlet (137 for Summer, and 15 for Fall/Spring). The entire summer quota of 137 narwhal were successfully harvested and reported to the GN Wildlife Office.

There have been reports of hunters needing to travel farther and search longer during their narwhal hunts. The catch per unit effort and any potential changes to it over time have not been analyzed by the GN.

237. This shows that harvesting has been successful during the ERP shipping operations as indicated by high harvesting success rates in previous years (see Slide 55 of the Baffinland Marine Environment Presentation, January 2021).
238. Baffinland also acknowledges the reference of the GN to the importance of the Working Groups and suggestions to improve their operation.
239. Baffinland is pleased that it was able to resolve all issues with GN and GN was able to confirm to NIRB in its Final Written Statement that it does not have any remaining concerns with BIMC's Phase 2 Project Proposal.

2.8.11.2 Government of Canada – Crown Indigenous Relations and Northern Affairs Canada (CIRNAC)

240. CIRNAC is the federal government department responsible for meeting the Government's obligations and commitments to First Nations, Inuit and Métis, and for fulfilling the federal government's constitutional responsibilities in the North.
241. Baffinland appreciated the opportunity to work closely with CIRNAC on its areas of expertise in this assessment, including:
- Crown land contamination/degradation, particularly closure and reclamation planning;
 - Surface water quality and quantity;
 - Groundwater quality and quantity;
 - Marine water quality, as affected from land-based activities;
 - Permafrost;
 - Waste management; and
 - Socio-economic impact assessment and monitoring.

242. Baffinland also appreciates CIRNAC's confirmation that they have resolved all 16 of their concerns about the Project's potential impacts on the biophysical environment and socio-economic matters that remained after they participated in the information request process. As noted, 12 of these were resolved with no further steps required and the remaining 4 were resolved with commitments from Baffinland, as set out in the Disposition Table and Commitment List.
243. At the end of the process, CIRNAC has concluded that, "Based on the information made available for review throughout the assessment process, it is unlikely that most aspects of the proposed Project falling within the scope of CIRNAC's areas of expertise will result in significant adverse effects. Potential environmental and socio-economic impacts can be prevented, mitigated and managed through the implementation of agreed upon commitments and Terms and Conditions." [emphasis added].

2.8.11.3 Government of Canada -Environment and Climate Change Canada (ECCC)

244. ECCC is responsible for leading implementation of the Government of Canada's environmental agenda and is committed to contributing to the realization of sustainable development in Canada's North. EC's mandate covers the preservation and enhancement of the quality of the natural environment, including water, air, soil, flora and fauna, as well as species at risk and migratory birds. In addition to EC's mandate to conserve and enhance the quality of the natural environment, the Department administers s. 36(3) of the *Fisheries Act* which prohibits the deposit of a deleterious substance into fish bearing waters. ECCC also administers the permitting of disposal at sea and participates in the regulation of toxic chemicals and the development and implementation of environmental quality guidelines pursuant to the *Canadian Environmental Protection Act, 1999* (CEPA 1999). EC is responsible for protecting and conserving migratory bird populations and individuals, under the *Migratory Birds Convention Act, 1994*, and administers the *Species at Risk Act* in cooperation with Fisheries and Oceans Canada and the Parks Canada Agency.
245. Baffinland appreciates ECCC's confirmation that it was able to resolve every issue raised in the NIRB process with Baffinland other than the item relating to lighter distillate fuel, which Baffinland believes it has presented a reasonable path forward on as follows. Respectfully, ECCC's request is not reasonable and not adequately supported on the basis of the evidence presented to the Board.
246. ECCC has proposed the following term and condition in its Final Written Statement:
- The Proponent shall require ore carrier vessels to use 0.1% Sulphur Marine Gas Oil (MGO; distillate fuel) while they are travelling to or from Milne Port through the geographic area that is described as Shipping Safety Control Zones 9, 10, 13 and 15 in the Shipping Safety Control Zones Order, C.R.C., c. 356 through the Canadian Exclusive Economic Zone (200 nautical miles from shore, inclusive of the Nunavut Settlement Area and Regional Study Area). The Proponent may also use equivalent-performing alternatives to achieve mitigation of atmospheric black carbon emissions. An equivalent-performing alternative is a fuel that reduces black carbon emissions by at least 80% (the mitigation level provided by MGO) compared to emissions from the combustion of heavy fuel oil. Such an alternative fuel must be confirmed to achieve this standard by a*

consensus-based internationally recognized scientific report such as the 4th IMO Greenhouse Gas Study, Arctic Monitoring and Assessment Programme under the Arctic Council, or the United Nations Framework Convention on Climate Change. Reporting Requirements: The Proponent shall provide vessel fuel records (including fuel identification, locations of fuel changes, and quantity consumed) to the Nunavut Impact Review Board as part of their Annual Report, for review.

247. Baffinland does not agree with the incorporation of this term and condition in the Project Certificate, and furthermore does not agree that the Project Certificate should include any specific terms and conditions about fuel used by vessels at all.
248. In Its Commitment List (see Appendix C) Baffinland has already made the following commitment which far exceeds existing regulatory requirements:

235. Should Phase 2 be approved, Baffinland will require directly chartered ore carriers, through its contracts, to use lighter distillate fuels (MGO or equivalent) within the northern marine Regional Study Area, which shares a border with the Nunavut Settlement Area (NSA). Baffinland notes that scrubbers are not required when lighter distillates are used.

249. Per Baffinland's submission to the NIRB of September 10, 2021 (NIRB Registry No. 336778 to 336781), Baffinland strongly opposes ECCC's recommendation, for all of the detailed reasons, including legal arguments, set out in its submission of September 10, 2021.¹²⁰ In summary:
- Baffinland has shown that there is a relatively small improvement in life of mine black carbon emissions between what ECCC is proposing and Baffinland's counter proposal. By having vessels switch to lighter distillates at the border of the marine RSA, which follows the NSA, and the guaranteed implementation of the HFO fuel ban in 2029, the existing Baffinland commitment would result in a 62% reduction in black carbon. Baffinland agrees that an immediate and complete switch over to lighter distillates would reduce emissions further, but the improvement is marginal, (only 19%) and does not merit the risk it presents, which includes not only additional costs, but viability of the project given that it would seriously constrain Baffinland's ability to ship its fully permitted quantities of ore in years that would otherwise be achievable.
 - Baffinland has made a strong commitment that exceeds legal requirements to use LDF within the NSA.
 - The recommendation made by ECCC is not feasible. The constraint could mean that Baffinland is not able to ship the full amount of ore permitted by NIRB.
 - The recommendation made by ECCC is costly, because it will reduce Baffinland's available ships on the market and many ships will not have the ability to carry different fuel types so the entire voyage will require the use of LDF fuel.

¹²⁰ NIRB Registry No. 336778 to 336781

250. The proposal from ECCC is based on the premise that the measure is necessary to prevent the acceleration of localized snow and ice melt due to the ice-albedo effect affiliated with black carbon deposition. Baffinland maintains that we are already mitigating the concerns with respect to black carbon on snow and ice melt as we only ship for limited periods on either end of the shipping season when sea ice or snow on the land may be present. ECCC themselves recognize that black carbon is short-lived and does not remain in the atmosphere very long, so it is unlikely that Phase 2 shipping occurring in the Summer and Fall would affect Winter sea ice or snow conditions.

2.8.11.4 Government of Canada – Fisheries and Oceans Canada (DFO)

251. The federal government exercises authority over sea, coastal and inland fisheries within Canada's territorial boundaries. DFO's primary focus in reviewing proposed developments in and around fishery waters is to ensure that the works and undertakings are conducted in such a way that the proponents are in compliance with the applicable provisions of the *Fisheries Act*. DFO's environmental assessment and regulatory review of Phase 2 is based in large measure on sections 32 and 35 of the *Fisheries Act*. Section 32 prohibits a person from killing fish by a means other than by fishing unless the person is authorized to do so. Section 35 prohibits the harmful alteration, disruption or destruction of fish habitat without authorization.
252. As a Special Operating Agency of the DFO, the CCG helps the DFO meet its responsibility to ensure safe and accessible waterways for Canadians. The CCG also plays a key role in ensuring the sustainable use and development of Canada's oceans and waterways. With respect to marine shipping oil pollution prevention and preparedness and response in Canadian waters, both CCG and Transport Canada have responsibilities.
253. Baffinland agrees that with the Adaptive Management Plan in place in advance of Phase 2 operations, this will ensure that impacts to fish, marine mammals, and their habitats, predicted and accounted for by Baffinland, are effectively managed and monitored. It will also ensure that unanticipated impacts are detected early, such that effective responses can be developed and implemented with Inuit, federal and territorial agencies and other relevant experts.
254. DFO has also confirmed its approach to development of commitments with Baffinland:
- "These commitments are based on expert evidence provided by DFO scientists from a variety of scientific disciplines to reduce uncertainties in Project impact predictions. These commitments also attempt to ensure that any residual impacts are effectively detected through the establishment of additional and enhanced existing monitoring programs. This should also help improve what is currently a limited understanding of shipping impacts on marine mammals. These additional and enhanced monitoring programs are also of critical importance in the development and implementation of an effective adaptive management plan."*¹²¹

¹²¹ DFO Final Written Statement

“Based on DFO’s scientific expert advice, we have worked with Baffinland to develop commitments intended to reduce the potential for aquatic invasive species introduction and establishment. These commitments include measures for prevention, robust measures for monitoring and detection, as well as response measures.”¹²²

255. DFO also provided a detailed summary of commitments relevant to the topics of marine mammals and invasive species and included it in their submission. Baffinland also appreciates DFO’s confirmation that risk for cumulative impacts on fish and fish passage for Tote Road and railway crossing as well as withdrawals can be effectively managed through *Fisheries Act* Authorizations and required monitoring and offsetting.

2.8.11.5 Government of Canada – Health Canada (HC)

256. HC is the federal department responsible for helping the people of Canada maintain and improve their health. Health Canada did not submit a Final Written Statement, but it is noted that as per the attached Disposition List and Commitment Table, all of HC’s issues were resolved.

2.8.11.6 Government of Canada -Natural Resources Canada (NRCan)

257. NRCan regulates the manufacturing and storage of explosives through the federal *Explosives Act*. Beyond its regulatory role, NRCan is the Government of Canada’s principal earth sciences agency, providing Canadians with reliable geomatics and geoscience advice and knowledge. NRCan is also a source of scientific research and advice on mining and mineral technology for the mining and minerals industries as well as territorial and federal government departments that promote or regulate these industries.
258. As per Government of Canada’s cover letter of January 10, 2022, NR Can stated that it “finds the conclusions presented by the proponent to be reasonable.” Again the details of resolution are set out in the attached Disposition Table and Commitment List.

2.8.11.7 Government of Canada – Parks Canada (PC)

259. PC has a broad mandate for park user experience for national parks, including Sirmilik National Park. PC also has a mandate in the context of the proposed TINMCA in Lancaster Sound and adjacent waterways, including Eclipse Sound and Pond Inlet. Under the *National Marine Conservation Areas Act* shipping is an allowed activity in a National Marine Conservation Area, with the standard expectation that it be conducted in accordance with all applicable regulations and best practices. Given that Baffinland has exceeded applicable regulatory requirements and industry best practices, the mitigations committed to more than meet this standard.

¹²² DFO Final Written Statement

260. Baffinland also notes that PC stated on multiple occasions on the record that they do not have any expertise on topics such as ballast water, aquatic invasive species or marine mammals and so any views shared by PC in their Final Written Statement on those topics should not be given weight by NIRB. PC told the NIRB they relied on DFO's technical expertise on these topics and therefore given that DFO has confirmed that technical issues were resolved to their satisfaction (see Disposition Table), Baffinland's complete resolution of outstanding topics with DFO also transfers to resolution of any technical comments raised by PC.

2.8.11.8 Government of Canada – Transport Canada (TC)

261. TC is responsible for transportation policies and programs that promote all parts of the transportation system to work effectively and in an integrated manner, so as to provide Canadians with a sustainable transportation system that is safe, secure, efficient and environmentally responsible. The Department also has a responsibility to regulate associated transportation infrastructure, equipment and personnel in accordance with the legislation and regulations within the mandate of TC.
262. As per Government of Canada's cover letter of January 10, 2022 and the Disposition Table attached to this Final Written Statement, Baffinland addressed the questions/issues that TC had related to the project with Baffinland, including marine shipping.

2.8.12 Non-Governmental Organizations

2.8.12.1 Oceans North

263. Baffinland will address particular issues with respect to evidence presented to the NIRB under the appropriate topics in the submissions that follow; however, it is worth making a general statement that some of the evidence presented by Intervenor to the Board lacks credibility.
264. In particular, with respect to evidence presented by Oceans North, the Board should take into account the demeanor of that Party throughout the public hearing. As a Party, Oceans North displayed a continued lack of respect and compliance with the procedural directions made by the NIRB.¹²³
265. The disrespect for the Rules and of the Board's directions, which persisted throughout the public hearing process, should be taken into account in weighing the credibility of any evidence presented by Oceans North.
266. Where a Party, such as Oceans North, has shown a repeated and continued disregard for the NIRB's Rules of Procedure and the expectations for how Parties should conduct themselves and where the inference can be drawn that the Party is leveraging the public nature of the Board's process to influence the understanding of others, the evidence they present should be evaluated critically.

¹²³ NIRB Final Hearing Transcript, 2021, Vol. 1, pp. 187-189, 191-192; Vol. 3, pp. 442-445

2.8.12.2 World Wildlife Fund

267. Baffinland appreciates the WWF preparation of an updated (October 2021) third-party expert report respecting spill risk associated with Phase 2 which ultimately corroborated Baffinland's own expert opinion as well as that of Transport Canada that the risk of a significant marine spill during Phase 2 activities is extremely low, even prior to taking into account the robust mitigations in place.
268. We also appreciate WWF highlighting evidence of Baffinland's ability and wiliness to reduce dust being dispersed for current operations at the Mine Site. That being said, key aspects of Phase 2 including the switch from road to rail and the enclosure of crushing facilities will fundamentally improve dust management at site during Phase 2.
269. For the most part, however, the WWF's contributions have tended towards general statements concerning existing and proposed monitoring programs in the marine and terrestrial environments, which have not been supported by evidence as would be expected from such a group participating in the technical review of a major Project. This same approach is evident in their contributions to the Working Groups as well, where general and unsupported statements are typically offered in lieu of technical or otherwise informed and constructive advice.

2.8.12.3 Nunavut Independent Television Network

270. Given that NITV has participated in its capacity as a broadcaster, it is surprising that NITV has communicated a position at all on the Phase 2 Proposal.
271. NITV's submission notes that if the Phase 2 Proposal proceeds at this point or in the future, NITV believes that the NIRB should ensure that there are effective conditions related to the development and implementation of community engagement plans for each of the Impacted Communities, and for participatory monitoring mechanisms that address ongoing socio-economic impacts in addition to environmental impacts. Baffinland is pleased to confirm that it has committed to development of community specific engagement plans as well as Inuit led socio-economic monitoring which will supplement the Baffinland led and government led socio-economic monitoring processes.
272. NITV has provided a summary of positions with their Final Written Statement, Baffinland notes that it is missing many of the statements provided during the hearings. One notable omission is the failure to include summaries of statements from any of the many Inuit employees of Baffinland that described their experiences working at the mine and their support of the Phase 2 proposal during the public hearings and in written statements. As the NITV summary contains significant inaccuracies Baffinland submits it should not be given any weight nor should it be adopted by NIRB.
273. Baffinland wishes to correct a key error in NITV's statement: the Hamlet of Pond Inlet is in support of the Phase 2 Proposal and the Inuit Certainty Agreement, as confirmed in their submission of January 10, 2022.

2.8.12.4 Qikiqtaaluk Wildlife Board (QWB)

274. Baffinland appreciates that the QWB likely did not review the full volume of evidence that has been made available to NIRB as the decision maker. As such it is not surprising that the QWB submission fails to give proper consideration to the evidence filed by Baffinland. QWB also presents a number of conclusions while citing little specific supporting IQ or western science references.
275. Baffinland appreciates that the QWB has clarified that the powers and functions of HTOs are primarily on the general topic of the management of harvesting among members. The NIRB is not being asked in this assessment to take over the role of management of harvesting among members.
276. The QWB suggests that it has not been given opportunities to rebut statements of Baffinland's staff and consultants – indeed, it has taken the opportunity to do so in its submission of January 7, 2021. Despite the availability of transcripts, QWB has not challenged any of the specific statements made by Baffinland during the public hearings.

2.9 Procedural and Evidentiary Issues

277. Baffinland relies on its evidentiary record established to date under the various NIRB registries established for the Mary River Project, including the Phase 2 Proposal. Baffinland does not accept or agree with all statements made by parties, Intervenor or commenters in their written evidence or comments, including in their Final Written Statements. However, Baffinland did not (and reasonably cannot) respond to every point or position asserted by Intervenor or commenters with which it disagrees in this Statement. Baffinland's silence on any matter does not indicate acceptance or endorsement of any particular position.
278. The evidence submitted by Baffinland adheres to the guidance provided by the Board and is in line with or exceeds the quantity and technical detail of evidence submitted in support of the Mary River Project previously as well as other projects that have previously received Board approval. The evidence demonstrates that the Project would provide significant positive benefits and will not result in significant adverse environmental effects, once mitigation efforts are applied. Robust monitoring and adaptive management will address any residual uncertainty.

2.9.1 Concerns re NIRB Process

279. During the process, certain Intervenor have expressed concerns that the NIRB process and public hearings were procedurally unfair and that there were not sufficient opportunities for them to be heard. Complaints regarding the sufficiency of the Board's process on this file with respect to the rights of Intervenor and parties to be heard could not be less consistent with the reality of the evidence before the Board. The Board has carried out a rigorous Phase 2 assessment under what has arguably been subject to the most scrutiny of any regulatory review in Nunavut history. The regulatory process for Phase 2 was designed individually and independently by the Board based on the specific circumstances of Phase 2. The Phase 2 Proposal FEIS Addendum has been subject to a full reconsideration and review pursuant to the requirements of the Nunavut Agreement, NuPPAA and the Board's Rules of Procedure.

280. The Board granted participation status to more Intervenorors than in any other NIRB process to date, and also accepted written and oral testimony from participants on multiple occasions over 40+ months during the active assessment period.
281. In order to achieve its statutory mandate to consider the application in a timely manner, the Board was required to maintain deadlines set out in its rulings and procedural directions. The Board provided numerous opportunities for Parties, Intervenorors, community organizations and Inuit to provide written and oral traditional evidence and for all parties and Intervenorors to ask numerous rounds of information requests and technical comments and questions, file written evidence, give oral presentations to the Board, and to provide a written final argument. The process met the natural justice requirements for notice, and opportunity to know the case to be met, and to be heard.
282. Several Intervenorors submitted that appropriate testing of the evidence through oral cross examination was required and that the written process was not an adequate substitute to cross-examination. In this case, the Board has met these requirements, which is supported by the procedural record, demonstrating the extensive, dedicated opportunities clearly given to participants to be heard orally as well as in writing. NIRB was very careful to ensure that there were in-person opportunities, and delayed the completion of the public hearing until November 2021 to ensure their availability. The Board directly addressed concerns regarding its process, considered these concerns and made a reasonable and appropriate determination that certain components of the hearing could proceed in a partial written format. This included the exchange of questions in March 2021 and submission of Final Written Statements in January 2022. Time was granted in the public hearing in April for oral follow up questions from all Intervenorors.

Baffinland also agreed to forfeit time allocated to Baffinland to verbally respond to Intervenorors submissions (as reflected in the April 2021 public hearing agenda) and instead to provide this information to the NIRB in writing, in order to maximize the opportunities for Inuit and Impacted Community residents to ask questions and provide their comments during the Community Roundtable. Baffinland presented this information to the NIRB in English and Inuktitut. Though the April 2021 agenda did not present any opportunities for sur-reply by Parties and Intervenorors, NIRB granted an additional opportunity for comment on the materials filed by Baffinland on September 13, 2021 to certain participants who had raised relevant topics during the public hearing. All of this is well within the procedural discretion granted to NIRB under the Nunavut Agreement and NuPPAA.

283. All Parties, Intervenorors and the Board had multiple opportunities to vigorously test Baffinland's evidence by issuing technical comments and submitting information requests. Intervenorors asked questions in many rounds of technical comments and IRs, three technical meetings, a pre-hearing community roundtable, in addition to oral and written questioning opportunities during the public hearing. The Board held more hearing days for the Phase 2 proposal than any other proposal in NIRB history, 5 days in 2019 and a total of 21 days in 2021. In response to this engagement, and in response to specific requests and comments submitted to NIRB by Parties and Intervenorors, Baffinland shared supplemental evidence on many topics.

284. Parties and Intervenors received funding from the federal government to support their participation¹²⁴, in addition to any internal funding those organizations chose to allocate to their participation, which helped ensure their full participation. The following summarizes total funding allocated to each applicant from 2019-19 to 2021-22:
- Nunavut Independent Television Network: \$310,937.02
 - Hamlet of Clyde River: \$91,508.57
 - Municipality of Igloolik: \$328,372.74
 - Hamlet of Arctic Bay: \$89,886.54
 - Ikajutit Hunters and Trappers Organization: \$114,841.52
 - Mittimatalik Hunters and Trappers Organization: \$350,102.29
 - Amaruq Hunters and Trappers Organization: \$201,389.25
 - Arbutusview Services Ltd.: \$13,000.00
 - Qikiqtani Inuit Association: \$73,311.05
 - Hamlet of Pond Inlet: \$209,284.45
 - Hall Beach Hunters and Trappers Organization: \$78,451.19
 - Hamlet of Sanirajak: \$111,071.68
 - Clyde River Hunters and Trappers Organization: \$49,636.80
 - Igloolik Hunters and Trappers Organization: \$76,659.37
 - In total, funding to date from the Federal Government to the above listed organizations has totaled \$2,098,452.47.
285. Baffinland also directly funded the QIA's participation in the Phase 2 NIRB process via the IIBA, inclusive of each of the Tusaqtavut Reports. In addition, Baffinland has provided the QIA with extensive funding to support implementation of the ICA for the Phase 2 Proposal since the agreement was signed.
286. Certain Intervenors suggested that timelines in the NIRB process were unfairly compressed. Again, there is no basis for this suggestion in the evidence.
287. The record demonstrates that this process provided all Parties and Intervenors with numerous adequate opportunities to test Baffinland's evidence and to provide their own evidence if they chose to do so. The process has been fair and reasonable for Inuit participants, Parties and Intervenors.

¹²⁴ Government of Canada Final Update re Participant Funding, January 7, 2022

2.9.2 Issues Outside of the NIRB's Jurisdiction

288. The issues considered by the Board in relation to the Project form the basis of the evidence presented by Baffinland in this proceeding. Throughout the regulatory process, many of the parties and Intervenor have raised issues that are outside the Board's jurisdiction. As an example, the Igloodik Hunters and Trappers Association in their Final Written Statement of January 7, 2022, suggests consideration should be given to a moratorium on applications for future production increases or production related to an already approved Project. Baffinland respectfully submits that the Board must give due consideration to its jurisdiction when assessing the Project and its impacts.

2.9.3 Burden of Proof

289. In the context of this reconsideration process, Baffinland understands its responsibility to provide the NIRB with a FEIS Addendum and any further information requested by the Board which is responsive to the minimum EIS requirements set out under Article 12 and Section 12.5.2 of the Nunavut Agreement as well as all Project specific NIRB issued guidelines and directions. Beyond fulfilling specific information requirements, the EIS and supplemental materials provided during the NIRB process must provide the Board with the information necessary to assess the potential ecosystemic and socio-economic impacts of the Phase 2 Proposal.

290. In addition to the overall onus on the Proponent during the Board's assessment, individual participants throughout the assessment process must also meet the burden of proof for specific information or assertions offered to the Board. As stated in the NIRB Rules of Procedure¹²⁵ any party offering evidence has the burden of ensuring that they have provided the Board with sufficient information to support that participant's position:

32.1 In cases where the Board hears evidence, any party offering such evidence shall have the burden of introducing appropriate evidence to support its position. Where there is conflicting evidence, the Board will decide which evidence to accept and will generally act on a balancing of the evidence.

291. Further, where there is conflicting information, the Board has the authority to decide which information will be accepted by the NIRB in whole or in part. The standard of proof in this reconsideration requires a careful balancing of all information received by the Board, including all information filed with the Board prior to the Final Hearing and the information, comments and questions presented by participants in the public hearings.
292. Baffinland provided an FEIS Addendum and supplemental information that meets and exceeds the Burden of Proof as described here for the Boards consideration.

¹²⁵ NIRB Rules of Procedure, September 3, 2009, Rule 32.1 at p. 18.

2.9.4 NIRB Must Weigh Evidence Appropriately

293. Both scientific information prepared by experts in western science and IQ offered by Inuit have been respected, relied on and treated as evidence by Baffinland.
294. However, it is important to recognize that opinions have been tendered in these proceedings by parties and Intervenor without supporting evidence. Several Intervenor disagree with Baffinland but do not provide any evidentiary support for their own positions. Expression of a doubt, concern or fear is not in itself evidence and should not be treated as such when credible evidence to the contrary has been tendered by Baffinland. Where concerns have been raised, Baffinland has responded to that concern with reference to evidence as appropriate and made reasonable attempts to resolve that concern to the commenter's satisfaction.
295. Canadian case law provides clear instruction on the weight ascribed to conflicting expert evidence. When confronted with conflicting expert evidence, a trier of fact must not simply accept one expert opinion over another but determine the weight ascribed to the expert's testimony following a careful review of the evidence.¹²⁶ In determining the appropriate weight to be given to expert evidence, a trier of fact should make its assessment in consideration of the following factors¹²⁷:
- the relevance of training, experience and speciality of the expert to the issues before the court;
 - any reason for the expert to be less than impartial; and
 - whether that expert's testimony appears credible and persuasive compared and contrasted with the other expert testimony at trial.
296. Of course, NIRB is not bound by the strict rules of evidence found in Canadian courts. The Nunavut Agreement states the following at Article 12.2.24:
- 12.2.24 In designing its by-laws and rules of procedure for the conduct of public hearings, NIRB shall:*
- (a) to the extent consistent with the broad application of the principles of natural justice and procedural fairness, emphasize flexibility and informality, and, specifically*
- (i) allow, where appropriate, the admission of evidence that would not normally be admissible under the strict rules of evidence, and*
- (ii) give due regard and weight to the tradition of Inuit oral communication and decision-making; and*
- (b) with respect to any classification of intervenors, allow full standing to a DIO.*
[Emphasis added].

¹²⁶ *Housen v. Nikolaisen*. 2002 SCC 33 at para. 58.

¹²⁷ *Vescio v. Garfield*, [2007] O.J. No. 2624 (Ont. S.C.J.) at para. 102.

297. Accordingly, Rule 33.1 of the NIRB *Rules of Procedure* reads:

33.1 The Board may allow the admission of evidence that would not normally be admissible under the strict rules of evidence.

298. Despite NIRB’s flexible approach to the admissibility of expert and non-expert evidence, in ascribing weight to evidence NIRB should consider certain factors – such as the witness’s experience, qualifications, impartiality, and objectivity – as is standard practice in both Canadian courts and administrative tribunals. In *Pickford v. British Columbia (Director, Environmental Management Act)*, *Re*, the British Columbia Environmental Appeal Board (“BCEAB”) explained that concerns regarding a witness’ qualifications in relation to their comments on technical information “would be taken into account by the Board when deciding how much weight should be accorded to the comments.”¹²⁸

299. Also, in *East Oxford Community Alliance Inc. v. Ontario (Director, Ministry of the Environment and Climate Change)*¹²⁹, the Ontario Environmental Review Tribunal (“OERT”) considered the testimony of several lay witnesses supporting the appellant’s position that noise from a proposed wind facility posed a serious harm to human health. The witnesses relied on scientific and technical papers but did not have expert qualifications. Since the appellant adduced no supporting expert evidence to corroborate the lay witness testimony, the Tribunal stated¹³⁰:

“[...] the Tribunal cannot rely on the lay opinions to make a finding of causation in respect of the health effects of noise and finds that the evidence adduced by [sic] Appellant’s lay witnesses, at best, only rises to the level of an expression of concern.”

300. The OERT also dealt with alleged harms to human health posed by wind turbines in *Bovaird v. Director, Ministry of the Environment*¹³¹. In that decision, several non-expert witness testimonies included self-reported health symptoms linked to wind turbine projects. While not questioning the “sincerity” of the witnesses’ evidence, the OERT found that any conclusions regarding causation “requires a level of education, training and experience” which none of the witnesses possessed.¹³² Similarly, in *Wrightman v. Director, Ministry of the Environment*¹³³, the OERT concluded¹³⁴:

“At best, this evidence amounts to the expression of concerns that engaging in the Project will cause harm to human health. The Tribunal finds that these expressions of concern fall short of establishing that engaging in the Project [...] will cause serious harm to human health.”

¹²⁸ [2018] B.C.E.A. No. 14 at para. 101.

¹²⁹ [2015] O.E.R.T.D. No. 45.

¹³⁰ *Ibid.* at para. 63.

¹³¹ [2013] O.E.R.T.D. No. 87.

¹³² *Ibid.* at para. 313.

¹³³ [2014] O.E.R.T.D. No. 11.

¹³⁴ *Ibid.* at para. 150.

301. Baffinland's evidence based on the best available western science and IQ made available to Baffinland is objective, impartial, and backed by recognized expertise. Based on the case law and administrative decisions cited above, Baffinland submits that NIRB should give more weight to ample evidence from qualified experts compared to non-expert and/or less qualified evidence provided by third parties and Intervenor. Overall, NIRB should consider the qualifications, experience, objectivity, and impartiality when ascribing weight to any evidence under scrutiny, thereby preferring qualified evidence to evidence of concern or fear. In making these submissions, Baffinland wishes to make very clear that it is in no way suggesting that IQ should not be considered expert evidence – IQ should clearly be treated as expert evidence and Baffinland and its advisors have treated it in this way throughout this assessment - but IQ should be distinguished in how it is treated as evidence from expressions of personal opinion, concern or fear.
302. Baffinland encourages the Board to consider the mandate, jurisdiction, and expertise of the parties offering their views and opinions when they are weighing the evidence. As one example, in its Final Written Submission Parks Canada includes statements respecting invasive species and marine mammals.¹³⁵ However, as they stated to NIRB, Parks Canada has no subject matter expertise on these topics. Baffinland submits the statements on topics that are outside a party's mandate, jurisdiction and expertise should be given little weight by the Board. The Board should take the same approach for parties that have provided statements on topics requiring expertise for which they have none.
303. Comparatively few third-party technical expert reports were submitted to NIRB by parties and Intervenor. The vast majority of scientific evidence before NIRB was filed by Baffinland. Baffinland has provided comprehensive responses and rebuttals to the limited third party reports submitted by parties and Intervenor where they disagree with, or have misinterpreted Baffinland's expert scientific evidence. See for example, Baffinland's response to Josh Jones's draft report on underwater noise submitted by Oceans North¹³⁶; Baffinland's response to Open Oil's financial analysis submitted by Oceans North¹³⁷; and Baffinland's response to the Watt et al. study considering Cortisol levels in Narwhal submitted by MHTO¹³⁸. Supplemental to these submissions, Baffinland wishes to emphasize that the independent consultants on its team are recognized experts in their respective fields, and in every instance, Baffinland submits that their evidence should be preferred.¹³⁹

¹³⁵ Parks Canada, Final Written Statement, January 10, 2022

¹³⁶ Filed January 19, 2021, NIRB Registry No. 332558

¹³⁷ Filed January 26, 2021, NIRB Registry No. 332732

¹³⁸ Filed March 23, 2021, NIRB Registry No. 334147 (Appendix 6)

¹³⁹ See the curriculum vitae for Baffinland's technical experts, filed January 21, 2021, NIRB Registry No. 332641.

304. Many of the Parties and Intervenors' Final Written Statements include statements that are patently false, broadly overstate or materially misrepresent the evidence. What follows are simply a few examples. The Board must carefully review and assess each of the Intervenors' Final Written Statements to ensure that all factual statements made therein are supported by the evidentiary record.

For example:

- The QIA included the following statement in their Final Written Statement of January 10, 2022: "Put simply, the Tusaqtavut Study and the extensive oral and written evidence from the most impacted communities confirms that the Proposal will have a significant impact on the exercise of Inuit's s. 35 rights as it will impact many areas where Inuit exercise these rights in these three localized areas and across the Qikiqtani Region".¹⁴⁰ Respectfully, this is not true. Baffinland is supportive of the Tusaqtavut studies, and confirms that all three Tusaqtavut Studies (for the communities of Pond Inlet, Sanirajak/Igloolik and Clyde River/Arctic Bay, respectively) are funded by Baffinland per the IIBA. Baffinland is supportive of QIA's submission of the Tusaqtavut Studies on the NIRB registry and for these to be included as part of the Phase 2 reconsideration process, however, the Reports themselves state that they do not include significance determinations regarding anticipated residual and cumulative effects of the Project¹⁴¹.

Further, we have identified the following serious limitations that should be taken into account by the Board in weighting and considering their conclusions with respect to significance and the Phase 2 Proposal:

- According to the Tusaqtavut Reports, study participants were only presented with a very basic summary description of the Phase 2 Proposal, and were not provided with any information on the critical mitigations, monitoring programs, and compensation measures that have been proposed and/or agreed to by Baffinland. Many of these commitments have been developed collaboratively with the QIA and other Inuit Intervenors in direct response to concerns raised through the NIRB process and address potential environmental, socio-economic and cultural effects.

For instance, two of the three Tusaqtavut Studies were developed prior to the negotiation of the ICA between Baffinland and the QIA. None of the studies consider the existence of a robust, Inuit led monitoring program through the Inuit Stewardship Plan that will support an unparalleled role for Inuit in the development and implementation of adaptive management. These mitigations have become core components of the Phase 2 Proposal before the Board. As a result, the findings of the Study as presented in the Report relating to the potential effects of the Phase 2 Proposal (i.e. those which remain after the application of these measures) are based

¹⁴⁰ QIA Final Written Statement, January 10, 2022

¹⁴¹ Tusaqtavut Study, Pond Inlet, S. 1, NIRB Registry No. 325450

on an unmitigated and unmanaged version of the Phase 2 Proposal, and therefore do not represent potential residual effects of the Project.¹⁴²

- The Tusaqtavut Studies present their findings in a manner that suggests that they reveal observations from Inuit participants that reflect unanticipated environmental effects from the current project. However, it is noted within the covering letter attached to the submission of the Pond Inlet report by QIA, that “The Study focused on gathering spatial and contextual data from Inuit about their values as they relate to the place they live. It is not a socio-economic study focused on benefits and risks to communities from the Project, nor was it a full effects characterization¹⁴³.” Notably, the findings of the Tusaqtavut Studies are not presented along with comparisons to any previous environmental assessment effects predictions. It does not appear any consideration to FEIS or FEIS Addendum predictions was given by the researchers, nor presented to study participants. However, many if not all of the impact pathways from the Tusaqtavut Studies were considered in previous assessments, and the effects described are not inconsistent with the associated predictions and/or subsequent monitoring results based on Baffinland’s programs carried out under the Project Certificate and other approvals.

In order to resolve technical comments raised by QIA during the Phase 2 NIRB process, Baffinland has agreed to fund one or more additional CRLU Assessments to supplement the Phase 2 CRLU Assessment included in the FEIS Addendum. The original Phase 2 CRLU Assessment provided by Baffinland provides a quality bases for project effects monitoring, if needed, but recognizes the evolving nature of changing perspectives on land use and sees the value in an updated baseline CRLU assessment to form the basis for the monitoring program to be developed by the Inuit Committee. A supplemental CRLU Assessment for future measurement against the CRLU monitoring program can only enhance our shared information base, and that the baseline information should be as up to date as possible to support the Inuit-led monitoring programs upon commencement. However, Baffinland’s agreement to support additional CRLU assessments with QIA does not in anyway mean that Baffinland’s Phase 2 CRLU Assessment was deficient, or that the Tusaqtavut Studies support the view that the effects from the current project are greater than the predictions Baffinland originally presented when NIRB approved the project in 2012, 2014, 2018 and 2020, or that there are otherwise unanticipated effects being caused by the current project. ¹⁴⁴

- In its Final Written Statement, Parks Canada has stated that the shipping components of Phase 2 occur “*within Tallurutiup Imanga National Conservation Area (TINMCA)*” which suggests that it has already been established. However, the TINMCA remains a proposed National Marine Conservation Area at this time – Parks Canada previously clarified that TINMCA has not been established.¹⁴⁵ There

¹⁴² BIMC Response to QIA, DFO and PC Submissions, August 31, 2021, NIRB Registry No. 336643

¹⁴³ Tusaqtavut Study, Pond Inlet, Cover Letter, NIRB Registry No. 325448

¹⁴⁴ BIMC Response to QIA, DFO and PC Submissions, August 31, 2021, NIRB Registry No. 336643

¹⁴⁵ NIRB Registry No. 336239

are important steps that have not yet been completed, including preparation of an interim management plan by the Governments of Canada and Nunavut and QIA and public and stakeholder consultation on the draft.¹⁴⁶ This draft will take into account activities within the proposed TINMCA. TINMCA will not be established until after these steps are completed, and the area is established by Parliament under the *Canada National Marine Conservation Areas Act*.

- In their Final Written Statement, WWF stated, “The only other mining project (Meadowbank) in Nunavut with linear infrastructure, a 100 plus KM road, has shown that when the road was not closed for an extended period of time it interfered with the migratory patterns of caribou.”¹⁴⁷ NIRB should disregard this statement. In fact, Government of Nunavut, who independently authored that study, presented evidence refuting this statement during the November 2019 public hearing.¹⁴⁸ Baffinland has filed a large volume of scientific evidence, which also considered IQ, with the Board that shows that linear infrastructure can co-exist with caribou migration. Baffinland also notes that there are numerous other production mines that also include linear infrastructure (i.e. all weather roads).
- Oceans North stated in their Final Written Statement that, “*The Terms and Conditions for current operations are not being met.*”¹⁴⁹ This is a gross overstatement. In fact, Baffinland has achieved a very high degree of compliance with its Project Certificate. Recently, the NIRB indicated that they found Baffinland to be in compliance with over 86% of the current Project Certificate terms and conditions.¹⁵⁰ It is noted that several of the items flagged as “deficient” are actually determinations based on the failure of third parties to report to NIRB on current status, not Baffinland. Further, the most recent third-party audit carried out in accordance with Section 179(c) of Project Certificate No. 005 confirms a 95% completion rate of compliance with Project Certificate No. 005 Terms and Conditions.¹⁵¹
- In their Final Written Statement Oceans North states that, “Baffinland’s assertions regarding their operational viability are not supported by any evidence and are contradicted by available public information.” Baffinland has been consistent throughout this assessment in its written materials and in statements under oath at every public hearing that provide NIRB with clear evidence that Phase 2 is essential for the viability of the Mary River Project. Baffinland has submitted to the Board a brief – ‘Mary River Projects Economics Explained’ in January 2021, which provided evidence of Baffinland’s past and current financial status.¹⁵² Further, Oceans North’s repeated attempts to reference documents that NIRB has determined are not relevant to the assessment reveal a lack of respect for

¹⁴⁶ BIMC Response to QIA, DFO and PC Submissions, August 31, 2021, NIRB Registry No. **336643**

¹⁴⁷ WWF Final Written Statement, January 10, 2022

¹⁴⁸ Hearing Transcripts, Nov. 6, 2019, Vol. 5, p. 911-913.

¹⁴⁹ Oceans North, Final Written Statement, January 10, 2022

¹⁵⁰ See NIRB Registry No. 337508

¹⁵¹ See NIRB Registry No. 337324

¹⁵² NIRB Registry No. 332873

NIRB's process and judgement. NIRB must make its decision based on the information that has been presented to it on the record.

- Oceans North has stated in their Final Written Statement that, "Employment numbers are misrepresented – they would increase with Phase 2 construction but then decrease to below current levels. It is not clear that Inuit will benefit from expanding the mine, either in terms of royalties or workforce participation." The suggestion based on the evidence before NIRB that employment opportunities during Phase 2 operations will decrease for Inuit as compared to the current project blatantly ignores evidence to the contrary. In addition to maintaining the existing positions for the 325 Inuit Mary River employees (note this statistic was current at the time of the November 2021 hearing), it is clear that Phase 2 will present an opportunity for Baffinland to increase the number of Inuit employees at site. The NIRB has been provided with evidence that the employment support programs that are in place will be further enhanced through the structures agreed under the Inuit Certainty Agreement.

Further, this statement completely disregards the fact that Phase 2 is essential to the continued operation of the Mine and its associated existing employment opportunities. All of this is addressed in Section 6 of this Final Written Statement, "Socio-Economic Effects".

It is also incontrovertible that Inuit will receive more royalties from the increase in production proposed by Phase 2, and the greater royalty rates negotiated for the benefit of Qikiqtani Inuit in the ICA (up to \$2.4 billion in total to NTI and QIA, based on conservative assumptions). As demonstrated in this evidence, it is the case that both Inuit who choose to participate directly in the benefits of the Project (i.e. through employment) will continue to see the delivery of those benefits and receive enhanced opportunities for growth within the organization, and those that choose not to participate directly will also still receive enhanced benefits of the Project as a result of royalties generated by the Project. Further details are included in the Socioeconomic section of this Final Written Statement.

- Oceans North stated in their Final Written Statement that, "Baffinland's assertion that if Phase 2 is not approved the mine will go into care and maintenance is not supported by evidence and went unchallenged in the review process." Several Intervenor challenged Baffinland on this topic multiple times, which included lengthy cross examinations by Oceans North. Baffinland was consistent in its response respecting viability, under oath and as reflected in the NIRB transcripts.¹⁵³ The Mary River Project cannot continue as a trucking operation.
- WWF stated in their Final Written Statement that, "... Baffinland's Marine Environment Management Plan report from 2019 indicates the presence of a non-indigenous aquatic species in the regional study area. One of these species has been recorded for more than one year in a row, suggesting it may have established itself in the area. On the contrary to what Baffinland has suggested so far in the

¹⁵³ See, for example, hearing transcript vol. 1 (2021), pages 179, 205-207 NIRB Registry No. 333445; vol. 9, pages 1670-1671, NIRB Registry No. 333453; vol. 16, page 3044-3045, NIRB Registry No. 337420; vol. 17, page 3233, NIRB Registry No. 337437.

hearings, it needs to be clearly stated that there are Non-Indigenous Species in the Regional Study Area and they have likely come from bio-fouling or ‘riders’ on the ship’s hull. It still remains unclear how Baffinland is responding to this to ensure the potential spread is managed.” This misrepresents the follow up evidence that Baffinland has filed since 2019. WWF’s misrepresentations are either knowingly false or the result of their lack of any expertise in this area. See “Marine Environment” of this Final Written Statement for a summary of the work that has been carried out since 2019 that confirms there is no evidence to suggest the species was introduced on one of Baffinland’s vessel hulls, and that the species is an Arctic species. The evidence is clear that monitoring has not shown any Project-related invasive species in Milne Inlet.

- The MHTO states,¹⁵⁴ “The work under the Inuit Certainty Agreement (“ICA”) is also incomplete or has not begun. The ICA at this stage is nothing more than an agreement to make (or arbitrate) a plan – the plan itself remains to be developed”. As Baffinland has detailed in numerous updates to the Board (reflected in the Community Engagement Updates in the Community Consultation of this Final Written Statement), Baffinland and QIA have been working towards implementation of the ICA structures and plans since the ICA was signed in June 2020. A draft Adaptive Management Plan was included in the ICA itself and has been available on the NIRB registry since August 2020. As noted in the ICA, establishment of key structures, such as the Inuit Committees, are contingent on Phase 2 approval, however QIA has shared at the November 2021 that the development of the Inuit Stewardship Plan and the Inuit Committee are underway.¹⁵⁵ Given that implementation of these commitments are contingent on a Phase 2 approval, it should be well understood by all Parties that although that the structures are not complete, significant progress has in fact been made on many commitments under the ICA. To further demonstrate its commitment to the establishment of these structures, Baffinland has suggested revisions to the Project Certificate (see Appendix E) that will ensure functions such as the Inuit Committee are in place before key Phase 2 activities proceed. Further, the ICA contains a suite of financial benefits that are legally binding, including payments to support hunters that have already been made to the MHTO. These ICA requirements are also reflected in the Commitment List (Appendix C).
- The MHTO states¹⁵⁶, “Baffinland was required to collect and integrate IQ into the FEIS, but has failed to do so. In addition to not sufficiently collecting IQ, Baffinland has not reconciled differences between Inuit observations of the impacts from the existing project (including to narwhal, caribou and seal) and Baffinland’s conclusions on the significance of the impacts of the expanded Project. Instead, Baffinland has requested corroborating data before considering IQ, completely disregarding the oral tradition of the Inuit and the experience acquired over thousands of years of direct human contact with the local environment.” Baffinland integrated IQ collected between 2006 and 2016 in the Phase 2 FEIS Addendum that was accepted by the NIRB following a detailed review of concordance with the Mary River EIS Guidelines on October 3, 2018. This IQ is objectively reproduced for reference

¹⁵⁴ MHTO Final Written Statement January 10, 2022

¹⁵⁵ Hearing Transcript, Vol. 18, 3429

¹⁵⁶ MHTO Final Written Statement January 10, 2022

as Technical Supporting Documents 3 and 5, and integrated throughout each of the VEC and VSEC assessments. With respect to the assignment of significance, the EIS Guidelines do not require Baffinland to reconcile the differences between each individual Inuit observation and our significance determinations. Rather, it is Baffinland's responsibility to relay the spectrum of observations as they were presented to us, which was done in Technical Supporting Documents 3 and 5, within each Phase 2 VEC and VSEC assessment, and in several additional IQ reports carried out and submitted during the review process. As for 'completely disregarding the oral tradition of the Inuit', Baffinland's multiple commitments and project design changes issued in response to IQ received directly from Inuit in the Impacted Communities contradict the MHTO's statement.

- The MHTO states, "A gap in the assessment that transcends all of Baffinland's application material is the failure to adequately and accurately assess impacts to Inuit harvesting rights."¹⁵⁷ Baffinland did in fact include assessments that considered the effects of the Project on Inuit harvesting. These were considered in the Culture, Resource and Land Use assessments contained within TSD-25, and the stand-alone Food Security Assessment submitted in October 2019. This statement is a direct misrepresentation of facts that were made available to the MHTO directly by Baffinland and through the NIRB process.
- The MHTO states, "The Project will vastly expand marine shipping from 122 to 392 transits and involve extensive shipping during shoulder seasons." It is not clear what vessels the MHTO is using in their calculation, but Baffinland has proposed to increase the maximum number of ore carriers calling on Milne Port from 84 to 168, which equates to an increase from 168 transits to 336. During the current operation Baffinland has had as many as 12 fuel and freight vessels come to Milne Port in a single season, and no more than 24 are expected during Phase 2 construction, and considerably less during Phase 2 operations are anticipated. Further, the continued application and expansion of shoulder season transit restrictions will ensure no more shipping occurs under Phase 2 during the shoulder season periods than occurs today. These are all well known facts that have been made directly available to the MHTO through multiple rounds of written and oral questioning.
- The MHTO states, "Baffinland has downplayed the critical importance of the local study area to narwhals, including for mating, calving, nursing, and foraging". There is simply no evidence on the record to support this statement. In fact, there is extensive evidence on the record to the contrary. Limited examples include:
 - From TSD 24, Section 2.6.22¹⁵⁸
"Shipping has potential to effect narwhal distribution as their summer range overlaps with the Northern Shipping Route, and it is thought this this summering area is used for calving and mating. Underwater noise generated during shipping may elicit behavioral changes such as avoidance, evasive maneuvers (diving) or changes in swimming direction and/or speed. Mom-calf pairs

¹⁵⁷ MHTO Final Written Statement, January 10, 2022

¹⁵⁸ TSD 24 Marine Mammals Effects Assessment, NIRB Registry No. 320584

traveling along the shipping corridor may be more sensitive to ship noise given their slower travel speeds and reduced maneuverability around vessel traffic.”

From Section 2.7 of EWI Technical Memo (NIRB Registry No. 331325)

“Narwhal are common along the northern shipping route during the open-water season, with many mother/calf pairs observed at this time, confirming the importance of the area as a summer calving ground as reported through IQ and Baffinland’s marine mammal monitoring programs (JPCS 2017, QIA 2018; Golder 2020a). Data on the narwhal group composition has been collected from the Bruce Head shore-based monitoring program on an annual basis since 2014 by teams composed in equal part of biologists and Inuit researchers hired from Pond Inlet, NU. This indicator {referring to one of Baffinland’s current early-warning indicators (proportion of immatures)} also thus relies heavily on Inuit participant knowledge of narwhal population age-structure”

- Baffinland respects and acknowledges the importance of the area, and has developed precedent setting shipping mitigations more stringent than any others in Canadian waters (such as a 9 knot speed limit) in recognition of the importance of the area and the species.
- The MHTO states, “Baffinland acknowledges that it has not prioritized follow-up monitoring for ringed seal in the last years that it has undertaken marine shipping and shoulder season icebreaking to verify whether its effects predictions for the original project were accurate.” This is not true. Monitoring for seals was completed in 2021 in direct response to requests from the MHTO. The preliminary memo entitled “Update on Preliminary Results of 2021 Ringed Seal Monitoring Program” summarizing results can be found on the NIRB Public Registry No. 337194. The memo found the seal population to be commensurate with previous survey results by DFO before shoulder season shipping commenced; an outcome consistent with Baffinland’s previous impact predictions.
- The MHTO states, “Baffinland fails to account for the fact that caribou are at a tipping point and that additional disturbance at this time could impact the ability of the population to recover. Instead, Baffinland largely relies on what they term the current lack of interaction of caribou with the existing project infrastructure to excuse the lack of a rigorous assessment of the potential effects of the Project on caribou.” This is incorrect. Baffinland acknowledges the current low in the caribou population as part of a cycle, identified by Inuit, to inform a comprehensive assessment of caribou. In direct contrast to the statement by the MHTO, in July 2019 Baffinland submitted to the NIRB a memo responding to questions from the GN related to the Energy-Protein Model and Population Model Results for caribou. The memo specifically responds to a question that asks what the population of caribou needs to be to support a reasonable historical harvest of 2000-2500 caribou. The analysis and associated modelling find that under a no development scenario it would take 42 years to return to a population that would support a harvest of 2100 caribou, and 44 years if the north and south railways were to cause high displacement and disturbance. This is a direct accounting of the Projects potential impacts on the return of a population of caribou that are at a historical low.¹⁵⁹

¹⁵⁹ Energy-Protein Model and Population Model Results to Address GN TRC-18, NIRB Registry No. 325900
July 9, 2019, EDI

- The MHTO states “Even for the thresholds that have been developed by Baffinland, it is unclear how and when a response will actually be triggered. Baffinland wants a high level of certainty with respect to the linkages to the Project before a response will be triggered”. The only reference to the need for a higher degree of certainty in the draft Adaptive Management Plan is when a high-risk response is being considered. It is a reasonable acknowledgement that when serious actions are being considered, there should be a heightened confidence that the actions will be effective. There are ample other references in the Draft Adaptive Management Plan document and in Baffinland’s oral testimony that confirm Baffinland will implement adaptive management responses while investigations are being completed. That is in fact a central requirement of the draft Adaptive Management Plan. Examples of Baffinland’s willingness to implement adaptive management includes Baffinland’s restriction of any icebreaking during the 2021 Shipping Season. Despite a lack of certainty that any effects on the narwhal population were occurring as a result of Project activities, all shipping through ice during the narwhal in-migration period was eliminated, consistent with the application of the Precautionary Principle and commitments contained within the Draft AMP.

MHTO includes a statement that, “Instead, Baffinland has requested corroborating data before considering IQ, completely disregarding the oral tradition of the Inuit and the “experience acquired over thousands of years of direct human contact with the environment”. MHTO’s citation to support this suggestion is to a statement on the public hearing transcript from the MHTO’s former Chair, not a statement from Baffinland. There is no evidence on the record that Baffinland has requested corroborating data before considering IQ. In fact it is quite the opposite – Michael Setterington’s descriptions of basing his assessment on IQ is a particularly clear illustration of this.¹⁶⁰ The quote selected by MHTO to support their statement does not reflect Baffinland’s approach to use of IQ.

305. The above examples are for illustrative purposes and do not represent all examples of where information was misrepresented or un-supported through various interventions including the Final Written Statements. However, in conclusion the relevant issues raised by Intervenors in argument were directly addressed over the course of this proceeding in evidence and responses tendered by Baffinland, which were often not considered or even acknowledged by the Intervenor in their Final Written Statements. This is apparent by the lack of reference to the evidence in many Intervenors’ Final Written Statements.
306. Some Intervenors commented that Baffinland has provided insufficient evidence to the Board. These concerns are unwarranted. Baffinland has submitted extensive evidence on all aspects of the Project, has filed thousands of pages of evidence and complied with the Board’s directions on procedure throughout this hearing. The Panel has sufficient information to make a positive recommendation on the Project.

¹⁶⁰ Transcript, Vol. 3, 508-509; Vol. 6, 644-645, 647-648, 692-693, 711-712, 718-720, 729-732; Vol. 5, 837-838; Vol. 13, 2527-2528; Vol. 19, 3580-3581, 3603-3604, 3615.

3 ASSESSMENT OVERVIEW

3.1 Baseline Data

307. Baffinland made significant efforts to collect and incorporate baseline data into Project planning. Baffinland completed an extensive field program of biophysical surveys, including aquatics and wildlife surveys to obtain baseline information.¹⁶¹ Inuit organizations and groups were given the opportunity to participate in field studies and provide IQ to inform the baseline information collected.
308. It is notable that just as Baffinland has the advantage of building on an existing mine in designing the Phase 2 Proposal, the FEIS Addendum builds on the robust work that formed the basis of the NIRB's approval of the Mary River Project in 2012, the Early Revenue Phase in 2014 and the Production Increase Proposal Extension in 2020. The FEIS Addendum builds on the baseline data already collected and included in the FEIS (2012) and ERP Addendum (2013). In addition, unlike the original assessment for the greenfield project in 2012, Baffinland did not have to rely on predictions only in the FEIS Addendum for the Phase 2 proposal. Baffinland and its experts had the benefit of the results of monitoring programs up to 2017 to be included directly in the assessment. As the assessment proceeded in parallel with ongoing operations, monitoring data that became available during the Phase 2 reconsideration review process, was taken into considerations.

3.2 Assessment Methodology – Significance Determinations

309. Baffinland's methodology for the assessment of the Phase 2 Proposal followed the amended version of the NIRB's Guidelines for the Preparation of an Environmental Impact Statement for Baffinland Iron Mines Corporation's Mary River Project (the **Amended EIS Guidelines**). The Amended EIS Guidelines were issued on October 6, 2015, which were amended by the NIRB for the Phase 2 Proposal. The Amended EIS Guidelines focused the assessment on the same valued ecosystem and socio-economic components established for the approved project.
310. Baffinland followed the Amended EIS Guidelines in conducting its assessment of the Phase 2 Proposal. The Amended EIS Guidelines are comprehensive and detailed, and a full review of them is unnecessary for the purposes of this summary, however, there are several relevant points that are worth considering with respect to how the Amended EIS Guidelines relate to significance determinations.
311. First, the Amended EIS Guidelines are based on requirements set out in section 12.5.2 of the Nunavut Agreement and sections 89 and 90 of the *Nunavut Project and Planning Assessment Act*. That section provides that:

"Where appropriate, the EIS shall contain information with respect to the following:

¹⁶¹ See, for example, Section 8 of the Addendum to the Final Environmental Impact Statement, filed October 3, 2018, NIRB Registry No. 320619.

- *Project description, including the purpose and need for the Project;*
- *Anticipated ecosystemic and socio-economic impacts of the Project;*
- *Anticipated effects of the environment on the Project;*
- *Steps which the Proponent proposes to take including any contingency plans, to avoid and mitigate adverse impacts;*
- *Steps which the Proponent proposes to take to optimize benefits of the Project, with specific consideration being given to expressed community and regional preferences as to benefits;*
- *Steps which the Proponent proposes to take to compensate interests adversely affected by the Project;*
- *The monitoring program that the Proponent proposes to establish with respect to ecosystemic and socio-economic impacts;*
- *The interests in land and waters which the Proponent has secured, or seeks to secure;*
- *Options for implementing the proposal; and*
- *Any other matters the NIRB considers relevant.”*

312. Baffinland incorporated these factors into its assessment methodology.

313. More specifically, Baffinland applied these factors to come to its determination on significance of effects as prescribed and expected of the NIRB. To summarize, Baffinland’s assessment used the approach outlined below, and using the same approach that formed the basis for NIRB’s approval of the Mary River Project and subsequent amendments.¹⁶²

1. Scoping and Baseline:
 - a. issues scoping
 - b. selection of valued components
 - c. establishment of assessment boundaries
 - d. description of existing and expected conditions (“Baseline”)
2. Effects Assessment:
 - a. identification of potential project interactions
 - b. assessment of potential project effects
3. Mitigation:
 - a. Identification and application of proposed mitigation measures
4. Residual Effects Assessment:
 - a. determination of whether residual effects exist
 - b. significance determination (where residual effects exist)

¹⁶²162 Appendix I of the main EIS document – copy of 2012 methodology

c. cumulative effects assessment (where residual effects exist)

314. This approach, that is, determining the significance of a potential effect **after proposed** mitigation measures have been applied, is standard practice in environmental assessments, and has been accepted by the NIRB in respect of other Nunavut project proposals including the other phases of this Project and is the approach used by Baffinland in its own determination of significance.
315. Further, for some potential project effects, Baffinland has proposed additional mitigation measures since the Final EIS was filed, and therefore the significance determinations in the Final EIS can be considered conservative – i.e., additional mitigation measures should serve to further reduce any project-related effects.
316. Section 7.11 of the Amended EIS Guidelines specifically outlines certain requirements for Baffinland's significance determinations. In particular, the Amended EIS Guidelines provide the following:

In the process of significance determination, the Proponent is expected to communicate with potentially-affected communities, including relevant individuals and organizations to solicit input and incorporate their views regarding the value it has placed on a VEC or VSEC, as well as the associated significance of impacts. The Proponent shall describe how it will ascertain the significance that different parties assigned to each impact, and how it will proceed if different parties ascribe varying significance to VECs, VSECs or the associated impacts. If it is impossible to attain a consensus on the significance of certain impacts, the Proponent shall present the range of viewpoints expressed and shall present and justify its preference, if any.

317. Further, section 9.8 of the Amended EIS Guidelines provide for the following methodology with respect to the determination of significance:

9.8 Significance of Residual Impacts

After having established the mitigation measures, the EIS shall present the residual effects assessment of the Project on the components of the biophysical and human environments, so that the reader can clearly understand the real consequences of the Project, the degree of mitigation of the effects and which effects cannot be mitigated or compensated for.

The Proponent should include a summary table in this section of the EIS, which presents the effects before and after mitigation on the various components of the environment, the mitigation measures applied and the residual effects have been assessed.

The determination of significance of residual impact shall take into account the attributes of each impact in accordance with the criteria established in Subsection 7.11.

[Bold emphasis added, underlined emphasis in original].

318. Section 9.8 of the Amended EIS Guidelines prescribe that significance is to be determined “after having established the mitigation measures...so that the reader can clearly understand the real consequences of the Project, the degree of mitigation of effects, and which effects cannot be mitigated or compensated for.” Baffinland followed this methodology.
319. It is also important to recognize that NuPPAA prescribes the manner in which the Board must consider significance. Under s. 103(1) of *NuPPA*, in conducting its review, the Board must take into account certain factors:

Factors to consider

103 (1) *In conducting a review of a project, the Board must take into account the following factors:*

- (a) the purpose of the project and the need for the project;*
- (b) whether, and to what extent, the project would protect and enhance the existing and future well-being of the residents and communities of the designated area, taking into account the interests of other Canadians;*
- (c) whether the project reflects the priorities and values of the residents of the designated area;*
- (d) the anticipated effects of the environment on the project, including effects associated with natural phenomena, such as meteorological and seismological activity, and climate change;*
- (e) the anticipated ecosystemic and socio-economic impacts of the project, including those arising from the effects referred to in paragraph (d);*
- (f) the cumulative ecosystemic and socio-economic impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out;*
- (g) whether the impacts referred to in paragraphs (e) and (f) would unduly prejudice the ecosystemic integrity of the designated area;*
- (h) the measures, including those proposed by the proponent, that should be taken to*
- (i) avoid and mitigate adverse ecosystemic and socio-economic impacts, including contingency plans,*
- (ii) optimize the benefits of the project, with specific consideration given to expressed community and regional preferences in regard to benefits,*
- (iii) compensate persons whose interests are adversely affected by the project, and*
- (iv) restore ecosystemic integrity after the permanent closure of the project;*
- (j) the significance of the impacts referred to in paragraphs (e) and (f), taking into account the measures referred to in paragraph (h);*

- (j) the capacity of renewable resources that are likely to be significantly affected by the project to meet the existing and future needs of the residents of the designated area;*
 - (k) any monitoring program of the project's ecosystemic and socio-economic impacts that should be established, including one proposed by the proponent;*
 - (l) the interests in land and waters that the proponent has acquired or seeks to acquire;*
 - (m) the options for carrying out the project that are technically and economically feasible and the anticipated ecosystemic and socio-economic impacts of such options;*
 - (n) the posting of performance bonds;*
 - (o) the particular issues or concerns identified under subsection 96(1); and*
 - (p) any other matter within the Board's jurisdiction that, in its opinion, should be considered.*
- [Emphasis added].*

320. Importantly, section 103(1)(i) provides that the NIRB must take into account the significance of impacts, but in so doing, must take into account any measures under subsection 103(1)(h) which includes measures to “avoid and mitigate adverse ecosystemic and socio-economic impacts, including contingency plans” (s. 103(1)(h)(i)). In the Board’s own determination of significance, it is required to take into account all the measures Baffinland proposes to avoid or mitigate Project-related effects.
321. Baffinland notes that certain Parties expressed concerns with respect to Baffinland’s conclusions that potential project effects are “not significant.” In general terms, certain parties expressed the view that such significance determinations did not take into account Inuit perspectives on significance.
322. Such statements are, however, inaccurate. Baffinland’s assessment took into account IQ and community input shared with it, the values Inuit placed on VECs and VSECs, along with western science. But in coming to its significance determinations, Baffinland also considered the application of the proposed mitigation measures, as it was required to do by the Amended EIS Guidelines.
323. It is clear from the record that in certain submissions, where parties have indicated that Inuit have held effects to be significant to them as a result of the value placed on a given valued environmental or valued socio-economic component, that those parties did not consider Baffinland’s proposed mitigation measures in making that conclusion that an effect was, in their view, “significant.” An example of this is the Tusaqtavut Studies prepared on behalf of the QIA. While these reports provide important and valuable information with respect to the values Inuit place on certain environmental or socio-economic components that may interact with the Project, they do acknowledge certain limitations, including the fact that mitigation measures were not considered as part of the study:

This Report does not include recommendations on mitigation, monitoring, or compensation measures. Conclusions on monitoring, mitigation, and compensation measures are outside the scope of this Report.

324. The authors of the Tusaqtavut Studies canvassed Inuit participants on questions regarding the value of specific VECs and VSECs, and how the Project may affect them, but did not ask questions considering how Baffinland's proposed mitigation measures may serve to reduce or eliminate the potential effect identified by the participant.
325. Baffinland held a number of workshops to better understand Inuit perspectives on mitigation measures, including:
- Three Risk Assessment Workshops including participants from Igloolik, Hall Beach, Arctic Bay, Clyde River and Pond Inlet held in January, February and May 2019. These workshops focused on community member engagement in identifying potential impacts and mitigation and monitoring measures for the Phase 2 Proposal, in addition to documenting community perspectives on risk acceptability and management.¹⁶³
 - A five-day workshop session from January 27 to 31, 2020, with participation from the QIA, Government of Nunavut, and representatives of North Baffin Communities and Hunter and Trapper Organizations (the "Community Engagement Workshop"). The focus of this workshop series was to increase the level of understanding of the work that had been completed for the Phase 2 Proposal to date, and continue to further develop protection measures and understand the mitigation and monitoring that would be supported by workshop participants, including community-specific priority areas for managing potential impacts and enhancing benefits.¹⁶⁴
326. As a result of the input received from these workshops, Baffinland understood that Communities wanted to participate in the monitoring of the Project, ensure IQ was integrated into monitoring plans, and were seeking better definition of how monitoring results would inform adaptive management.¹⁶⁵ Taking this and other feedback received from participants into account, Baffinland subsequently began negotiating the ICA with the QIA, with the intent that that the commitments formalized in that agreement would provide a framework to meet those objectives going forward with respect to Phase 2.

¹⁶³ See Baffinland Response to Final Written Submissions, Rail Alignment Summary Report, s. 1.1, NIRB Registry No. 327148, p. 130 of PDF.

¹⁶⁴ Baffinland Community Engagement Update dated April 22, 2020, including Appendix D, NIRB Registry No. 329530; Draft Workshop Report from ERM to Megan Lord-Hoyle, October 14, 2020, NIRB Registry No. 331791.

¹⁶⁵ Draft Workshop Report from ERM to Megan Lord-Hoyle, October 14, 2020, NIRB Registry No. 331791, p. 8.

327. Baffinland's FEIS Addendum for the Phase 2 Proposal is a comprehensive assessment that meaningfully considered IQ, Inuit values as well as scientific information, together with its proposed mitigation measures. It then came to conclusions with respect to significance in relation to Project effects in a manner that is consistent with that prescribed by NuPPAA, the Mary River EIS Guidelines and the methodology applied to both the original FEIS and FEIS Addendum for the ERP. This approach (i.e., whether or not mitigation measures were considered, or the level of understanding of those mitigation measures) prescribed by NuPPAA, may account, in whole or in part, for the different conclusions reached by Baffinland and other Parties with respect to significance.
328. The NIRB's Amended EIS Guidelines clearly contemplate that it is possible for parties to come to differing conclusions on significance (i.e., "if it is impossible to attain consensus"). When that occurs, that does not render "invalid" Baffinland's assessment, or require Baffinland to conduct more assessment work. Instead, it requires the NIRB to carefully consider the range of views in light of the evidence before it.
329. Baffinland acknowledges that some participants in the NIRB process have said that individual community members may define significance differently or come to different conclusions. They have had the opportunity to make those views known to NIRB through process – that is the purpose and a great strength of the NIRB review process.
330. Baffinland has provided an overview of the assessment methodology it used for Phase 2 assessment, and how that assessment methodology was used to determine the significance of any potential effects. In short, it is the comprehensive mitigation measures Baffinland has committed to which contributes to the conclusion of no significant adverse effects.
331. Based on a recommendation in the NIRB's Pre-Hearing Conference Report, Baffinland submitted a Summary of Significance Determinations on December 18, 2020. This summary outlined Baffinland's general approach towards significance determinations and how Baffinland reconsidered its conclusions where parties had raised concerns..¹⁶⁶ The summary looks at each VEC and VSEC and provides an exhaustive overview of what we heard from Intervenor and communities, identifies any additional analysis conducted during the review, identifies any additional commitments made through the review, and reconfirms in each case Baffinland's original significance determinations in the FEIS Addendum.

¹⁶⁶ NIRB Registry No. 332183

3.3 Assessment Methodology – Incorporating IQ into the EIS

332. With respect to the incorporation of IQ and other community input into the FEIS Addendum, Baffinland agrees that it is essential to reflect community concerns, advice and IQ in the assessment of the Phase 2 Proposal. That guiding principle has been central to the planning and undertaking of all of the assessment work Baffinland has undertaken for the Mary River Project to date, including initial project and assessment scoping, baseline reporting, issues scoping, effects assessment and management planning (mitigation and monitoring).¹⁶⁷
333. As described above, Baffinland began gathering IQ on the Project area in the mid-2000s. Since that time, North Baffin community members have kindly and generously shared IQ with Baffinland, which has shaped the Project's design (not only for Phase 2, but also for the Early Revenue Phase), environmental assessments and ongoing environmental management. This sharing of IQ has unequivocally made for a better project.
334. For the Phase 2 Proposal Baffinland is fortunate to have been able to access a wide body of IQ related to the Mary River Project area and the Mary River Project itself. Specifically, this includes:
- Mary River FEIS Volume 2 (Public Consultation and IQ Collection Records) (2006-2010)
 - Mary River Operations Consultation Record (2014-2021)
 - Phase 2 Workshop Report (5 IQ Workshops) (2015-2016)
 - Community Risk Assessment Workshops (4 Workshops) (2019)
 - Rail Alignment Crossing Workshop and Rail Alignment Summary Report¹⁶⁸ (1 Workshop) (2019)
 - Tusaqtavut Studies for Pond Inlet, Igloolik, Sanirajak, Arctic Bay and Clyde River (2019-2021)
 - IQ shared through direct engagement with Impacted Communities
 - IQ shared through the NIRB formal written processes and opportunities for oral participation (i.e., three technical meetings and the public hearings in November 2019, January 2021, April 2021 and November 2021).
335. Baffinland has integrated the IQ shared with us by incorporating it into the Project assessments and activities in the following ways:
- IQ has shaped Baffinland's characterization of the baseline environment since 2006.

¹⁶⁷ Figure 2-3.2 from Volume 2 of FEIS (2012) page 41 of 72

¹⁶⁸ Community Risk Assessment Workshops (4 Workshops) (2019)

- IQ has informed the selection of the Valued Ecosystem Components (VECs) and Valued Socio-Economic Components (VSECs). As examples, the selection of blueberry, lichen, narwhal, Arctic char, seals and caribou as VECs and VSECs was based on IQ shared with Baffinland.
- IQ was categorized by themes and made available to VEC and VSEC assessment leads to be integrated into their assessments where appropriate.
- IQ has shaped and will continue to shape key aspects of environmental management of the Project. As an example, based on IQ shared with it, and a desire to minimize negative interactions between the Project, wildlife and harvesters as much as possible, Baffinland has committed to the following mitigation measures (with references to Commitments in BIM's Phase 2 Disposition Table and Commitment List, NIRB Registry No. 337148, where applicable):
 - The removal of winter shipping from the design of the Phase 2 proposal
 - Avoidance of land fast ice while shipping, effectively reducing the shipping season to no more than 3-4 months (see Commitment 215).
 - To reduce acoustic disturbance to wildlife and harvesters from shipping operations:
 - Reduced speeds of Project vessels (9 nm/hr) (see Commitment 89).
 - 40 KM set-back from floe edge at the beginning of the shipping season (see Commitment (see Commitment 89).
 - Reduced vessel transits in heavy (concentration, thickness) ice conditions (see Commitment 215).
 - Ensure confirmation from MHTO that floe edge is closed for hunting prior to shipping (see Commitment 89).
 - Avoidance of shipping during ringed seal birthing, nursing and breeding periods (see Commitment 89).
 - Use of a hi-railcar during rail operations to monitor for wildlife in proximity to the railway.
 - A decision matrix to stop or slow traffic when caribou are on or approaching the Tote Road and/or railway, consistent with guidance to 'let the leaders pass'
 - Commitment to work with Inuit from the Impacted Communities on identification of additional caribou and snowmobile crossings along rail line.
 - Inclusion of rail line underpasses to maintain known travel routes at locations identified during the Rail Alignment Crossing Workshop¹⁶⁹.
 - Abandoning Route 1 of the rail deviation for Route 3 to avoid a known traditional travel route between Pond Inlet and Igloolik.

¹⁶⁹

Community Risk Assessment Workshops (4 Workshops) (2019)

336. Further to the examples provided above, individual Inuit and Inuit groups have told Baffinland that ensuring Inuit are included in the monitoring of the environment and Project effects is critical to the ongoing incorporation of IQ and learnings to be provided by Inuit. The formalized structures that Baffinland is implementing will ensure that Baffinland is made aware of critical IQ in a timely manner, that will inform how the project is impacting the environment as well as necessary mitigations to address those impacts.
337. While Baffinland has, throughout the Project to date, understood the importance of integrating IQ and has included Inuit staff in its monitoring programs carried out under the Project Certificate, our goal for Phase 2 is continuous improvement on integration of IQ. Looking to the future, Baffinland will continue to integrate IQ throughout the life of the Project and has made a number of commitments to NIRB (some mirrored in the ICA) which will serve to improve this process to ensure that this integration is undertaken in a more “systematic” and direct way, with much improved communication channels between Inuit impacted by the Project and Baffinland. As noted above, the IQ Advisors that will be Baffinland employees working in each Impacted Community, can be a key component to support this information transfer.
338. IQ will be incorporated into project planning, project operations and environmental management systems, as well as all Project adaptive management plans. To that end, Baffinland has committed to the Inuit Stewardship Plan which will be led by QIA, as outlined above. The Inuit-led Inuit Stewardship Plan will establish a process to fully integrate IQ into the Project’s Environmental Management System, with an emphasis on the Adaptive Management Plan, such that IQ is integrated along with western science into project planning, operation, monitoring, and adaptive management. Once the ISP and all its individual components has been created its role will be appropriately captured in an updated IQ Management Framework, also to be developed and approved with communities. The IQ Advisors will also help ensure that IQ is shared and Baffinland’s actions in response of that sharing are clearly communicated back to the Impacted Communities.
339. Baffinland’s existing and/or newly proposed Terms of Reference for the Working Groups (i.e., existing working groups such as the Marine Environment Working Group (MEWG), the Terrestrial Environment Working Group (TEWG) and the Socio-economic Working Group (SEWG), as well as the newly committed to Freshwater Environment Working Group (FEWG))¹⁷⁰ do, or will include reference to western science as well as IQ.
340. Baffinland is confident that through its extensive commitments regarding Inuit stewardship, including the development of two Inuit Committees composed of Impacted Community representatives, the creation of Baffinland employee IQ Advisor positions, Inuit-led monitoring along with Baffinland-led monitoring, and adaptive management, the project will be monitored and adjusted as needed based on integration of IQ together with western science.

¹⁷⁰ Note TORs have not been developed for the FEWG to date.

Key Reference Documentation:

- Amended FEIS Guidelines, NIRB Registry No. 317361
- FEIS, Volume 2, Section 3, NIRB Registry Nos. 285324 to 285326
- Technical Supporting Document 5 – Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Summary of Significance Considerations Phase 2 Proposal, December 18, 2020
- April 17, 2019 letter from Lou Kamermans, Baffinland to Ryan Barry, NIRB entitled “Proponent’s Disposition Table and Response to QIA Request for Additional Guidance following Baffinland’s “Phase 2 Proposal” Technical Meeting”, NIRB Registry No. 324551
- ICA, ID1 - Inuit Committee and Inuit Stewardship Program, NIRB Registry No. 331621
- Baffinland’s IQ Management Framework, filed September 18, 2019, NIRB Registry No. 326802
- ICA, Schedule A, ID 2 and Appendix ID 2(1) Draft Adaptive Management Plan, NIRB Registry No. 331621
- Guidelines for the Preparation of an Environmental Impact Statement for Baffinland Iron Mines Corporation’s Mary River Project, Amended Version for the Phase 2 Development Proposal, October 6, 2015 EIS, filed October 5, 2018, NIRB Registry No. 317361
- NIRB Proponent’s Guide, NIRB Technical Guide Series, February 2020
- NIRB conformity determination on Phase 2 FEIS Addendum, NIRB Registry No. 320657
- Nunavut Planning and Project Assessment Act, s. 103(1)
- Summary of Significance Considerations Phase 2 Proposal, filed December 18, 2020

3.4 Summary of Key Assessment Conclusions

341. Overall, Baffinland’s assessment conclusions in the FEIS Addendum are that the Phase 2 Project, taking into account measures to avoid and mitigate Project-related effects (see *NuPPA* s. 103(1)(h)(i), and s. 103(1)(i)), will not result in any significant adverse ecosystemic or socio-economic effects. In the case of valued socio-economic components, the determination was that positive socio-economic benefits would result from the Phase 2 Project.¹⁷¹
342. Baffinland’s consultants came to conclusions that the Project would not result in significant adverse environmental or socio-economic effects based on multiple lines of evidence, including:
- IQ and other community input,
 - Empirical evidence (site-specific, quantitative data collected during annual monitoring and baseline studies, etc.),

¹⁷¹ Addendum to the Final Environmental Impact Statement, filed October 3, 2018, NIRB Registry No. 320619.

- Model evidence (acoustic modelling, air quality modelling),
 - Literature (i.e., peer reviewed journal articles as well as grey literature published by government or industry),
 - Evidence from other environmental assessments (such as for past developments in Canada), and
 - Expert opinion (knowledge and experience that trained professionals have accumulated over time in a specific technical discipline).
343. Baffinland consultants were also able to make their determinations in the context of the robust environmental management systems already in place, as well as the commitments to new, progressive mitigations proposed for Phase 2.
344. Since the FEIS Addendum was filed, through consultation with Parties, and as a result of feedback from communities, Baffinland has developed further, additional protective mitigation measures - many of which go beyond applicable federal and territorial regulatory requirements. Baffinland's conclusions with respect to significance in the FEIS Addendum did not take into account these further, additional mitigation measures, and as a result, any conclusions it reached in the FEIS Addendum with respect to the significance of effects can be considered conservative.
345. Baffinland is appreciative of the value and insight that the Tusaqtavut Studies provided. Baffinland asked its team of experts to review the Tusaqtavut Studies and consider their assessment conclusions in light of those studies. Baffinland's experts came to the conclusion that the information provided in the Tusaqtavut Studies was consistent with the information Baffinland had previously collected through its own IQ studies or through its extensive ongoing community engagement program.¹⁷² As a result, there was no basis on which to revise Baffinland's significance determinations.
346. A more comprehensive summary of the methodology used for reaching its assessment conclusions and how the term "significance" has been used by Baffinland throughout the assessment, in accordance with the Amended EIS Guidelines, can be found in the Summary of Significance Considerations filed by Baffinland on December 18, 2020.

¹⁷² Hearing Transcript Vol. 2, p. 380, lines 3-15.

347. As explained above, these conclusions were reached after taking into account the application of the comprehensive suite of measures to avoid or mitigate Project-related effects. The original determinations were based on, both existing mitigation measures put in place for the operating Project, as well as new mitigation measures for the Phase 2 project proposed at the time the FEIS addendum was submitted. Since that time Baffinland has further strengthened its mitigation measures based on direct feedback from participants in the reconsideration process and direct engagement with the Impacted Communities. Baffinland continues to stand by those assessment conclusions: the Project will not result in any significant adverse ecosystemic effects, or socio-economic effects, and in fact, is predicted to result in beneficial socio-economic effects.
348. Baffinland's significance findings do not mean that Baffinland will not monitor the Project or make adjustments. Baffinland will be required by the Project Certificate, as well as by commitments made under the ICA to undertake comprehensive monitoring for the Project in parallel with Inuit monitoring led by QIA, to incorporate the findings of scientific and Inuit monitoring, and to take action in response to monitoring results in the manner required under Project Certificate No. 5 as well as the Adaptive Management Plan jointly agreed to with the QIA. Further details on this approach are set out in the next section.

Key Reference Documentation:

- FEIS Addendum (see each Technical Supporting Document for assessment methodology particular to that topic), NIRB Registry No. 320619.
- Summary of Significance Considerations Phase 2 Proposal, filed December 18, 2020.
- Hearing Transcript Vol. 2, p. 380, lines 3-15, NIRB Registry No. 327560.

3.5 Mitigation and Monitoring

349. In order to ensure that mitigations are effectively implemented, effects predictions are appropriately monitored and should unanticipated effects occur, adaptive management responses occur in a timely fashion, Baffinland has developed a comprehensive Environmental Management System (**EMS**). The EMS for Phase 2 includes dozens of Environmental Management Plans (EMPs) that will be built on to reflect commitments provided to various Intervenor through the NIRB administered reconsideration process, as well as the provisions for enhanced Inuit and community involvement in the Mary River Project, as provided for under the ICA.
350. As part of the Phase 2 FEIS Addendum (Technical Supporting Document 28 – Management and Monitoring Plans), Baffinland submitted its EMPs and summaries of required Phase 2 modifications for review by Intervenor. Following several rounds of information requests and technical comments, Baffinland submitted revised draft EMPs for Phase 2 in May 2019. Baffinland has continued to update its EMPs as requested by Intervenor, and is working towards submitting final drafts of all EMPs within 6 months of a positive decision from the Minister.

351. The list of EMPs requiring updates includes (note the list of plans is numbered for reference as per the Draft Adaptive Management Plan):

3.1 Construction, Operation, Reclamation and Closure

- 3.1.1 *Environmental Protection Plan (NIRB Registry No. 324796 to 324797)*
- 3.1.2 *Interim Closure and Reclamation Plan (NIRB Registry No. 324735 to 324739)*
- 3.1.3 *Borrow Pit and Quarry Management Plan (NIRB Registry No. 3324793 to 324795)*
- 3.1.4 *Explosives Management Plan (NIRB Registry No. 324932)*

3.2 Water Use and Management

- 3.2.1 *Fresh Water Supply, Sewage and Wastewater Management Plan (NIRB Registry No. 324798 to 324803)*
- 3.2.2 *Snow Management Plan (NIRB Registry No. 324936 to 324937)*
- 3.2.3 *Aquatics Effects Monitoring Plan (NIRB Registry No. 324821 to 324827)*

3.3 Waste Management

- 3.3.1 *Waste Management Plan (NIRB Registry No. 324805)*
- 3.3.2 *Hazardous Materials and Hazardous Waste Management Plan (NIRB Registry No. 324804)*
- 3.3.3 *Phase 1 Waste Rock Management Plan (NIRB Registry No. 324806)*
- 3.3.4 *Interim Waste Rock Management Plan (NIRB Registry No. 324927)*
- 3.3.5 *Life of Mine Waste Rock Management Plan (NIRB Registry No. 324807 to 324809)*
- 3.3.6 *Landfill Maintenance and Operations Manual (NIRB Registry No. 320617)*

3.4 Health, Safety, Emergency Response and Contingency

- 3.4.1 *Health and Safety Management Plan (NIRB Registry No. 324942)*
- 3.4.2 *Emergency Response Plan (NIRB Registry No. 324810)*
- 3.4.3 *Spill Contingency Plan (NIRB Registry No. 324820)*
- 3.4.4 *Oil Pollution Emergency Plan – Milne Inlet (NIRB Registry No. 320613)*
- 3.4.5 *Railway Emergency Response Plan (NIRB Registry No. 324933)*
- 3.4.6 *Polar Bear Safety Plan (NIRB Registry No. 320627)*
- 3.4.7 *Spill at Sea Response Plan (NIRB Registry No. 326509)*
- 3.4.8 *Metal and Diamond Mining Effluent Regulations Emergency Response Plan (NIRB Registry No. 320628)*

3.5 Biophysical and Atmospheric Environment

- 3.5.1 *Surface Water and Aquatic Ecosystems Management Plan (NIRB Registry No. 324906)*
- 3.5.2 *Terrestrial Environment Mitigation and Monitoring Plan (NIRB Registry No. 324939)*
- 3.5.3 *Shipping and Marine Wildlife Management Plan (NIRB Registry No. 325032)*
- 3.5.4 *Marine Monitoring Plan (NIRB Registry No. 320615)*
- 3.5.5 *Air Quality and Noise Abatement Management Plan (NIRB Registry No. 324929 to 324930)*

3.6 Socio-Economic

- 3.6.1 *Socio-economic Monitoring Plan NIRB Registry No. (324941)*

3.6.2 Community and Stakeholder Engagement Plan (NIRB Registry No. 324938)

3.6.3 Human Resources Management Plan (NIRB Registry No. 320616)

3.6.4 Cultural Heritage Resource Protection Plan (NIRB Registry No. 324931)

3.6.5 Inuit Human Resources Strategy Procedure (NIRB Registry No. 320617)

3.6.6 Inuit Procurement and Contracting Strategy (NIRB Registry No. 320617)

3.7 Transportation

3.7.1 Roads Management Plan (NIRB Registry No. 324935)

3.7.2 Railway Operation and Maintenance Plan (NIRB Registry No. 324934)

352. The following constitutes a list of all of the new plans for Phase 2:

- Dock Construction Environmental Management Plan
- Railway Operation and Maintenance Plan
- Railway Emergency Response Plan
- Adaptive Management Plan
- Culture, Resources and Land Use Monitoring Program
- IQ Management Framework

3.5.1 Inuit Involvement in Project Monitoring

353. Baffinland's EMS, which incorporates all of these plans, is a comprehensive system designed to monitor environmental performance, mitigate for Project-related effects, and allow for continuous improvement. Importantly, as part of Phase 2, Baffinland will be formalizing the integration of IQ across the EMS with the direction outlined in Baffinland's newly developed IQ Management Framework, as well as the QIA-administered systems negotiated through the ICA, including the Inuit Stewardship Plan.

354. The structures agreed under the Inuit Certainty Agreement and committed to in the NIRB process will enhance the existing Inuit involvement in project monitoring. As Baffinland confirmed during the public hearings, the Company has already made great efforts to improve Inuit involvement in monitoring required under the Project Certificate during current operations:

But as for Inuit involvement in monitoring, that has always been an important component of our project. We consult with the Mittimatalik Hunters and Trappers Organization before each field season to describe our monitoring programs and get their input. Mittimatalik Hunters and Trappers Organization is also part of the marine environment working group and has always provided important insights into our monitoring planning and interpretation and evaluation of the outcomes.

In 2019, the last shipping season when we were able to have Inuit working at the project, 50 percent of our marine mammal monitoring programs were staffed by Inuit.

With Phase 2, Inuit involvement and monitoring across the project will be strengthened by the Inuit Stewardship Plan, which provides for Inuit-led monitoring. So that is monitoring that Baffinland funds but is entirely driven by Inuit, by the Inuit committees with administrative support from the Qikiqtani Inuit Association.

So we think this combined effort of Baffinland-led programs that have a strong inclusion of Inuit and the design and execution, as well as the Inuit Stewardship Plan, where Inuit are leading the monitoring in areas that are most important to them.

We think that's quite unparalleled. We think that's a really progressive approach to monitoring, and -- and, honestly, it's the way it should be, and we think it makes the overall Phase 2 proposal -- it's going to lead the way in this area. So we're very happy with what we've been able to put forward, and we think it's going to put Inuit at the forefront of understanding how this project and its effects are affecting Inuit.¹⁷³

355. The Inuit Stewardship Plan is based on two separate but linked streams:

- The Culture, Resources and Land Use (CRLU) Stream. This stream of monitoring focusses on issues and monitoring activities related to Inuit use of the land and harvesting, conducted through a Culture, Resources and Land Use Monitoring Program overseen by the Inuit Committee.
- The Social Stream. This stream of monitoring focusses on issues and monitoring activities related to changes in community life, conducted through a Community Action Research Team and overseen by the Inuit Social Oversight Committee. One area of focus will be Inuit food sources, food security and food sharing.

356. The Inuit Stewardship Plan is a Project management plan authored by the QIA, with input from a variety of parties including: the Inuit Committee and the Inuit Social Oversight Committee for the Mary River Project, Impacted Communities, and Baffinland. Inuit and the QIA will manage Inuit monitoring interests in the Project.

357. The Inuit Stewardship Plan will detail the ways Inuit will monitor the Project over the life of the mine, and will describe how Inuit-led monitoring activities tie into the adaptive management system and other management, mitigation and monitoring plans. It will also detail how Inuit-led monitoring will relate to the protection and promotion of Inuit rights defined under the Nunavut Agreement and described under legal agreements with Baffinland related to management and stewardship of Inuit owned lands and resources. In short, the concept of community-based monitoring will be intrinsically integrated into the development and operation of the Inuit Stewardship Plan, and by association, the Mary River Project. Baffinland has agreed to contribute \$9 million per year for the first three years after approval, reduced to \$8 million per year thereafter to the QIA to implement the IIBA, which will include all of the ICA commitments, and manage the tasks they are responsible for under the agreement.

¹⁷³ Transcript, Vol. 2, 261-263

358. Under Phase 2 Baffinland will continue to provide up to \$200,000 annually to support community-based monitoring proposed by the community of Pond Inlet. This stream of community-based monitoring is guaranteed under the Mary River IIBA but separate from the programs provided for under the ISP. Regardless, this program will maintain the potential to influence Baffinland's own monitoring programs and mitigation strategies.

3.6 Adaptive Management

359. Our commitment to the Adaptive Management Plan will provide confidence that, based on ongoing monitoring and assessment, additional measures will be taken to avoid or mitigate effects where necessary.
360. Phase 2 is a very unique project in that it is adjustable, meaning project component activities can be adjusted in response to Inuit and Baffinland monitoring results.¹⁷⁴
361. For example, should Baffinland be permitted under the Project Certificate to use 168 ore carriers, that does not mean that volume of shipping would necessarily happen. Baffinland will be guided by the Inuit Stewardship and Adaptive Management Plan continuously to assess the operations. If shipping is causing an unanticipated effect, Baffinland can modify its vessel mix, use less vessels, avoid shipping in specific periods, or suspend shipping all together, should it be warranted. Similarly, if the rail operation is causing an unanticipated effect, Baffinland could modify the railway embankments, train schedule, number and length of trains used or suspend operations during sensitive periods, should it be warranted. As confirmed by Baffinland during the public hearing in response to questions from the Clyde River Hunters and Trappers Association, adaptive management includes actions up to and including mine shut down should the circumstances require.¹⁷⁵ The potential actions that would be taken will all be clearly set out in an Adaptive Management Plan agreed between QIA and Baffinland. The Project is very adjustable and will be adjusted as needed based on monitoring and Inuit feedback.¹⁷⁶
362. Because of the importance of this commitment by Baffinland and QIA, Baffinland sets out the first seven paragraphs of the ICA schedule on the Inuit Stewardship Plan and Inuit Committees as follows, which provides context and further details on this approach, and which (together with a robust Project Certificate) will ensure that Baffinland continues to improve the incorporation of Inuit views and values during Phase 2 operations.¹⁷⁷

1.1 Inuit Stewardship Plan for the Mary River Project

¹⁷⁴ Government monitoring, such as regional caribou monitoring carried out by the Government of Nunavut and monitoring carried out by DFO, will also occur in parallel with Baffinland and Inuit led programs.

¹⁷⁵ Transcript, Vol. 13, 2440-2442

¹⁷⁶ Transcript, Vol. 17, 3178

¹⁷⁷ NIRB Registry No. 332869

1.1.1 Nothing is of higher importance to Inuit than the ability to conduct independent, proactive monitoring of the Project for the purpose of mitigating adverse impacts and enhancing beneficial outcomes in a manner that captures the direct experiences of Inuit in impacted communities. This monitoring would be in addition to monitoring mandated by regulatory bodies and instruments including, but not limited to, any monitoring plans they prescribe, adding an Inuit-led, IQ-enriched form of monitoring to the Project that is in keeping with the expectations and rights of Inuit.

1.1.2 The Inuit Stewardship Plan (ISP) is a Project management plan that will be authored by QIA, with input from the Inuit Committee and the Inuit Social Oversight Committee for the Mary River Project (the Project), impacted communities, and Baffinland and implemented by Inuit. The ISP will be presented to Baffinland for feedback prior to QIA's finalization and approval. Baffinland will be responsible to fund the ISP for the life of the Mary River Project. Funding requirements to be laid out in Schedule 31.

1.1.3 Inuit and Inuit institutions will responsibly manage Inuit monitoring interests in the Project. The ISP will detail the ways Inuit will monitor the Project over the life of the mine. The ISP will describe how Inuit monitoring activities tie into the adaptive management system and other management, mitigation, and monitoring plans, and, how Inuit monitoring will relate to the protection and promotion of Inuit rights defined under the Nunavut Agreement and described under legal agreements with Baffinland related to management and stewardship of Inuit owned lands and resources. It is understood by the parties that the concept of community based monitoring will be intrinsically integrated into the development and operation of the ISP. The ISP will embrace the results from but not take over from Baffinland's existing commitment to Inuit communities to fund specific community-defined community based monitoring activities, as per existing IIBA provision 17.8.2.

1.1.4 The ISP will be a primary mechanism through which Inuit actively manage and report on impacts related to the Mary River Project. Therefore, the ISP is a framework for Inuit-led monitoring of impacts and changes within communities and on the land, waters and ice as a result of the Project. As an Inuit-led Project management plan, the ISP will embed a "boots on the ground" approach to monitoring whereby Inuit will be hired and trained as professional monitors for monitoring under the ISP. Through the ISP, Inuit will govern the use of Inuit knowledge and observations regarding the Project.

1.1.5 The ISP will be constructed around two separates but linked streams:

(a) Culture, Resources and Land Use (CRLU) Stream – Issues and monitoring activities related to Inuit use of the land and harvesting, conducted through a Culture, Resources and Land Use Monitoring Program and overseen by the Inuit Committee; and

(b) Social Stream – Issues and monitoring activities related to changes in community life, conducted through a Community Action Research Team (CART) and overseen by the Inuit Social Oversight Committee (ISOC). A focal point but not the entirety of the social stream will be Inuit food sources, food security, and food sharing.

1.1.6 Each stream requires unique oversight, monitoring and information management systems. This does not mean that “on the land” and “in the communities” issues do not interact. For example, food security is intrinsically associated with harvesting ability and success, distribution systems, transmission of cultural knowledge, and local infrastructure to support food harvesting and processing. The two streams of the ISP will naturally converse with one another to inform Inuit research, monitoring, recommendations and decisions. As depicted in Figure 1, determination of appropriate research and sharing of results between streams is inter-linked, and decisions and recommendations are only made once the two streams are combined.

1.1.7 Both the CRLU Stream and the Social Stream will have annual work plans to define activities and required resources, as determined by the Inuit parties for the life of the Project.

363. The importance of these structures and programs is that Baffinland has committed to ongoing monitoring and assessment of impacts that is led-by and in collaboration with Inuit designated from the Impacted Communities. These structures will ensure that measures to avoid and mitigate significant adverse impacts and to enhance beneficial outcomes will be considered through an Inuit lens and are core to the adaptive management of the Project.
364. The QIA and Baffinland have already formed an Adaptive Management Plan Working Group to facilitate the completion of the final Adaptive Management Plan, as well as the integration of adaptive management components into EMPs selected by QIA to require their approval. Once the Plan is approved, the working group will remain and can be convened to support the implementation of the Plan. An initial draft Adaptive Management Plan is found in Schedule ID 2, Appendix ID 2(1) of the ICA.¹⁷⁸
365. Importantly, the Adaptive Management Plan will outline the criteria for implementing adaptive management objectives, indicators, thresholds, and responses (OITRS) across Baffinland’s EMS, with QIA (Inuit) approval over EMPs of key interest and importance to Inuit, as identified in the Adaptive Management Plan. The Adaptive Management Plan will be revised to reflect the results of the updated CRLU Assessment, the Pond Inlet Country Food Baseline Report, as well as input from the Inuit Committee and Inuit Social Oversight Committee.
366. The Adaptive Management Plan is designed to produce responses appropriate to the level of change encountered, accommodating a wide range of possible events or occurrences. In addition, reasonable adaptive management responses will be applied to address materially adverse effects, even when it is not possible to determine with complete certainty the degree to which the Project is contributing to the total effect observed.

¹⁷⁸ NIRB Registry No. 331607.

367. The monitoring and adaptive management commitments Baffinland has made provide Inuit with a level of involvement and input in monitoring and adaptive management that permits Inuit to directly influence key Project decisions. Through the Adaptive Management Plan, Inuit will have direct input into when and how adaptive management responses are implemented.
368. As has been mentioned numerous times, the Adaptive Management Plan is subject to joint approval between QIA and Baffinland. The Adaptive Management Plan will also be submitted to NIRB for review and comment, which will ensure that interested parties will have an opportunity to provide comments and advice on the OITRs included.
369. Baffinland provided examples during the public hearing as to how the Adaptive Management Plan would function in practice:

We would reduce ships if there were impacts to narwhal that were shown through either Inuit-led monitoring or Baffinland studies. That mitigation measure will be incorporated and -- into our final adaptive management plan.

And how we would deal with this is: Within the adaptive management plan we are developing both western scientific-led -- and there will be Inuit-led -- low-, medium-, and high-risk thresholds. Those thresholds will identify things that happened in the environment, but if we meet those specific thresholds, an action will be required from Baffinland. The low-risk threshold is meant to be that early warning system which can identify before impacts occur, and medium and high-risk thresholds will have identified actions that Baffinland will have to take to reduce or eliminate the impact that's occurring.

*One of those actions at a high- risk threshold would be reducing our shipping activities. An example of where this has gone into practice already is additional mitigation measures that we've added to our shipping activities by introducing transit restrictions in response to Inuit observations that in 2018 there were low narwhal numbers in Pond Inlet. We implemented additional mitigations and have been monitoring the effect of that mitigation measure since.*¹⁷⁹

370. Adaptive management will also continue to be informed by the environmental and socio-economic working groups, as relevant to each of their areas of focus. Through the Phase 2 review Baffinland has committed to formalize and strengthen the Workings Group's ability to develop consensus-based recommendations, which will extend to the effective implementation of our monitoring programs, and the implementation of adaptive management strategies, when needed.

¹⁷⁹ Transcript, Vol. 2, 266-267

371. Baffinland has previously submitted process flow diagrams to show how issues and recommendations that develop in the working groups will fit within the systems agreed to with QIA, which is designed to ensure an Inuit lens is applied to decision making that affects Inuit.¹⁸⁰ Whether an adaptive mitigation is already provided for in an existing management plan, or a new mitigation is proposed, agreement with the Inuit Committee will be required. During the NIRB process, in June 2020, Baffinland agreed with the QIA, under the ICA, to “ensure Inuit participation in adaptive management, monitoring, and environmental decision-making”. In signing this agreement, it was determined by QIA and Baffinland that any residual perception the QIA held with respect to a lack of integration of Inuit into the FEIS could in fact be addressed, following the approval of the Project, through the implementation of exemplary commitments, contained within the ICA and made by Baffinland to ensure Inuit perspectives are deeply embedded into monitoring and management of the Project.

372. Respecting monitoring, under Schedule ID1 (Inuit Committee and Inuit Stewardship Program) of the ICA, both Parties agreed:

“1.1.1 Nothing is of higher importance to Inuit than the ability to conduct independent, proactive monitoring of the Project for the purpose of mitigating adverse impacts and enhancing beneficial outcomes in a manner that captures the direct experiences of Inuit in impacted communities. This monitoring would be in addition to monitoring mandated by regulatory bodies and instruments including, but not limited to, any monitoring plans they prescribe, adding an Inuit-led, IQ-enriched form of monitoring to the Project that is in keeping with the expectations and rights of Inuit.”

373. The provisions of Schedule ID1 provide details of independent Inuit monitoring and Inuit development of the Inuit Stewardship Plan. The Inuit Stewardship Plan is a “Project management plan that will be authored by the QIA . . . and implemented by Inuit” (Schedule ID1, Section 1.1.2).

374. Section 1.1.3 of Schedule ID1 specifies that:

“The ISP will describe how Inuit monitoring activities tie into the adaptive management system and other management, mitigation, and monitoring plans, and, how Inuit monitoring will relate to the protection and promotion of Inuit rights defined under the Nunavut Agreement and described under legal agreements with Baffinland related to management and stewardship of Inuit owned lands and resources.”

375. The ICA provides extensive details of how Inuit participation is ensured:

- Schedule ID1 – Inuit Committee and Inuit Stewardship Program
- Schedule ID2 – Adaptive Management Plans Approval
- Schedule ID3 – Social Monitoring Framework

¹⁸⁰ See Baffinland’s Post-Hearing Question Responses of March 22, 2021, at pages 318-325, NIRB Registry No. 334147.

- Schedule ID4 – Culture, Resources and Land Use Monitoring
- Schedule ID6 – Culture, Resource and Land Use Assessment
- Schedule ID7 – Pond Inlet Country Food Baseline

376. The QIA Final Written Statement acknowledges this at page 9:

“The ICA work resulted in proposed structures to strengthen IQ integration and Inuit-led adaptive management, including:

- *an **Inuit Committee** with impacted Inuit community participation to ensure Inuit leadership in environmental decision-making for the project, and to address Inuit concerns about the lack of responsiveness to Inuit concerns in the existing Working Group processes for the marine and terrestrial environments;*
- *an **Inuit-led Adaptive Management Planning process** including Inuit defined triggers (**Inuit Objectives, Indicators, Thresholds and Responses** or OITRs);*
- *a **Culture, Resources and Land Use Study** (CRLU Study) to ensure adequate IQ is available for comparison and use in any adaptive management planning process;*
- *an **Inuit Social Oversight Committee** (ISOC) to ensure Inuit leadership, from the impacted communities, in identifying and measuring the impacts of the Mary River Project on social wellbeing; and*
- *an **Inuit Stewardship Plan** (ISP) developed by QIA and the impacted Inuit communities as a framework for Inuit-led environmental and social impacts monitoring and management.”*

377. These provisions, binding on Baffinland under the ICA and under Project Certificate Terms and Conditions, achieve the objective of ensuring Inuit participation in monitoring and adaptive management decision-making.

378. The Adaptive Management Plan, jointly drafted by the QIA and Baffinland, specifies as follows, in addressing uncertainty, adaptive management, the input of IQ, and the Precautionary Principle:

“This Adaptive Management Plan (AMP) for Baffinland’s Project provides an overview of the management mechanisms established to identify where mitigation measures may not sufficiently address potential adverse effects, and to address uncertainty or conditions that may occur during operations that were not anticipated during the planning phase. A precautionary approach to managing the Project inclusive of this adaptive management plan acknowledges uncertainties exist while developing systems and approaches for responding to changing conditions, with the goal of avoiding adverse effects by taking action before these occur or, at minimum, responding quickly and meaningfully to observed changes that may be partially to wholly attributable to the Project. It is a particularly useful tool in long-term projects, as it

facilitates progressive integration of the collective body of Inuit Qaujimanituqangit, improvements in scientific understanding and advances in mitigation measures.

This structured approach to continual improvement expands on the memo titled “Baffinland Environmental Monitoring, Mitigations and Adaptive Management Overview”, drafted to address the requirements outlined in the Mary River Project Guidelines (the Guidelines, NIRB 2015) and to integrate the various environmental management and monitoring plans into a consistent adaptive management framework.

A key part of Baffinland’s approach to adaptive management is incorporation of community review and feedback; particularly, the incorporation of Inuit Qaujimajatuqangit (IQ) to improve or extend the effectiveness of the Environmental Management System (EMS) for the Project. In recognition of the critical role that IQ and Inuit play in project monitoring and management, the Adaptive Management Plan has been revised to better incorporate roles for QIA and affected Inuit communities. One key revision is that QIA and Baffinland must jointly agree on the Adaptive Management Plan, and specific adaptive management actions included in “sub-plans” – i.e. prescribed adaptive management elements reflected in specified management and monitoring plans, as specified in this AMP. QIA will also play a key role in the direct collection of monitoring information that trigger adaptive management actions where necessary through the Inuit Stewardship Plan. The Inuit Stewardship Plan, a Project Plan developed by and implemented by Inuit, includes mechanisms such as the Culture, Resources and Land Use Monitoring Program and the Social Monitoring Stream. Each of these areas include committees comprised of Inuit from affected communities. The Inuit Stewardship Plan will assist in gathering data, setting thresholds for impacts that are considered to require action under the Adaptive Management Plan, actively monitoring, and gauging the success of these actions. It is recognized and understood finalizing the Adaptive Management Plan requires careful integration of requirements associated with regulatory requirements. A final jointly approved Adaptive Management Plan will ensure these considerations have been appropriately made.” (Jointly Approved Adaptive Management Plan (Draft), Appendix 1 to Schedule ID2 of the ICA)

379. Under ID2, Section 2.2.5, it is agreed that Baffinland and the QIA will agree to joint approval of initial objectives, indicators, thresholds and responses for adaptive management. Section 2.2.7 specifies that the initial objectives, indicators, thresholds and responses “will be subject to later refinement upon collection of IQ, completion of the CRLU Assessment and the Pond Inlet Country Food Baseline, and inputs identified in Section 2.1.8 (the Inuit Stewardship Plan).”

3.7 Adaptive Management and the ICA

3.7.1 Introduction

380. The following is reproduced from Baffinland’s Written Comments of September 10, 2021 because it addresses a number of issues.

381. During the course of the Phase 2 review, parties have raised concerns respecting commitments made by Baffinland under the ICA as a contract between Baffinland and the QIA. The Igloolik Working Group asked, “Baffinland and QIA have said that they want to put Inuit at the driver’s seat of this project when it comes to adaptive management, the stewardship program and other programs within the ICA. If impacts are felt and they require a decision in regards to adaptive management, would Inuit be part of the decision-making, or would they only be advisors to the executive board at Baffinland?” (Vol 14, p. 2676). The following submission is in reply to certain statements made respecting concerns regarding how adaptive management will be implemented during Phase 2, and generally respecting the relationship between the Project Certificate and the ICA.

3.7.2 The Phase 2 commitments made by Baffinland to NIRB are not dependent on the ICA

382. Baffinland has substantially incorporated the commitments under the ICA into its Commitment Table and into its proposed draft Terms and Conditions that would apply to the Phase 2 Project. The ICA mechanisms provide support to the implementation of these commitments, and Baffinland remains committed to the ICA. However, it is important to emphasize that the commitments that have been made by Baffinland in the NIRB process are direct commitments made to NIRB and to all parties, including the communities, independent of the ICA.

383. Some ICA commitments are appropriate for incorporation as additional Terms and Conditions for Phase 2, enforceable under the Project Certificate. It is acknowledged that some ICA commitments intended to mitigate adverse ecosystemic or socioeconomic effects may not be appropriate as Terms and Conditions due for instance to limits on the NIRB’s jurisdiction. However, recognizing the importance of honouring these commitments to the credibility of the Project, Baffinland will report on the status of implementation of such commitments to the NIRB on periodic basis as applicable.

384. Since signing the ICA with QIA, Baffinland has continued to work with communities and make additional commitments during the NIRB process in order to help address their concerns raised through the Phase 2 process. Baffinland intends to continue working closely with the communities on these items, regardless of the status of ICA implementation.

3.7.3 The Phase 2 Project activities are capable of Adaptive Management and Baffinland has made express commitments for implementation

385. Baffinland wishes to emphasize to the NIRB the importance of the commitment to adaptive management in connection with this Project. The AMP has the stated and agreed objective of preventing or reversing impacts that exceed assessment predictions, or that exceed other tiered thresholds established jointly by Inuit and Baffinland, based on IQ and science. In this reply to concerns about uncertainty and about aspects of the operation of the AMP commitments, we will reference the following documents which were filed during the public hearing:

- The ICA which includes, in Schedule A:

- ID 1 – Agreed Terms and Conditions for the Inuit Committee and Inuit Stewardship Program (see also Commitment No. 131, 134, 135, 137, 162, 189, 211, 220, 222, 223, 229, Commitment List, NIRB Registry Doc.# 334537);
- ID 2 – Agreed Terms and Conditions for Adaptive Management Plans Approval (see also Commitment No. 135, Commitment List, NIRB Registry Doc.# 334537); and
- Appendix ID 2(1) – Adaptive Management Plan (Revised Draft) – a jointly approved draft between Baffinland and the Qikiqtani Inuit Association (the “QIA”), in relation to the ICA (see also submission of draft to NIRB Registry for Phase 2 in August 2020);
- The Update (the “Update”) on Adaptive Management Plans for Environmental Management Plans attached as Appendix 12 to the Baffinland Response to Written Questions filed on March 22, 2021 (NIRB Registry No. 334147).

386. Of particular importance is that the Project lends itself to adaptive management. In particular, the shipping activities have been, and can be adjusted with respect to scheduling and timing, vessel speed, vessel numbers, and vessel management to mitigate impacts on narwhal, seals and other marine life. Railway operations can also be adjusted with respect to scheduling and timing, train speed, and train management to mitigate impacts on caribou, caribou migration and other terrestrial wildlife.
387. The initial Mitigation Toolkits for shipping and for railway transportation included with the Update each include the potential for reductions, and for stoppages and suspensions if required for adaptive management. That is to say, Baffinland has agreed to the concept that operations may be directly impacted by implementation of the AMP as a result of Baffinland led or Inuit led monitoring. (See the references below in parts 3(j) and (k) of this Reply).
388. Baffinland expressly recognizes, in the draft AMP, that if environmental assessment predictions or thresholds established jointly under the AMP, based on IQ and science, are exceeded, the shipping or the railway operations may require changes and reductions.
389. As stated by Baffinland in its letter to the Board dated March 22, 2021 at Appendix 12 to the Baffinland Response to Written Questions:

“Despite nuances in processes that may arise, Baffinland believes what is presented demonstrates a precedent-setting commitment to Inuit and ongoing regulatory involvement and oversight in the Project. Should Phase 2 be approved, Baffinland will continue to work with all Parties to finalize an implementation plan for the Commitments related to Adaptive Management that it has put before the Board.”

3.7.4 Adaptive Management will be jointly managed together with Inuit-led structures and committees

390. The AMP is to be jointly agreed to by QIA and Baffinland. The ICA provides for Inuit-led decision-making by establishing formal responsibilities for the Inuit Stewardship Plan (“ISP”), the Inuit Committee (“IC”) and the Inuit Social Oversight Committee (“ISOC”) directly in the AMP.

391. The QIA's role in the adaptive management process will at all times be influenced by the advice of the Inuit Committees. Baffinland and QIA will ultimately finalize and modify the AMP, while acting on the advice of the Inuit Committees. The Inuit Committees will have a direct role in establishing designated thresholds of acceptable change. These thresholds will be informed by existing environmental assessment predictions, outcomes of additional CRLU assessments, the implementation of both Baffinland led (e.g. Marine Monitoring Program (MMP)) and Inuit led monitoring programs (ISP), new and relevant literature as it is made available, and other sources of IQ.
392. To accomplish the above, QIA and Baffinland have created an AMP working group to oversee the advancement of all activities associated with coming to joint agreement on the AMP. Once the AMP is agreed to between QIA and Baffinland, and approved by any applicable regulatory authority as required, the AMP working group will remain as a "standing working group" that can be convened to support the implementation of the AMP. This working group will be comprised of individuals with decision making authority for QIA and Baffinland, to enable effective working relationships and AMP development.
393. It is also important to note that the AMP and processes apply to social and economic factors as well as environmental issues, through the ISP, and the ISOC. (See the ICA and ID 3 – Social Monitoring Framework, and the draft AMP at Part 3.6.
- 3.7.5 The existing Working Groups established under the Project Certificate will continue to be engaged
394. Baffinland has explained improvements to the existing Working Groups as well as the linkage between to the Inuit Committees and the Working Groups in a previous section above.
- 3.7.6 The ICA provides for independent, proactive Inuit-led monitoring
395. There will be two streams of Inuit-led monitoring:
- Cultural & Environmental – through the CRLU Monitoring Program (see the ICA, ID 1 at Section 1.1.5(a)); and
 - Socio-economic – through the ISOC and the Community Action Research Team ("CART") (see the ICA, ID 1 at Section 1.1.5(b)).
396. Monitoring led by Inuit will be independent of, and in addition to, the monitoring required and carried out by Baffinland, which will also continue to directly involve Inuit in the planning, implementation and interpretation, along with its third party scientists.
- 3.7.7 Objectives, Indicators, Thresholds and Responses will be jointly determined and will be based on IQ, community perspectives (CRLU), and science
397. IQ and community involvement is also a key foundation of the AMP (see Part 1.5, page 12 of the AMP entitled "The Role of IQ and Community Involvement in Adaptive Management").

398. Progress on development of OITRs, TARPs and Mitigation Toolkits as at March 2021 is summarized in Appendix 12 to the Baffinland Response to Written Questions (NIRB Registry No. 334147).
- OITR = Objectives, Indicators, Thresholds and Responses.
 - TARPS = Threshold, Action and Response Plans.
 - Mitigation Toolkits identify potential mitigation responses.
399. For example, see the TARPS and Mitigation Toolkits attached as part of the Update at Appendix 12 to the Baffinland Response to Written Questions filed on March 22, 2021. This includes TARPs and Mitigation Toolkits for:
- the marine environment (Marine Monitoring Program (MMP));
 - the terrestrial environment (Terrestrial Environment Mitigation and Monitoring Plan (TEMMP));
 - air quality (Air Quality and Noise Abatement Management Plan (AQNAMP)); and
 - aquatic effects (Aquatic Effects Monitoring Program (AEMP)).
400. The Mitigation Toolkits are used to develop pre-defined actions that are jointly agreed to where an OITR has been exceeded. This will mean that there is no delay in Baffinland's response to an exceedance of a pre-defined unacceptable impact. The Mitigation Toolkits present a range of potential responses, including (as an example) Moderate or High Action responses included in the Marine Mammal Trigger Action Response Table such as ceasing or suspending shipping activities for a season or a component of a season (i.e. shoulder seasons).
- 3.7.8 The Precautionary Principle will apply
401. See the ICA at Sections 2.1.11, 2.1.12 and 2.1.13. The precautionary approach is a key principle of the draft AMP (see the AMP at pages 15, 18, 21, etc.).
- 3.7.9 Baffinland is responsible for funding the ISP, IC and ISOC and Inuit monitoring for the life of the Project
402. See the ICA at Sections 5.3 to 5.6, ID 1 at Section 1.4.1, and ID 2 at Section 2.3.
- 3.7.10 The AMP recognizes regulatory authorities – but it may be more protective than regulatory standards
403. While the ICA is a contractual agreement between Baffinland and the QIA, it is important to remember that:
- the Agreement confirms that it does not replace and, in fact, recognizes and respects the existing regulatory authorities such as the DFO, the Government of Nunavut, and the Nunavut Impact Review Board (see the ICA, ID 2 at Section 2.1.8); and

- Per ID 34.1.6 of the ICA, it is understood and acknowledged by both Baffinland and QIA that Baffinland may be required by specific regulatory authority direction to make further changes to agreed plans (or plans that have been subject to an arbitrator's determination) following submission to regulatory authorities and that final approval of such plans would be subject to approval by the relevant regulatory body (i.e. NIRB, NWB, etc.). Furthermore, in the event of a conflict between agreed upon objectives, including Inuit objectives, and requirements related to various regulatory processes and approvals, the parties will work together to determine if it is possible to identify reasonable revisions to the plans to reconcile such conflict. Requirements of plans agreed by the parties or determined by arbitration will continue to apply and be implemented even if requirements agreed or determined by arbitration are more stringent than the regulatory requirements.

404. Section 2.1.10 of the ICA states:

"2.1.10 Baffinland recognizes and agrees that managing and monitoring the Mary River Project is not limited to achievement of applicable guidelines, and standards; applicable guidelines and standards may form a basis from which more protective and Inuit informed site-specific criteria may be developed and implemented."

405. Baffinland has proposed that the commitments to monitoring and adaptive management under the ICA and the AMP in particular, should be included as terms and conditions under the Project Certificate.

3.7.11 Adaptive Management will be included in individual environmental and socio-economic management plans

406. See the ICA, ID 2 at Sections 2.1.17, 2.2.9 and 2.2.10. Each of the 30 management plans (see the AMP at Part 2.1) will be updated to include adaptive management. See Part 3 of the AMP on Adaptive Management Integration, and in particular, Part 3.5 on plans related to Biophysical and Atmospheric Environment, and Part 3.6 on plans related to Socio-economic issues.

3.7.12 Adaptive Management addresses the issue of uncertainty in standard environmental assessment

407. Section 103 of the NuPPAA lists the factors that the Board must take into account in this review of the Phase 2 Proposal. Those factors include ss. 103(1)(h) and (i):

"103 (1) In conducting a review of a project, the Board must take into account the following factors:

(h) the measures, including those proposed by the proponent, that should be taken to

(i) avoid and mitigate adverse ecosystemic and socio-economic impacts, including contingency plans."

408. For the Phase 2 Project, Baffinland has committed to extensive measures to avoid and mitigate impacts. And, in addition to all of the basic design measures and operational plans to avoid or mitigate impacts, Baffinland has committed to the AMP as a further measure to avoid and mitigate adverse impacts.
409. Baffinland and the expert consultants responsible for authoring the Phase 2 environmental assessment have acknowledged a degree of uncertainty in the environmental assessment predictions, which is standard and expected in the practice of Environmental Assessment. Intervenor have also raised their own concerns.
410. In response to those concerns, the AMP and the commitments to extensive monitoring against jointly agreed indicators and thresholds, and response actions identified in Mitigation Toolkits under that Plan will act as a backstop. The jointly agreed thresholds under the AMP will allow for further actions to be taken if impact predictions or Inuit based objectives are exceeded.
411. The jointly agreed thresholds under the AMP will be set to reflect low, moderate and high risk levels. The intention of this tiered system is to have low risk thresholds set at levels below impact predictions and other measures of unacceptable change to Inuit, allowing Baffinland an opportunity to implement agreed upon actions and prevent greater effects (moderate and high) from occurring.
412. As already noted, activities such as shipping and railway transportation are activities which inherently lend themselves to modification with scheduling and timing, speeds, and convoy management as part of Mitigation Toolkits for adaptive management.
413. As stated in the March 22, 2021 letter at Appendix 12 to the Baffinland Response to Written Questions:
- “Through its work with QIA on the priority EMPs, Baffinland has received feedback regarding the development of the moderate and high action level thresholds and responses, specifically QIAs need to provide greater certainty to Inuit that the AMP process committed to under Schedule 2 of the ICA will be meaningful to Inuit. To that end, Baffinland provided the QIA with a ‘pool’ of proposed mitigations that could advance the important discussions that must take place with Inuit, and which could be implemented should respective moderate or high action level thresholds be exceeded. Prior to finalization, these ‘pools’ of mitigations, more formally referred to by Baffinland as Moderate and High Action Toolkits, are expected to be subject to further review and appropriate categorisation (moderate versus high, or both at different scales). The development of these action toolkits required extensive internal consultation, as well as approval by the Baffinland executive team, and Baffinland emphasizes they represent a firm and material commitment to take action in the event it is deemed necessary under the Adaptive Management Plan. The next step is to discuss with Inuit the way in which they are to be implemented based on the specific situation, observed impact, potential stressor and feedback received through the ISP framework, including recommendations from the Inuit Committees.”*

414. Baffinland's commitments go well beyond the general approach to environmental impact assessment and project approval. Uncertainty has been reduced or eliminated by the commitment to the AMP. Again, the commitment under the AMP is to monitor impacts intensively, to establish indicators and thresholds against which to measure the impacts, and to take action by mandating additional mitigation measures from the Mitigation Toolkits to ensure that impacts are avoided or mitigated.

Key Reference Documentation:

- ICA, Schedule A, ID 2 and Appendix ID 2(1) Draft Adaptive Management Plan, NIRB Registry No. 331607;
- Baffinland's Post-Hearing Question Responses of March 22, 2021, at pages 275-309, NIRB Registry No. 334147;
- Baffinland's Written Comments of September 10, 2021, NIRB Registry No. 336778.

3.8 Current Status of Issues Resolution/ Disposition Table

415. Since Intervenor filed their final written submissions in September 2019, Baffinland has worked diligently and with great success to resolve outstanding issues. Since the initial exchange of final written submissions and responses, Intervenor have been afforded multiple additional opportunities to submit supplemental technical comments, and questions, both in writing and orally at extended public hearing events. Those submissions are listed in Appendix D with reference to NIRB registry numbers, but key submissions included:

1. Supplemental Materials filed on January 6, 2020¹⁸¹, which included the following:
 - a. Updated Project Scope with Clarification on Operational Flexibility;
 - b. Commitments and Terms and Conditions Following the Public Hearings;
 - c. Response from Baffinland to QIA Suggested Terms and Conditions for Project Certificate 005;
 - d. Responses to Questions Deferred During the Public Hearings;
 - e. Community Engagement Plan; and
 - f. Comment period submission summary.
2. Response to Updated Technical Comments on February 22, 2020.¹⁸²
 - a. Updated technical comment responses
 - b. Supporting technical memos
 - c. 2019 marine monitoring update
 - d. Ballast water modelling
 - e. Updates to the summary of Baffinland commitments
 - f. Engagement memos
 - g. Update on engagement with communities
 - h. Update on engagement with QIA
3. Additional Documents Released Following the September 2020 Technical Meeting on September 30, 2020¹⁸³ and October 16, 2020¹⁸⁴
 - a. Memo on operational flexibility
 - b. Memo on black carbon mitigation feasibility

¹⁸¹ See NIRB Registry No. 327956-327957

¹⁸² See NIRB Registry No. 328634-328635

¹⁸³ See NIRB Registry No. 331634

¹⁸⁴ See NIRB Registry No. 332176

- c. Memo on list of participants in consultations
 - d. Revised Draft Marine Environment Working Group Terms of Reference (proxy for Terrestrial Environment Working Group Terms of Reference)
 - e. Memo on potential effects of fuel spill on polar bear in the RSA
 - f. Rail alignment maps with cut/fill profiles
 - g. Summary of January 2020 EA Workshop (unverified)
4. Follow up to Requests Issued by the NIRB in the PHC Decision Report on December 21, 2020
- a. Update on Inuit and Community Engagement¹⁸⁵, which included:
 - i. Community Engagement Update
 - ii. ICA Implementation Update
 - b. Summary of Significance Considerations¹⁸⁶, which included:
 - i. Key document list
 - ii. Summary of residual effects
 - c. Coordination of Socio-economic Monitoring Programs¹⁸⁷, which included:
 - i. Mary River Socio-economic Monitoring Working Group Terms of Reference.
5. Reference Guide to Key Topics, December 18, 2020, NIRB Registry No. 332182;
6. Technical Reviews of Ocean North Draft Passive Acoustic Monitoring of Underwater Radiated Noise from Ships in Eclipse Sound, Nunavut (2018-2019) on January 19, 2021¹⁸⁸, which included:
- a. JASCO Review of Jones 2020 Draft Report: Passive Acoustic Monitoring of Underwater Radiated Noise from Ships in Eclipse Sound, Nunavut (2018-2019).
 - b. Golder Review of Jones 2020 Draft Report: Passive Acoustic Monitoring of Underwater Radiated Noise from Ships in Eclipse Sound, Nunavut (2018-2019).
7. Review of Open Oil Financial Analysis submitted by Oceans North on January 26, 2021.¹⁸⁹
8. Mary River Project Economics Explained on February 3, 2021.¹⁹⁰

¹⁸⁵ NIRB Registry No. 332176.

¹⁸⁶ NIRB Registry No. 332183.

¹⁸⁷ NIRB Registry No. 332181.

¹⁸⁸ NIRB Registry No. 332558.

¹⁸⁹ NIRB Registry No. 332732.

¹⁹⁰ NIRB Registry No. 332873.

9. Post-Hearing Responses to Questions from Intervenors and the NIRB on March 23, 2021.¹⁹¹
10. Revised Dust Summary Report on April 6, 2021.¹⁹²
11. Technical Memo: Preliminary Summary of 2020 Narwhal Monitoring Program on April 8, 2021.¹⁹³
12. Updated Engagement Summary, Updated Commitment List, and Revised Draft Project Certificate 005 on April 9, 2021.¹⁹⁴
13. Response to Reviewer Comments on Baffinland's Preliminary Summary of 2020 Narwhal Monitoring Program on June 17, 2021.¹⁹⁵
14. Written Comments on September 13, 2021 (note Baffinland was requested to provide its response in writing to the evidence tendered as of that date, in lieu of the opportunity for Baffinland to speak to this orally during the public hearing as reflected in NIRB's original agenda. It also is noted that the public hearing agenda never indicated there would be an opportunity for Intervenors to provide further comments or ask questions, but the Board granted an additional opportunity to some Intervenors to provide additional submissions in response).¹⁹⁶
 - a. Technical Memo: Update on the Status of *Marenzelleria* Species on Baffin Island, on September 13, 2021.¹⁹⁷
15. Memo: Update on the Preliminary Summary of 2020 Marine Mammal Monitoring and 2021 Adaptive Management on September 13, 2021.¹⁹⁸
16. Updated Commitment List and Disposition Table on October 26, 2021.¹⁹⁹
17. Community Engagement Update on October 26, 2021.²⁰⁰

¹⁹¹ NIRB Registry No. 334147.

¹⁹² NIRB Registry No. 334330.

¹⁹³ NIRB Registry No. 334440.

¹⁹⁴ NIRB Registry No. 334460.

¹⁹⁵ NIRB Registry No. 335788.

¹⁹⁶ NIRB Registry No. 336778.

¹⁹⁷ NIRB Registry No. 336782.

¹⁹⁸ NIRB Registry No. 336783.

¹⁹⁹ NIRB Registry No. 337148.

²⁰⁰ NIRB Registry No. 337147.

18. Agreement in Principle for Mary River Research Contribution Agreement & Data Sharing Agreement, on November 4, 2021.²⁰¹
19. Response to Espoo Materials, December 18, 2021.²⁰²
416. Baffinland translated well over 50²⁰³ key Phase 2 Proposal documents into Inuktitut. This number does not include the translation of all correspondence with community groups.²⁰⁴
417. Of the 196 final written submissions received between September 2019 and February 2020, Baffinland is pleased to report that 175 of those submissions have been resolved (in whole or in part) or resolved to the extent appropriate for the environmental assessment stage by deferral to subsequent permitting processes (i.e., water licensing, Fisheries Act authorizations, etc.). This represents a nearly 90% rate of resolution of the final written submissions received.
418. Of the 22 final written submissions that remain outstanding, 20 belong to two Intervenor, the MHTO and the WWF, and in nearly all cases Baffinland has extended commitments specifically designed to resolve the outstanding issues. It is acknowledged that for these items, the Intervenor that raised such issues may consider the issues outstanding despite Baffinland's commitments, however, Baffinland is of the view that a reasonable path forward has been presented that can support the Board in making a positive determination with respect to Phase 2.
419. Baffinland has extended unique commitments to resolve issues raised by Intervenor and communities through the reconsideration process. Many of these commitments have also been reflected in Baffinland's revised draft Project Certificate 005.
420. Baffinland appreciates the work of all Intervenor in their thorough review of the Phase 2 Proposal, and their efforts to find solutions to address and resolve issues of concern. The high rate of final written submission resolution, as well as the many commitments extended to reach those resolutions, are clear indications of all Parties willingness and ability to work together to ensure the risks of the Phase 2 Proposal are effectively and collaboratively managed, while the benefits to Inuit, communities and Nunavut are maximized.

²⁰¹ NIRB Registry No. 337254.

²⁰² NIRB Registry Nos. 337553-337554.

²⁰³ See NIRB Registry Nos. 329530, 332176, 337245.

²⁰⁴ BIM Community Engagement Update August - October 2021 NIRB Registry No. 337147

4 COMMUNITY CONSULTATION

421. It is important to highlight the breadth of public, community, government, and Inuit engagement that has occurred over the course of this assessment. Building on the January 2021 Public Consultation Presentation submitted by Baffinland, the following summarizes the key engagement activities that have been carried out by Baffinland since 2015:

- almost 150 formal meetings have been held with Hamlet Councils and Hunter and Trapper Organizations;
- 54 Public Meetings, Towns Halls or Public Radio Shows;
- 43 Working Group Meetings (Marine, Terrestrial, and Socio-Economic); and
- close to 20 formal site visits;
- youth forums and community organization meetings such as sewing groups, foodbanks, schools and Search and Rescue committees; and
- countless informal engagements through hosting radio shows, phone calls, e-mails and in-person meetings, in addition to many interactions with local community members at the Mary River Project site.

422. These approximately 267 formal engagements related to the Project and Phase 2 Proposal, as well as the numerous and frequent informal engagements, shows the deep commitment Baffinland has to working with communities and Inuit. This summary does not reflect:

- the additional efforts undertaken by Baffinland to arrange meetings with interested groups that did not wish to engage at that time
- the frequent engagements with the QIA which included the negotiation of the Inuit Certainty Agreement (ICA) which QIA agreed resolved the majority of QIA's technical issues relating to Phase 2 and included frequent engagements and meetings between the Parties since the ICA was signed
- engagements with Inuit related to ongoing implementation of the IIBA, including engagements with Inuit contractors, job fairs and workshops and training of potential Inuit employees
- engagements with Governments (Federal/ Territorial) related to ongoing implementation of the Project Certificate, licensing, and the Phase 2 Proposal
- the volume of written materials exchanged with key parties such as the Hamlets and the Hunters and Trappers Organizations via email and via the NIRB review and reconsideration process

423. Baffinland has also continued to engage with Inuit through its website and social media pages during this period, including Twitter and Facebook. These tools are used to provide timely and specific Project information, such as details and timing of shipping activities. Baffinland has hired more local in-community positions, notably Shipping Monitors in Pond Inlet who communicate consistently on shipping activities throughout the entire shipping season via social media, public radio and VHF radio. Baffinland will continue to update its website and social media pages with information on the Project and company news. Engagement via our Facebook pages is all publicly available through that platform. Continued dialogue and discussion on issues of importance play an integral part in the overall Stakeholder Engagement Plan employed by Baffinland and will be key to maintaining dialogue on the Project well into the future.
424. Through these engagements, Baffinland has shared Project information and discussed the adequacy of planned mitigation. Baffinland has made a substantial effort to gain a better understanding of IQ, Inuit interests, values, concerns and contemporary and historic activities and to incorporate these understandings in the Phase 2 Proposal. New in-community positions have been created such as the Environment Coordinator in Pond Inlet, with more in-community positions committed under Phase 2 to continue building our relationship with each Impacted Community.²⁰⁵ The health and safety of Nunavummiut remains a priority for Baffinland, and the Company has ensured that all engagement activities undertaken have followed safety protocols and the most current public health advice.
425. Baffinland is committed to a substantive, meaningful dialogue with Inuit in order to provide an opportunity to fully understand the concerns raised and to work together to identify actions to help partially or fully resolve those concerns. This is further borne out by changes, improvements, and commitments made by Baffinland as a result of these formal and informal engagements and Phase 2 assessment process. Baffinland is making its best efforts wherever technically and economically feasible to avoid, reduce and offset the potential adverse effects of the Project identified by Inuit, and to support Inuit in maximizing benefits from the Project through direct support to community infrastructure and programming as well as local procurement, training and employment opportunities. Baffinland's commitment to engagement is ongoing and will continue to evolve in response to changing community priorities and needs and to address any issues and concerns.
426. Baffinland understands that Inuit engagement and consultation must occur in a manner that is appropriate to the Nunavut and Qikiqtani regional context. Engagement and consultation methods and approaches appropriate for Southern groups, other Northern jurisdictions or an academic research setting, are not necessarily transferrable. Baffinland has made every effort to provide Inuit employees, individuals, communities, and Inuit organization groups with practical opportunities to engage in meaningful dialogue in the manner they chose, and in a way that would meet their objectives and values.

²⁰⁵ See Commitment 245 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

427. In their Final Written Statement of January 10, 2022, the Hamlet of Pond Inlet described the very high level of engagement they have had in the Phase 2 review:

*The Hamlet of Pond Inlet, Mayor and Council have been thoroughly engaged since the inception of this Phase 2 application in 2014. Through this process, we have listened intently to the entire community, and represented them at each step of the way, including Baffinland's Inuit knowledge workshops...*²⁰⁶

428. Baffinland has made every effort to meaningfully engage all participants in the planning of Phase 2 to ensure they are informed and that their concerns were understood and considered. Commitments made by Baffinland during the NIRB process are demonstrative of its dedication to incorporating feedback. All of these commitments have been tracked in the Commitment Table and compliance with these will be regularly reported to the NIRB as required under the Project Certificate. The evidence on the record details Baffinland's transparent approach to refining and optimizing the Project based on feedback to minimize and avoid adverse effects. This approach will continue into operations.
429. Baffinland is listening to Inuit, who have told us they wish to be meaningfully engaged in the Project. Inuit expressed concerns regarding maintaining their role as environmental stewards. In response, Baffinland has committed to funding independent Inuit monitoring in addition to the involvement of Inuit in Baffinland monitoring. Inuit monitors will work with inspectors to provide IQ, ensure protection of the environment, and monitor mitigation success in protecting the environment. Baffinland has presented structures to the Board that will help formalize this, and created new positions such as IQ Advisors in every Impacted Community that will help bridge communications between communities and the operations. Baffinland will also continue its practice of including as many Inuit employees as possible in its monitoring programs required under the Project Certificate and other regulatory approvals.
430. To further the goal of meaningful consultation and engagement, Baffinland has also committed to the development of community-specific engagement guidelines. The development of these guidelines will be undertaken in consultation with representatives of North Baffin communities to ensure they meet the needs of those communities. It will be for Baffinland and each community to come to agreement on how they will best engage and potentially share that engagement with others.

²⁰⁶ Final Written Statement, Hamlet of Pond Inlet, January 10, 2022, NIRB Registry No. 337607

431. Specific to the participants in this assessment, Baffinland is also committed to ongoing engagement with the MHTO and other HTOs throughout the life of the Project and will engage with the MHTO in the development of the community-specific engagement guidelines. Baffinland's goal is that consultation and engagement be productive and meaningful for all parties involved throughout the life of the Project. As part of this commitment, Baffinland has agreed to pay for certain MHTO administration expenses in recognition that they require capacity funding to engage with Baffinland. Baffinland is confident that the community-specific guidelines will guide the parties in their interactions and will allow them to share information and work together on matters and processes regarding ongoing operations and future development in an environment that fosters respect, mutual understanding and trust.
432. Through the implementation of employment and procurement initiatives under the IIBA and as described in its commitments to NIRB, Baffinland will support Inuit in obtaining Project-related contracts and employment. Baffinland will work with interested communities and groups to facilitate community economic development and share Project benefits through education, training and community investment. This will result in long term benefits for both Baffinland and Nunavut's fast-growing population.
433. Baffinland thanks all community representatives and members of the public who have taken the time to continue to meet and discuss important issues related to the Mary River Project and Phase 2. Baffinland also wishes to acknowledge the community members that have participated in the various monitoring and environmental field studies, and the many workshops that have been undertaken since 2015 to develop the Phase 2 FEIS Addendum as well as to support ongoing Project monitoring.
434. Baffinland's consultation and engagement efforts are summarized at a high level in the following documents, and these engagements resulted directly in many of the commitments included in the Disposition Table and Commitment Lists attached as appendices to this Final Written Statement.
- Technical Supporting Document 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
 - Main Document December 2018, Information Request Responses, NIRB Registry No. 321614
 - QIA 12 Attachment 1: Summary of Planned Engagement Activities for 2018 and 2019 Related to the Phase 2 Proposal, NIRB Registry No. 321614
 - Pond Inlet Consultation Approach and Record of Phase 2 Consultation with Pond Inlet, NIRB Registry No. 326504-326506
 - Update on Inuit and Community engagement to April 22, 2020, NIRB Registry No. 329530
 - Memo: List of Participants for Engagement Events Listed in the February 21 Community Engagement Update Memo, NIRB Registry No. 331636
 - Community Engagement on the Final Environmental Impact Statement Addendum - Draft Workshop Report, January 28-30, 2020, NIRB Registry No. 331791
 - Update on Inuit and Community Engagement – December 18, 2020, NIRB Registry No. 332176

- Updated Engagement Summary, Commitment List and Revised Draft PC 005, NIRB Registry No. 334460
- BIM Community Engagement Update April - August 2021, NIRB Registry No. 336784
- BIM Community Engagement Update August - October 2021, NIRB Registry No. 337147

See also:

- ICA, Schedule A, ID 1, 2, 4, NIRB Registry No. 331621
- NIRB Project Certificate No. 005 – Term and Condition Nos. 4, 15, 27, 58, 125, 125(a), 162, 163, 166, 175, NIRB Registry No. 326517
- Community and Stakeholder Engagement Plan NIRB Registry No. 324938
- Memo – Update on Inuit and Community Engagement Since October 1, 2020, December 18, 2020
- Memo – Coordination of Socio Economic Monitoring Programs, December 18, 2020

5 ECOSYSTEMIC EFFECTS

435. What follows presents a summary of the FEIS Addendum with key reference documents and summary of assessment conclusions for each topic. We have also included a section called Key Topics which summarizes key issues of focus during the environmental assessment, and addresses Baffinland's response to relevant outstanding concerns of interested parties. Finally, each section includes a conclusion which highlights key commitments, existing terms and conditions and proposed terms and conditions relevant to each topic.

5.1 Meteorology and Climate (Including Climate Change)

5.1.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 06: Climate Change Assessment (Change in GHG Emissions), NIRB Registry No. 320560
- Air Quality and Noise Abatement Management Plan, NIRB Registry No. 320608-32017, 320627-320633
- Air Quality and Noise Abatement Management Plan, NIRB Registry No. 324929
- Climate Change Action Plan, NIRB Registry No. 323892
- Responses to WWF Questions Regarding Black Carbon Emissions for the Phase 2 Project, NIRB Registry No. 325735
- Revised Memo -Follow-up Information to ECCC Comment 3.08, 3.09 – Shipping CACs Errata, Follow-up Information to ECCC Comment 3.08, 3.09 - Black Carbon Emitted from Ore Carriers, Sealift Vessels and Tankers, CACs from Shipping, NIRB Registry No. 325742
- Black Carbon Emissions for the Phase 2 Project, NIRB Registry No. 326510
- Black Carbon Mitigation Feasibility Review, NIRB Registry No. 331635
- BIMC Atmospheric Environment Presentation, NIRB Registry No. 324099
- BIMC Atmospheric Environment Presentation, NIRB Registry No. 327281
- BIMC Atmospheric Environment Presentation, NIRB Registry No. 332548
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)

- Commitment List (Final Written Statement, Appendix B and C)

5.1.2 Summary of Assessment Conclusions

436. Section 8.1.1.2 of the Guidelines required consideration of climate conditions and meteorological events on the Phase 2 Proposal, including emissions of pollution into the atmospheric environment and the relationship between climate change and GHG emissions. For the Phase 2 Proposal, emissions from combustion from both stationary and mobile sources that use diesel fuel will directly emit GHGs including CO₂, methane (CH₄) and nitrous oxide (N₂O) to the atmosphere.
437. The Phase 2 Proposal (30 mtpa Production plus operational flexibility) represents a net zero increase in Scope 1 Emissions (direct) from the already Approved Project (22.2 mtpa Production) as ore haulage by rail is up to four times more fuel-efficient than trucks (Association of American Railroad 2017). While shipping emissions do increase under Phase 2 by 27% compared to the Approved Project, overall Scope 3 (indirect) emissions contract by 20% due to revising the expected aviation fuel use. The Carol Iron Mine is thought to be the most comparable to the Mary River Project with a 23.3 mtpa production rate, 418 km railway, and operating port at Sept-Iles. According to publicly available data, the Carol Mine has a GHG emission intensity rate for the mine alone (not including the railway and port facility) of more than twice that estimated for the Mary River Project at full production (both railways and ports operating). This substantially higher emission intensity can be attributed to the energy usage associated with the Carol Mine's pelletizing operation, which Mary River iron ore does not require.
438. The GHG releases from the Mary River Project will not have a measurable effect on global climate change. The project itself will not cause measurable effects related to climate change and has taken into consideration current climate change scenarios and local risks and vulnerabilities in development of the project. Based on the present assessment and planned mitigation, Project activities proposed as part of the Phase 2 Proposal are not predicted to result in significant adverse residual effects on climate change.
439. Any GHG emissions Baffinland cannot mitigate are subject to annual reporting and taxation by the federal government at federal carbon tax rates. The Government of Canada transfers all carbon taxes collected in Nunavut to the Government of Nunavut, which it has committed to recycle back into Nunavut's economy through the Nunavut Carbon Rebate to offset the increased cost of fuel for Nunavummiut. While GHG emissions no doubt have many external negative costs, the carbon tax and programs it funds in Nunavut create a direct and measurable benefit for Nunavummiut.
440. Despite the relative efficiencies of the Mary River Project in terms of GHG emissions compared to other similar Projects, thanks to the high quality of its iron ore, Baffinland recognizes the fight against climate change requires sustained and inspired improvement. To that effect, Baffinland has been actively updating its Climate Change Strategy to investigate further methods to reduce the Projects GHG emissions, as well as ways to adapt the Project to a climate change driven evolving environment.

5.1.3 Conclusions and Recommendations of Baffinland to the Board

441. Baffinland has listened to concerns from Intervenor particularly the Impacted Communities, ECCC, the QIA and WWF throughout the review process on issues related to the Projects potential impacts on climate change. Baffinland has responded with strong and appropriate revisions to the Project design or commitments to mitigate its contribution to GHG emissions.
442. Key highlights include:
- Commitment to ensure all new equipment purchased for Phase 2 meets Tier 4 emission criteria
 - Include an external engagement component with interested Parties, including communities, into the drafting of the Mary River Climate Change Strategy (Phase 1 is already complete)
 - Set multi-year energy use and GHG emissions targets in the Climate Change Strategy that aim to ensure continual performance improvements over time and alignment with industry best practice
 - Advance restrictions on the use of heavy fuel oil (HFO) in the marine RSA for ore carriers directly contracted by Baffinland until the Government of Canada fully implements the Arctic HFO ban
443. Baffinland submits that the predictions in the climate change assessment remain unchanged as compared to the Approved Project, are well supported by the evidence and additional analysis provided throughout the review. Further, additional mitigations developed with Intervenor only further heighten the confidence in the assessment's predictions.
444. Robust monitoring and adaptive management will be applicable to this topic during Phase 2 operations.

5.2 Air Quality and Noise and Vibration

5.2.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- Technical Supporting Document 7 – Atmospheric Assessment, NIRB Registry No. 320582 (Change in Air Quality)
- Baffinland's Phase 2 Proposal Updated Information Package, filed January 7, 2020, NIRB Registry No. 327957
- Air Quality and Noise Abatement Management Plan, NIRB Registry No. 320608-32017, 320627-320633
- Air Quality and Noise Abatement Management Plan, NIRB Registry No. 324929
- Climate Change Action Plan, NIRB Registry No. 323892
- Responses to WWF Questions Regarding Black Carbon Emissions for the Phase 2 Project, NIRB Registry No. 325735

- Revised Memo -Follow-up Information to ECCC Comment 3.08, 3.09 – Shipping CACs Errata, Follow-up Information to ECCC Comment 3.08, 3.09 - Black Carbon Emitted from Ore Carriers, Sealift Vessels and Tankers, CACs from Shipping, NIRB Registry No. 325742
- Black Carbon Emissions for the Phase 2 Project, NIRB Registry No. 326510
- Black Carbon Mitigation Feasibility Review, NIRB Registry No. 331635
- Memo on Snow Sampling, NIRB Registry No. 334146-334147
- Dust Summary Report Revised, NIRB Registry No. 334330
- Draft Adaptive Management Plan, NIRB Registry No. 326518
- BIMC Atmospheric Environment Presentation, NIRB Registry No. 324099
- BIMC Atmospheric Environment Presentation, NIRB Registry No. 327281
- BIMC Atmospheric Environment Presentation, NIRB Registry No. 332548
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No.320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

5.2.2 Summary of Assessment Conclusions

5.2.2.1 Air Quality

445. Section 8.1.2.2 of the Guidelines requires, among other things, the assessment of effects on air quality from fossil fuel combustion and activities that generate airborne dust in the form of Total Suspended Particles (TSP).
446. Updated air quality modelling outlined the concentration and extent of contaminants released by Phase 2 construction and operation activities, including particulate matter (PM 10, PM 2.5, TSP), dustfall and gaseous emissions (CO, NO₂, SO₂ and PAH).
447. At the time the FEIS Addendum was developed, air quality modelling considered several mitigations by design aimed at reducing dustfall, an area identified by communities and regulators as a source of concern, which included additional dust suppression along the Tote Road by water or calcium chloride (CaCl₂), the replacement of hauling ore by truck with a railway, the elimination of secondary crushing at the outdoor crushing facility at the Mine Site, and the development of an indoor crushing facility at Milne Port.

448. During the reconsideration process, Baffinland has already implemented additional dust mitigation strategies and actions including spraying stockpiles with a dust suppressant that forms a crust to encase any dust, and the use of a dust suppressant along the Tote Road in addition to the use of water or CaCl. Both of these products are ecologically friendly and approved for use by the Government of Nunavut. These improvements ensure that modelling conclusions presented in the Addendum are conservative in nature versus the actual expected implementation of the Phase 2 proposal, considering additional dust reducing mitigations.
449. The assessment of residual effects generally found that particulate matter, dustfall and gaseous emissions at Milne Port, the Mine Site and Northern Transportation Corridor would be above background and in some cases exceed conservative thresholds, however, this would be limited to the Local Study Area (LSA; 3km radius around project infrastructure), with no measurable changes expected outside the LSA.
450. In response to a question received from the representative of the Hamlet of Sanirajak during the reconvened public hearing in January 2021, Baffinland estimated the reduction in project dust that would result from removing secondary crushing from the Mine Site and switching from ore hauling by truck to rails. The following results are a summary of what was provided to the NIRB in Baffinland's written responses to Intervenor on March 22, 2021:
- a. The reductions at the Mine Site was determined by comparing 2019 data from the Mine Site dustfall monitoring program against the Phase 2 model predictions. **This comparison provided an estimated reduction of dustfall at the Mine Site under phase 2 of up to 77%.**
 - b. The reductions in dustfall associated with the North Railway was determined by comparing data from the 2014 Tote Road dustfall monitoring program (traffic in 2014 is similar to what is expected under Phase 2) against dustfall data from the 2019 dustfall monitoring program. **This comparison provided an estimated reduction of dustfall along the Northern Transportation Corridor under Phase 2 of up to 76%.**
451. Based on the assessment and proposed mitigations, the residual effects to air quality from the Phase 2 Proposal are predicted to be not significant.

5.2.2.2 Noise and Vibration

452. Section 8.1.3.2 of the Guidelines required consideration of potential increase to noise levels from Project activities and the potential impacts of noise and vibration to people, terrestrial animals, marine mammals, and fish.
453. Updated modeling outlined the magnitude and extent the Phase 2 Proposal activities will create noise and vibration as a result of construction activities, equipment and vehicle operation, blasting, and ore handling and processing, among other activities.

454. The Phase 2 Proposal is not expected to increase noise and vibration to levels that will interact substantially with human receptors due to planned mitigation and the small temporal and spatial footprint of auditory disturbance. Predicted sound levels from movement of the train along the rail corridor are expected to be minor and localized due to the intermittent and temporary nature of this source (i.e., several passes per day). Anticipated noise levels are expected to be below guidelines. Modelling results suggest noise generated at Milne Port will be noticeable at the HTO Cabin east of Milne Port.
455. Based on the present assessment and planned mitigation, Project activities proposed as part of the Phase 2 Proposal are not predicted to result in significant adverse residual effects on the atmospheric environment.

5.2.2.3 Dust Management

456. From the earliest stages of Project planning, Baffinland recognized that dust deposition from Project activities was an important issue requiring design mitigation, best management practices and life of Project monitoring. Project changes associated with the Phase 2 Proposal will reduce the amount of dust generated by Project activities which are currently significant sources of dust, however, Baffinland readily acknowledges that dust will continue to be emitted during Phase 2 and that this is an unavoidable fact of operating the Project. As a result, Baffinland has committed to engaging in planned approach to address dustfall through mitigation, monitoring and appropriate adaptive management strategies.
457. Baffinland has learned valuable lessons through its existing operations that have helped to address current dust levels and have contributed to the commitments made to address dust under Phase 2. Baffinland has been able to comprehensively address concerns of potential effects from dust dispersion on human health and the environment under the current operations by implementing monitoring programs to determine if dustfall is affecting soil and vegetation, the freshwater and the marine environments upon which animals and land users rely.
458. Dust will be addressed in Phase 2 through project design, mitigation measures, and a comprehensive monitoring and adaptive management system. Most notably, along the Northern Transportation Corridor, trucks will be replaced by rail, resulting in an overall decrease in dust generated along the Northern Transportation Corridor. Modifying the crushing process and moving components of it indoors to the Port will offset what could have been additional sources of dust at the Mine Site.

459. In addition, Baffinland has commissioned a third party assessment of the current and expected sources of dust which is being led by scientific experts and an Inuit Committee with representatives from the Impacted Communities, specifically formed for this project. Recommendations related to actions that will influence reductions in Project related dust will be implemented by Baffinland.²⁰⁷ The additional revenue from Phase 2 will be used to implement these recommendations and also support the investment in additional infrastructure, should it be required to further mitigate dust.
460. Despite current dustfall deposition exceeding what was modelled in the Early Revenue Phase Project assessment, dustfall has not caused unanticipated impacts in the receiving environment namely to the quality of air, soil, freshwater, marine water or sediment or to the health of fish and vegetation. This has consistently been confirmed through Baffinland's comprehensive and holistic approach to monitoring dust through multiple receptors. Key findings from Baffinland's monitoring programs and evaluations include:
- a. Soil and Vegetation Monitoring – “no relationship has been detected between dustfall from Project-related activities and soil and vegetation base metals concentration or vegetation cover and abundance”²⁰⁸
 - b. Freshwater Aquatic Monitoring – “the Project is not having significant effects on the freshwater habitat or the species that live in the water bodies near the Project's Mine Site.”²⁰⁸
 - c. Marine Environmental Effects Monitoring – “iron is naturally abundant in the marine environment (i.e., pre-Project) and indicate variability in iron concentrations through time; however, there is no evidence to suggest that concentrations have increased relative to baseline.”²⁰⁸
 - d. Human Health – “it is considered unlikely that ore dust deposition from the Project would result in levels of metals in blueberries or caribou tissues that would be harmful to human health, if consumed.”²⁰⁸
461. Although monitoring results to date indicate no long term negative effects of dustfall on vegetation, aquatic environments, marine environments, wildlife or human health, Inuit have identified the presence of dustfall as an effect in itself. The visibility of dust on snow, the land or in drinking water affects perceptions regarding the aesthetics and quality of the environment from local Inuit landusers in the area. These concerns have and will continue to drive improvements in Baffinland's management of dust.

²⁰⁷ Commitment 230 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²⁰⁸ Dust Summary Mary River Project, NIRB Registry No. 334330

462. Improvements to the ongoing monitoring programs and information shared from Inuit-led monitoring under the Inuit Stewardship Plan, community feedback or Baffinland funded Community Based Monitoring programs will also continue to enhance the understanding of how dust travels across the landscape and how this may be impacting community use of the area. Monitoring results and Inuit feedback will continue to be used to inform potential future changes required to improve dust management performance on the Project.
463. The tiered approach to adaptive management described in the revised draft Adaptive Management Plan (June, 2020), establishes low, moderate and high risk thresholds to determine when, and to what degree, Baffinland must respond to observations of unacceptable levels of dust. The risk thresholds will be established by both Baffinland and Inuit via the Inuit Committee. A preliminary draft of adaptive management thresholds and associated response actions have been issued for public review as part of the Phase 2 review process.²⁰⁹
464. Demonstrating its commitment to addressing the issue of dustfall, Baffinland has made the following commitments to manage dust in the near term, as well as the long term under an approved Phase 2 project:
465. Near Term
- Baffinland will fund a third party audit of all present and future (Phase 2) dust sources across the Project to ensure the proper dust controls are in place (note, this is already underway)²¹⁰.
 - Baffinland will implement additional mitigations at Milne Port if DusTreat® (stockpile spray) does not appear to reduce fugitive dust in 2021²¹⁰, including, but not limited to:
 - Modifications to the application process for DusTreat®;
 - Evaluation and implementation of alternative spray technologies/products;
 - Installation of wind fencing around the Milne Port stockpiles; and
 - Stockpile covers (tarp like product).
 - Baffinland will triple the number of dust collectors across the Project²¹⁰.
 - Baffinland will develop and fund a Community Based Monitoring (CBM) program out of Pond Inlet that is Inuit-led to monitor the extent of visual dust in the Project Area as well as a snow sampling program²¹⁰
466. Long Term
- Under Phase 2, the air quality and noise abatement management plan will be updated as part of a progressive adaptive management approach that integrates Inuit input at every step of the

²⁰⁹ NIRB Registry No. 334147

²¹⁰ See Commitment 230-234 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

process.²¹¹ Adaptive management objectives, indicators, thresholds, and responses will require agreement with the Qikiqtani Inuit Association based on the input of the independent Inuit Committee. Initial indicators and thresholds have already been identified through the updated air quality and noise abatement management plan that was submitted as part of this review in July of 2019.²¹²

- Enhanced monitoring (as compared to the current project) of total suspended dust and fine dust in response to discussions with Environment and Climate Change Canada.²¹² This will include active or continuous on-site monitoring and summer monitoring at off-site locations. An expansion of the existing passive dustfall monitoring program has also been committed to, which will continue to rely on the advice of land users and the TEWG to identify new sampling locations. The draft Air Quality and Noise Abatement Management Plan (AQNAMP) has already identified preliminary target areas, and in 2021 Baffinland proactively began new installation.
- Baffinland will expand its on-site air quality monitoring to include a continuous or active monitoring component for total suspended dust and fine dust, sulfur dioxide and nitrogen dioxide.²¹²
- As described in the draft Adaptive Management Plan, there will be action trigger levels for dust and corrective actions will be implemented should a trigger level be reached.²¹³

467. Baffinland has already initiated an independent audit of all present and future (Phase 2) dust sources across the Project to ensure the proper dust controls are in place.²¹⁴ This includes an evaluation of existing and proposed dust controls for the purpose of identifying where improvements or additional measures are required. To ensure the audit fully considers the knowledge and concerns of Inuit, and that Baffinland is accountable for implementing the recommendations that follow from the audit, Nunami Stantec, the independent auditor is developed a joint Project Charter with the designated representatives from the Impacted Communities. The first onsite inspection by the auditors has already occurred and was attended by designated community representatives to provide their insights at each audit location.

5.2.3 Conclusions and Recommendations of Baffinland to the Board

468. Baffinland and Intervenors have developed a number of mutually agreeable commitments and proposed Terms and Conditions related to air quality (including dustfall), noise and vibration. Technical issues identified by the GN, ECCC, HC and QIA have been fully resolved.

²¹¹ Transcript, Vol. 3 472

²¹² See Commitments 59, 73, and 75 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²¹³ See Commitment 73 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²¹⁴ See Commitment 230 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

469. Baffinland takes the issue of dust very seriously and has made dustfall mitigation and monitoring a priority since operations began. Important commitments in this area include:
- Mitigation by design including major modifications to the way ore is handled (chutes and shrouds), processed (indoor crushing) and transported (rail versus road).
 - Application of specifically engineered dust suppressants to the Tote Road and Milne Port Stockpiles to prevent dust from leaving the Project area.
 - Continued or improved passive dustfall monitoring, remote sensing (satellite) and snow coring at Milne Port.
 - Third party assessments and monitoring through ongoing dust audit and proposed community based monitoring program.
 - Prepared adaptive management responses if dustfall is greater than predicted, including the covering of stockpiles with tarps, wind fencing, installation of ore car covers or movement of crushing indoors at the Mine Site.
470. The atmospheric assessments took existing and proposed mitigation measures into account. For gaseous emissions, it considered our use of low emission vehicles and our idling policy and for dustfall it considered the existing and proposed improvements to how ore is processed and transported. With these mitigations alone our robust modelling and expert analysis were able to determine the residual effects of the Phase 2 Proposal on the atmospheric environment to be non-significant. Additional mitigations developed with Intervenor only further heighten the confidence in the assessments predictions.
471. Although monitoring results to date indicate no long-term effects of dustfall on vegetation, aquatic environments, wildlife or human health, Baffinland recognizes that dustfall continues to be an important source of concern for local communities. Improvements to monitoring programs will continue to increase the understanding of dust generation and movement across the landscape to further inform adaptive management.
472. Improvements to monitoring programs will continue to increase our understanding of dust and how it moves across the landscape, which will inform the implementation of additional mitigations and ongoing adaptive management practices. Essential to this process will be the sustained commitment to develop and operate the project in a way that respects Inuit views and priorities.

5.3 Hydrology and Hydrogeology, Groundwater/Surface Water

5.3.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 13: Surface Water (Freshwater Quantity) (Change in Water Quantity), NIRB Registry No. 320593-320605
- TSD 14: Freshwater biota and Habitat Assessment (Freshwater Quality) (Change in Water Quality), NIRB Registry No. 320556

- Response to Technical Review Comment QIA 21 – Water Quality Assessments - Magnitude Ratings and Quantitative Assessments, NIRB Registry No. 325745
- Application to Amend Type A Water Licence (and supporting materials) – available via the NWB Public Registry
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

5.3.2 Summary of Assessment Conclusions

473. Section 8.1.5.2 (Hydrology and Hydrogeology) and 8.1.6.2 (Groundwater/Surface Water) of the Guidelines required consideration of impact of variable and extreme stream-flows, impacts to watershed, drainage patterns, and surface and ground water quality and quantity from the various Project activities.
474. Activities associated with the Phase 2 Proposal may affect freshwater quantity and quality due to water extraction and consumption, stream diversion at the North Railway, ore dust deposition and transport, and water-rock interactions at quarries and rock cuts along the North Railway.
475. The Surface Water Assessment (TSD-13) provides an assessment of effects of the Phase 2 Proposal on surface water and includes new information collected or published since submission of materials for the Approved Project. The Phase 2 Proposal builds on the extensive baseline studies and assessments carried out since 2011 for the larger Approved Project and is thus closely linked to the FEIS and previous addendums.
476. Appended to TSD-13 are recent hydrology monitoring reports and analyses supporting the effects assessment. Groundwater in the Project area occurs in distinctive shallow and deep systems, with limited connections and interaction between them. The extremely cold temperatures of the region, combined with the permafrost, result in a short period of surface water runoff that typically occurs from June to September.
477. Activities associated with the Phase 2 Proposal may affect freshwater quantity and quality due to water extraction and consumption, stream diversion at the North Railway, ore dust deposition and transport, and water-rock interactions at quarries and rock cuts along the North Railway. The Phase 2 Proposal will not involve any substantive changes to how water is managed at the Mine Site, as there are no changes to how waste rock will be managed.

478. During the construction of the North Railway, streams will be permanently diverted to adjacent streams that will cross the railway and flow received in culverts along the Tote Road may change. Planned mitigation includes an adaptive management approach where activities may include potential culvert replacement, channel widening, regrading, channel stabilization, and, where necessary, fish habitat construction. With the planned mitigation, the downstream water quantity increases associated with stream diversions are not expected to affect the watershed as a whole.
479. Baffinland's streamflow monitoring program provides data that, in conjunction with regional streamflow and climate datasets, can be used to determine design criteria for engineering design, including the sizing of bridges and culverts along the Northern Transportation Corridor. In or near water works associated with the construction of the North Railway have the potential to cause erosion and input sediments into freshwater systems. The effects of construction on water quality will be addressed through implementation of proven erosion and sediment control and dust suppression measures.
480. The Phase 2 Proposal is not expected to influence the quantity and quality of freshwater at the watershed level due to planned mitigation and the small footprint relative to the available freshwater in the region. Based on the present assessment and planned mitigation, Project activities proposed as part of the Phase 2 Proposal are not predicted to result in significant adverse residual effects on surface water.

5.3.2.1 Protection of Waterbodies

481. Baffinland designed the project to incorporate mitigations. These examples include the use of existing infrastructure, limiting the project footprint, avoidance of water bodies where possible, selecting and sizing crossing structures to pass required floes, and to screen quarries for acid rock drainage and metal leaching potential.²¹⁵ Baffinland has a number of management plans dedicated to the freshwater environment, all of which will apply to Phase 2 and many of which will be further reviewed through the Nunavut Water Board process. Similar to the management plans, Baffinland's existing freshwater monitoring programs are comprehensive and will be updated to account for new Phase 2 infrastructure.
482. Since the start of the project, Baffinland has been implementing adaptive management. Related to the freshwater environment, examples include addressing erosion and sediment control issues during freshet and the development of a snow management plan that identifies dedicated snow disposal sites to minimize the runoff of sediment in the stockpiled snow in the spring. Under Phase 2, Baffinland will implement a more formal and tiered approach to adaptive management that puts Inuit at the centre of our decision-making.
483. Under the Phase 2 proposal, Inuit will play a leading role in identifying water bodies of heightened importance and implementing an Inuit Qaujimajatuqangit enriched water monitoring program.²¹⁶

²¹⁵ Transcript, Vol. 3, 479

²¹⁶ Transcript, Vol. 3, 480

5.3.3 Conclusions and Recommendations of Baffinland to the Board

484. Baffinland and Intervenor have developed a number of mutually agreeable commitments and proposed Terms and Conditions related to hydrology, hydrogeology, groundwater and surface water. Technical issues identified by CIRNAC, ECCC, DFO and QIA have been fully resolved.
485. Important commitments have already been integrated into the Phase 2 Waste Rock Management Plan and will be further addressed through the Type A Water License Addendum review for Phase 2. Baffinland and QIA are also advancing the Water Compensation Agreement for Phase 2, which will provide QIA with annual compensation and consumption payments, as well as a mechanism for assessing substantial effects, should they occur
486. Baffinland submits that the prediction on non-significant residual effects in these areas are well supported by the evidence and additional analysis provided throughout the review. Further, additional mitigations developed with Intervenor only further heighten the confidence in the assessments predictions.
487. Expanded monitoring programs, including a new freshwater monitoring program delivered through the Inuit Stewardship Plan, as well as improvements in adaptive management under the new Adaptive Management Plan will ensure that if any unforeseen effects occur they will be detected and responded to accordingly.

5.4 Geology and Geomorphology, Landforms, Soils and Permafrost

5.4.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 02: Project Description, NIRB Registry No. 320586-320592
- TSD 08: Landforms, Soil and Permafrost Assessment (Change in Landforms, Change in Geohazard Risk, Change in Geochemical Risk), NIRB Registry No. 320553
- Information Request Response, CIRNAC 10 Attachment 2: Geotechnical Investigations - Acid Rock Drainage Assessment, NIRB Registry No. 321614
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No.320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No.320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559

- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)

Commitment List (Final Written Statement, Appendix B and C) Commitment List (Final Written Statement, Appendix B and C)

5.4.2 Summary of Assessment Conclusions

488. Sections 8.1.4.2 and 8.1.7.2 of the Guidelines required consideration of the general impacts on landforms from Project activities, the abundance and distribution of unique or valuable landforms, stability of the terrain, geotechnical and geophysical hazards, and potential for ARD and metal leaching.
489. The Phase 2 Proposal has the potential to alter landforms, soils and permafrost due to alterations to ecologically sensitive land, and changes to the thermal regime of permafrost.
490. The North Railway will cross glaciofluvial deposits and a large esker. However, these landforms are not ecologically important given the abundance of glaciofluvial deposits (including eskers) in the area. The rail construction will also remove existing bedrock outcrops; however, these bedrock outcrops are not currently used by cliff-nesting raptors. Engineering mitigation measures such as foundation design at Milne Port, embankment design, and drainage have been considered to reduce stability concerns due to changes to geohazard risks, including the degradation of permafrost, and the North Railway has avoided major ice-rich features to a large degree.
491. Quarrying and rock cuts are unlikely to result in metal leaching and acid rock drainage (**ML/ARD**) as most of the affected rock is sedimentary and the remaining granitic rocks present in the area are predicted to be low potential for ML/ARD. As a mitigation strategy, the Borrow Pit and Quarry Management Plan (Baffinland 2014b) prescribes site-specific geochemical testing of rocks prior to quarrying. Construction of the North Railway will involve substantial disturbance of potential fossil bearing rock, however, the creation of rock cuts along the railway will provide new exposures allowing for further paleontological exploration.
492. Based on the present assessment and planned mitigation, Project activities proposed as part of the Phase 2 Proposal are not predicted to result in significant adverse residual effects on landforms, soils and permafrost.

5.4.3 Conclusions and Recommendations of Baffinland to the Board

493. Baffinland and Intervenorors have developed a number of mutually agreeable commitments and proposed Terms and Conditions related to geology, geomorphology and landforms. Technical issues identified by CIRNAC, NRCAN and QIA have been fully resolved.

494. Significant commitments include protocols for storage of any Potentially Acid Generating Rock in the Waste Rock Facility, provision of additional geotechnical reports related to Route 3 as it becomes available, the installation of thermosters at key locations and a comprehensive permafrost monitoring program.
495. Baffinland submits that the prediction on non-significant residual effects in this area is well supported by the evidence and additional analysis provided throughout the review. Further, additional mitigations developed with Intervenors only further heighten the confidence in the assessments predictions.
496. Expanded monitoring programs as well as improvements in adaptive management under the new Adaptive Management Plan will ensure that if any unforeseen effects occur, they will be detected and responded to accordingly.

5.5 Vegetation

5.5.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 09: Vegetation (Change in Vegetation Abundance and Diversity, Change in Vegetation health, Change in Culturally Valued Vegetation), NIRB Registry No. 320561
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No.320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

5.5.2 Summary of Assessment Conclusions

497. Section 8.1.8.2 of the Guidelines required consideration impacts to the abundance and diversity of vegetation and impacts to vegetation of cultural value from project activities. The Phase 2 Proposal may alter vegetation due to direct and indirect changes to habitat.

498. In general, vegetation communities in the Project area were broadly categorized through field interpretation as uplands, coastal areas, and wetlands. The Phase 2 Proposal involves an expansion at Milne Port and the creation of the North Railway resulting in additional loss of terrestrial habitat, however, the total area affected is a small proportion of the available habitat and activities will be planned and conducted to reduce the footprint of the Phase 2 Proposal to only that which is necessary. Changes to culturally valued vegetation as a result of the Phase 2 Proposal are predicted to be negligible as the abundance of indicator species (blueberry) is very low in the area.
499. Fugitive dust emissions can reduce plant growth and health. Fugitive dust emissions due to the transport of ore will increase temporarily along the Tote Road during construction. Once the North Railway is operational, the level of traffic on the road will decrease substantially compared to current operation and construction, as will the corresponding fugitive dust emissions along the road.
500. Population level changes to vegetation, and changes to the vegetation classes found in the area are not anticipated. Based on the effects assessment for the Phase 2 Proposal the current Terrestrial Environment Mitigation and Monitoring Plan does not require any updates to mitigate Phase 2 Proposal related effects.
501. Based on the present assessment and planned mitigation, Project activities proposed as part of the Phase 2 Proposal are not predicted to result in significant adverse residual effects on vegetation.

5.5.3 Conclusions and Recommendations of Baffinland to the Board

502. Baffinland and QIA have developed a number of mutually agreeable commitments and proposed Terms and Conditions related to vegetation. Technical issues identified by QIA (who was the only Intervenor with comments) have been fully resolved.
503. Significant commitments related to vegetation include the development of revegetation standards based on IQ with communities and the implementation of additional vegetation monitoring for culturally valuable vegetation through the Culture, Resource and Land Use Monitoring program.²¹⁷
504. Baffinland submits that the prediction on non-significant residual effects for vegetation is well supported by the evidence and additional analysis provided throughout the review. Further, additional mitigations developed with Intervenors, specifically related to dust management, only further heighten the confidence in the assessment's predictions.
505. Expanded monitoring programs, including considerations for culturally important vegetation through the Inuit Stewardship Plan, as well as improvements in adaptive management under the new Adaptive Management Plan will ensure that if any unforeseen effects to vegetation occur, they will be detected and responded to accordingly.

²¹⁷ See Commitment 156 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

5.6 Freshwater Aquatic Environment Including Biota and Habitat

5.6.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 14: Freshwater Biota and Habitat Assessment (Change in Freshwater Biota and Habitat), NIRB Registry No. 320556
- Information request response DFO 3.1.1 Attachment 1: List of Stream Crossings (Culverts), Bridges, Cuts/Diversions, and Lake/Pond Encroachments/Infills Along the North Rail Alignment and Tote Road Realignment and Fish Habitat Summary, NIRB Registry No. 321614
- Additional Information on Fish Habitat Interactions - Mary River Project - Phase 2 Proposal, NIRB Registry No. 325739 – 325741
- North Rail Field Report, NIRB Registry No. 324723-324731
- Application to Amend Type A Water Licence (and supporting materials) – available via the NWB Public Registry
- Freshwater Environment Presentation, NIRB Registry No. 327283
- Freshwater Environment Presentation, NIRB Registry No. 331375
- Freshwater Environment Presentation, NIRB Registry No. 332552
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

5.6.2 Summary of Assessment Conclusions

506. Section 8.1.9.2 of the Guidelines required consideration of the potential impacts to fish, invertebrates and freshwater habitat including alteration, disruption or destruction of fish habitat from Project activities.
507. Activities associated with the Phase 2 Proposal may affect freshwater biota and habitat due to in-water construction activities; effluent discharges; changes in sedimentation rates; and changes in habitat availability and connectivity.

508. The Freshwater Biota and Habitat Assessment Technical Supporting Document provides an assessment of effects of the Phase 2 Proposal on freshwater biota and habitat. The Phase 2 Proposal builds on the extensive baseline studies and assessments carried out since 2011 for the larger Approved Project and is thus closely linked to the FEIS and previous addendums.
509. The freshwater biota in the region includes two fish species, Arctic char (*Salvelinus alpinus*) and nine-spine stickleback (*Pungitius pungitius*), and numerous invertebrate species on which these fishes rely. There are no freshwater Species at Risk or Species of Conservation Concern known to exist in the Qikiqtani Region. Arctic Char was used as a key indicator species in the assessment. Activities associated with the Phase 2 Proposal may affect freshwater biota and habitat due to in-water construction activities; effluent discharges; changes in total suspended solids and sedimentation rates; and changes in habitat availability and connectivity.
510. The installation of bridge and culvert infrastructure within watercourses will result in the permanent destruction and/or alteration of char habitat and may impede fish passage (e.g., due to increased velocities). The rivers that will be crossed by bridges may provide some summer feeding habitat and serve as a migration corridor for adult char, however, there is no known spawning or overwintering char habitat that will be affected along the planned North Railway route. Bridges and culverts will be designed with best practice fish passage considerations in consultation with, and approval of, DFO. Therefore, with approved fish passage engineering, bridge and culvert installations associated with the North Railway are not expected to affect Arctic char at the regional population level.
511. Water is withdrawn from some lakes and streams for use with dust suppression near the Mine Site. These water withdrawal sites are located in known or potential Arctic char habitat. Modeling predictions, based on planned water withdrawal rates, suggest all but two waterbodies will experience water reductions of less than 10%, and the effects of water withdrawals on Arctic char habitat are not expected to influence char at the population level. With the planned sediment and erosion control, and water management mitigation, the effects of sedimentation to Arctic char and char habitat are expected to be negligible.
512. Based on the present assessment and planned mitigation, activities proposed as part of the Phase 2 Proposal are not predicted to result in significant adverse residual effects on freshwater biota and habitat.

5.6.3 Conclusions and Recommendations of Baffinland to the Board

513. Baffinland and Intervenor have developed a number of mutually agreeable commitments²¹⁸ and proposed Terms and Conditions related to the freshwater environment. Technical issues identified by CIRNAC, ECCC and DFO have been fully resolved. The majority of technical issues raised by QIA have also been resolved, with the exception of one partial resolution (QIA-41).
514. Significant commitments related to the freshwater environment relate to fish health monitoring, water quality management at the Waste Rock Facility, adaptive management for sedimentation and the scope of information to be included in Baffinland's Fisheries Act Authorization (FAA) Application for the North Railway.
515. Baffinland submits that the prediction on non-significant residual effects in the freshwater assessment is well supported by the evidence and additional analysis provided throughout the review. Further, additional mitigations developed with Intervenor only further heighten the confidence in the assessments predictions.
516. Expanded monitoring programs, including a new freshwater monitoring program delivered through the Inuit Stewardship Plan, as well as improvements in adaptive management under the new Adaptive Management Plan will ensure that if any unforeseen effects to the freshwater environment occur, they will be detected and responded to accordingly.

5.7 Terrestrial Wildlife and Habitat

5.7.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 10: Terrestrial Wildlife and Wildlife Habitat (Change in Risk of Injury or Mortality, Change in Habitat Quality or Availability), NIRB Registry No. 320562
- EIS Main Body (October 2018), NIRB Registry No. 320619
- Mary River Project – Phase - Supplement to Technical Supporting Document 27 - Cumulative Effects Assessment, NIRB Registry No. 325014
- Mary River Project – Phase - Supplement to Technical Supporting Document 27 - Cumulative Effects Assessment, NIRB Registry No. 326516
- Main Document December 2018, Information Request Responses, NIRB Registry No. 321614
- GN 06 Attachment 1: Typical Cross Section for Caribou Crossing
- GN 44 Attachment 1: Figures (Caribou Travel; Train Speeds)

²¹⁸ See Commitments 19, 20, 99, 128, 145, 146, 147, 148, 155, 184, 186, 188, 200, 201, 202 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

- GN 46 Attachment 1: List of Assumptions (Caribou Modelling)
- GN 46 Attachment 2: Tables (Caribou Energetics)
- GN 49 Attachment 1: Figure 1. The extent of the PDA encompassed by caribou walk paths
- QIA 21 Attachment 1: Typical Cross Section for Caribou Crossing
- Additional Assessment Info, July 2019, Railway Embankment “Sensitivity” Analysis for Caribou Crossing Potential, NIRB Registry No. 326043
- Response to Final Written Submissions Main Document, (October 2019), NIRB Registry No. 327139-327149
- QIA-01 Attachment 1: Memo request to change significance determination for caribou, NIRB Registry No. 327139-327149
- QIA-03 Attachment 3: Caribou protection measures, NIRB Registry No. 327139-327149
- Proposed Railway Cut Profile in Relation to Caribou Travel Corridor, NIRB Registry No. 331792-331793
- Community Risk Assessment Workshop Report, NIRB Registry No. 327139-327149
- Rail Alignment Summary Report, NIRB Registry No. 327139-327149
- Agreement in Principle for Mary River Research Contribution Agreement & Data Sharing Agreement, NIRB Registry No. 337254
- Terrestrial Environment Presentation, NIRB Registry No. 327288
- Terrestrial Environment Presentation, NIRB Registry No. 331410
- Terrestrial Environment Presentation, NIRB Registry No. 332551
- BIMC Caribou Migration Presentation, NIRB Registry No. 333304
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

5.7.2 Summary of Assessment Conclusions

517. Section 8.1.10.2 of the Guidelines requires consideration of the general impacts to terrestrial wildlife, including population size, abundance, distribution and behavior of wildlife from Project activities.

518. Baffinland has acknowledged that because of the current low numbers of North Baffin caribou, there is uncertainty with respect to the assessment conclusions. In order to address that uncertainty, Baffinland assessed nine different scenarios on cumulative habitat impacts and eight different scenarios regarding energetics and population recovery. In each of these scenarios, the impacts from the Phase 2 Proposal activities are not significant.²¹⁹
519. It is important to note that for terrestrial wildlife and habitat, as for other valued ecosystemic components, the assessment for the Phase 2 Proposal builds on several years of baseline data, as well as six years of operational monitoring. The Mary River Project is not a project with a lack of environmental data, knowledge or information. There has been near continuous baseline assessment monitoring and research since at least 2007, in addition to the traditional knowledge of the terrestrial environment shared with Baffinland by many Inuit.
520. For the Phase 2 Proposal, Baffinland updated its baseline reports to include data from six years of monitoring vegetation, wildlife, birds; updated information from regional monitoring programs and a collection of contemporary Inuit knowledge regarding wildlife and updated impact assessments to include lessons learned from 14 years of on the ground work and six years of project operations.
521. While the baseline studies and ongoing monitoring programs include many species and ecosystems, the Phase 2 Proposal's impact assessment focused on specific key indicators that were identified either by the NIRB, by regulator interest, by community concern, or that were made apparent by ongoing monitoring programs. The key indicators used for the Phase 2 Proposal are the same as those used for the approved Project.
522. The Key Indicator species (KIs) for terrestrial wildlife are caribou, based on community and harvester interest, and wolf, in response to NIRB Guidelines and requests from the Government of Nunavut. Focus on those KIs (especially caribou) guided the assessment of impacts on wildlife and habitat for the Phase 2 Proposal.
523. Most technical comments, information requests and calls for additional information focused on caribou. As such, for the purpose of this Final Written Statement, Baffinland focuses on the impacts to caribou and measures proposed to protect them.
524. In addition to the assessment work for Phase 2 outlined in Technical Supporting Document 10: Terrestrial Wildlife and Wildlife Habitat, Baffinland undertook additional work to address parties' concerns, including the following:
- Baffinland held community risk assessment workshops from January through May 2019 to better incorporate Inuit perspectives on the impacts of the Phase 2 Proposal, and protection measures for

²¹⁹ Public Hearing Transcript, November 4, 2019, Vol. 3, p. 582.

the terrestrial environment. Those reports were submitted to the NIRB in October 2019 (NIRB Registry No. 327146- 327148).

- Baffinland held an on-site workshop in July 2019 with representatives from the Impacted Communities of Igloolik and Pond Inlet, the GN and the QIA. The purpose of the workshop was to discuss the design of the rail alignment, interactions with land users and wildlife, map potential crossing locations for land users and discuss potential solutions for any concerns raised. A fly-over of the entire rail route was included, as well as time spent on the ground at locations identified by Inuit from the communities to discuss potential interactions. To aid in the discussion a visual example of the rail embankment was constructed on site. Baffinland built a section of the railway on-site to ensure that community members and regulators understood what the railway would look like and could evaluate the risk it could pose to caribou movement. A summary report was submitted to the NIRB in October 2019.²²⁰
- In response to a request from the GN for more information on the railway embankment and operation, Baffinland provided a sensitivity analysis about embankment height alternatives as a criterion of caribou crossing and predicted noise of train operations as well as a detailed analysis of potential impacts based on varying levels of disturbances (NIRB Registry No. 326043).
- In response to a request raised by the GN regarding the effects of helicopter overflights on caribou, and cumulative effects on terrestrial wildlife and habitat. The cumulative effects assessment for caribou habitat was revised to reflect existing and reasonably foreseeable development on seasonal habitat within the Northern Baffin Caribou Range (NBCR) and disturbance coefficients (DCs) were increased to include more conservative assumptions in the habitat impact sensitivity analysis for caribou (NIRB Registry No. 326516).
- In response to a request from the QIA for specific information on habitat areas used to calculate cumulative habitat disturbance and further information on how Baffinland determined impact significance, Baffinland information throughout the review process, and as part of its Final Written Submissions filed in October 2019 (NIRB Registry No. 327140, pages 63-85).

525. With respect to caribou in the North Baffin region, they are currently in very low numbers. Baffinland's proposed mitigation, monitoring and adaptive management programs with respect to caribou are comprehensive, while at the same time remaining flexible such that appropriate measures can be taken if and when the caribou population increases, interactions with the Northern Transportation Corridor occur and effects from the Project are demonstrated. Based on the proposed embankment heights and slopes and using standard criteria to identify 'crossable' area, two-thirds of the railway is considered to be permeable to caribou movement without further mitigation. In addition, a switch from ore haulage by truck to rail will significantly reduce wildlife disturbance along the Northern Transportation Corridor, by reducing the frequency of the movement of vehicles.²²¹

²²⁰ NIRB Registry No. 327148

²²¹ Hearing Transcript, Vol. 4, 775-776; Vol. 17, 3168

526. Regardless, the importance of caribou to Inuit is not understated and Baffinland has made a number of key commitments for the protection of caribou as part of the Phase 2 assessment process. These measures include the following²²²:

- General modifications to railway design to make embankments smoother using smaller fill material (Type 12 to Type 8)²²³;
- Modification of the rail design to increase permeability (the ability of caribou to cross), including creation of a 1:2 slope where the embankment is up to 4m high;
- A pilot program investigating the effectiveness of gentler slopes on caribou crossing;
- Baffinland support for regional studies of caribou movements to assess caribou responses to the railway and caribou monitoring efforts through a research agreement with the Government of Nunavut;
- Updating the Terrestrial Environment Mitigation and Monitoring Plan to reflect that Baffinland will undertake research to estimate the zone of influence and disturbance coefficients exerted by the Project on caribou, and shall provide to NIRB updated estimates of habitat losses, at least every five years (this has already been completed);
- A commitment to contributing to a caribou protection map and associated management requirements;
- Operation restrictions following the Caribou Decision Framework as a result of a caribou sightings;
- Establishment of Special Protection Areas along the railway where additional wildlife crossings (1:3 slope embankments) may be installed; in these areas speeds may also be reduced generally or during certain times of the year, and additional wildlife surveillance monitoring may occur.
- The construction of 3 observation stations along the rail line to be staffed by Inuit (24 employment positions) to increase monitoring efforts and surveillance of wildlife including caribou;
- The employment of Inuit construction monitors;
- An adaptive management approach when caribou return such as the use of a “hi-rail” truck that runs in advance of trains to identify if and when caribou are in the area.; and
- An adaptive management approach to the need for any additional caribou or land-user crossings based on monitoring results; and
- A Railway Safety Protocol and Communication Plan.

²²² See Commitments 32, 67, 223, 236, 238, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²²³ See QIA-02 and GN-03, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

527. Baffinland has entered into an Agreement in Principle with the Government of Nunavut to work collaboratively on caribou research within the Project Area, including sharing data, and further plan to negotiate a contribution agreement and data sharing agreement for research to confirm this approach.²²⁴
528. Taking into account the proposed mitigation measures, including the small footprint affected relative to the available habitat in the region (2-5%), the Phase 2 Proposal is not expected to influence terrestrial wildlife and habitat at the population level.²²⁵

5.7.2.1 Cumulative Effects on Caribou Habitat

529. Parties, and in particular the GN, expressed concern regarding uncertainty early in the assessment with respect to the cumulative effects on caribou habitat as a result of the Phase 2 Proposal. The GN put forward several comments regarding habitat loss (see GN Technical Review Comments 9, 10, 14, 15).
530. Ultimately, Baffinland has addressed the GN's concerns around habitat loss through its update to the Terrestrial Environment Mitigation and Monitoring Plan (TEMMP). This plan has also been updated to address the GN's concerns with respect to the Zone of Influence (See NIRB Registry No. 324939). Importantly, Baffinland has agreed to undertake research to estimate the Zones-of-Influence and disturbance coefficients exerted by the Project on caribou, and will provide to NIRB updated estimates of cumulative habitat losses for caribou, at least every 5 years.²²⁶ This research will take into account the differences in caribou behaviour at lower and higher population levels in a manner that allows for equal consideration of IQ and science.
531. In addition, Baffinland and the GN will develop a Memorandum of Understanding related to regional caribou monitoring that may support a greater understanding of cumulative effects occurring in the region. When caribou numbers are sufficient to provide robust statistical analysis of distribution within the Zone of Influence, an aerial survey program (pending approval) can be implemented to document abundance and distribution of caribou in the RSA. Baffinland also hopes to support the determination of long-term caribou distribution patterns identified by a GN and Baffinland-sponsored caribou satellite collaring program.²²⁷

²²⁴ Agreement in Principle for the Mary River Research Contribution Agreement & Data Sharing Agreement between the Government of Nunavut and Baffinland Iron Mines Corporation, NIRB Registry No. 337254; Cover letter from Government of Nunavut dated October 8, 2021, NIRB Registry No. 337041.

²²⁵ Revised Addendum to TSD 27 - Cumulative Effects Assessment, NIRB Registry No. 326516.

²²⁶ See Commitment 65, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²²⁷ Agreement in Principle for the Mary River Research Contribution Agreement & Data Sharing Agreement between the Government of Nunavut and Baffinland Iron Mines Corporation, NIRB Registry No. 337254; Cover letter from Government of Nunavut dated October 8, 2021, NIRB Registry No. 337041.

5.7.2.2 Permeability of the Railway to Caribou

532. A particular topic of discussion during the public hearing sessions was the “permeability” of the railway, that is, whether caribou would cross the railway once built. Taking into account the fact that North Baffin caribou numbers are currently low, Parties had questions and expressed concerns with respect to whether caribou would, in fact, cross the railway, when they returned in greater numbers. Parties asked what could be done to manage and improve the permeability of the railway for caribou if portions of the railway posed a barrier to caribou movement as caribou return to the area in greater numbers.
533. In reply to these questions, Baffinland gave evidence that the North Railway has been designed to generally support caribou crossing, that is, caribou are expected to cross over long sections of the railway, and not depend on fixed points specifically designed for caribou crossing.²²⁸
534. In addition, Baffinland provided evidence of the traditional knowledge that had been shared with it with respect to caribou movement. Baffinland stated that the foundation of its conclusion that caribou would be able to cross the railway embankment was based on workshops conducted with Elders and harvesters with respect to the southern rail route. During those workshops, Elders and harvesters shared their knowledge of caribou within the surrounding landscape, and how these caribou walk up the sides of mountains and hillsides.²²⁹
535. While Baffinland understands that some parties may have expressed concerns with respect to whether caribou will cross rail embankments, the evidence, including traditional knowledge, indicates that this will occur, and in Baffinland’s submission, worry and speculation that caribou may not cross a railway is not evidence, and such opinions should not be favoured over the IQ that suggests otherwise.
536. Commensurate with the Precautionary Principle, Baffinland has still agreed through the review process to modify the North Railway design to increase confidence in caribou crossing. Commitments ID #33 and #67 outline the proposed modifications based on Intervenor and Inuit input:
- Use of Type 8 over Type 12 fill material for the entire alignment to create a smoother surface for crossing
 - For embankment heights under 4 meters the slope ratio will be modified to 1V:2H from 1V:1.5V, creating a gentler slope for crossing
 - 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 will 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 will include:

²²⁸ Public Hearing Transcript, November 4, 2019, Vol. 3, p. 576

²²⁹ Public Hearing Transcript, November 4, 2019, Vol. 3, p. 600-602

- 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.
- Dedicated crossings for land users and fish passage may also provide additional incidental crossing potential for caribou and include:
 - 30 level crossings to be installed at locations identified by community representatives during the workshop (subject to Transport Canada and Community Acceptance).
 - 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).

537. Baffinland undertook an additional analysis of permeability in consideration of the modifications to the design of the railway and using criteria developed through discussion with Intervenor. This analysis indicated that 66% of the North Railway can reasonably facilitate the crossing of caribou. This includes continuous sections that range from 100 meters to greater than 2000 meters (2 km).

538. Baffinland is committed to adaptively managing caribou crossings by adding additional crossings and addressing the slope of such embankments, where necessary. As outlined in Commitment 236, Baffinland has committed to working with Inuit and the TEWG to develop a Caribou Crossing Construction Decision Matrix, to define the exact process that will be used to make additional modifications to the railway for the purpose of facilitating caribou crossings. This decision matrix would be similar to the Additional Level Crossing Construction Decision Matrix submitted in October 2019, describing the process to add additional land user crossings.

539. These commitments provide a detailed plan for adaptively managing and improving the permeability of the railway corridor as the environmental circumstances, that is, an increase in caribou population, occurs, or as circumstances require.

5.7.2.3 Integration of IQ in Caribou Mitigation and Monitoring

540. Baffinland consistently recognizes the importance of IQ with respect to the assessment of wildlife and caribou in particular, stating the Terrestrial Wildlife Baseline and Impact Assessment (TSD-10) “Most knowledge about Baffin Island wildlife is held by Inuit land users.”²³⁰ This statement applied to the information available at the time of the original FEIS for Mary River was developed, as well as the Phase 2 FEIS Addendum.
541. In preparation of the Phase 2 Proposal, Baffinland conducted a series of workshops in 2015 and 2016 to collect contemporary information for the Mary River Project area and interaction with Phase 2 Proposal activities. One of those workshops was focused on caribou, contemporary land uses and caribou knowledge. The existing information on north Baffin Island caribou ecology was reviewed with participants so they could confirm its accuracy and provide additional details. Participants discussed caribou population dynamics, migration patterns, behaviour and food sources.²³¹ Taking into account the questions posed of Baffinland during the public hearing session in November 2019, Baffinland recognized that there were still concerns with respect to IQ and its integration in the assessment to date, as well as how it would be addressed in the Project on a going-forward basis.
542. Baffinland took those considerations seriously, and following the November 2019 hearing, entered into negotiations with the QIA with respect to addressing its outstanding technical issues, including those related to the integration of IQ. The negotiations culminated in the parties finalizing the ICA, which includes provisions for the development of an Inuit Stewardship Plan and Culture, Resources and Land Use Monitoring component that is expected to include considerations for caribou and caribou harvesting. With respect to the railway and caribou, Baffinland and QIA proposed the following commitments for the NIRB’s consideration:
- Baffinland is committed to using Inuit input to finalize wildlife crossings, land user crossings (subject to Transport Canada regulations and acceptance), slope designs, and adaptive management (i.e., future rail improvements or mitigation measures); (Commitment 163)
 - Baffinland is committed to coming to agreement on railway monitoring. A multi-dimensional approach to monitoring is proposed which would involve Inuit staff working under the Inuit Stewardship Plan monitoring according to Inuit interests as informed by the Inuit Committee, and QIA technical staff. (Commitment 162)
543. Since the initial release of the ICA, Baffinland has proposed several additional commitments towards caribou monitoring and management based on ongoing discussions with the QIA and the Hamlet of Pond Inlet. These additional commitments include:

²³⁰ TSD 10, Terrestrial Wildlife Baseline and Impact Assessment, Section 2.3, NIRB Registry No. 320562

²³¹ TSD 03, Phase 2 Workshop Report, NIRB Registry No. 320557

- To facilitate caribou monitoring and other Inuit driven research along the North Railway, three observation stations, that will double as emergency shelters, will be constructed at locations to be determined with relevant parties. (24 new positions to be held by Inuit will be created to staff the observation stations) (Commitment 237)
- Baffinland commits to working with the TEWG and the Inuit Committee to update the Caribou Protection Measures in the Terrestrial Environment Mitigation and Management Plan (TEMMP) for the Mary River Project within 6 months of the issuance of an amended Project Certificate 005. Baffinland commits to funding a caribou-focused IQ study with invite to the HTOs and supported by the QIA within 6 months of the issuance of an amended Project Certificate 005. These timelines are contingent on the QIA forming the Inuit Committee at least 6 months' prior the date of agreement.
- The IQ study will be scoped to ensure that it builds upon existing well-documented IQ, and includes verification of this information with Inuit knowledge holders. The results of this study will be used by QIA, the HTOs, the Inuit Committee and Baffinland to further update the Caribou Protection Measures, develop a Caribou Protection Map and project protection zones, and inform monitoring, mitigations and thresholds established through the Inuit Committee and the TEWG. (Commitment 223)
- Baffinland will work with the TEWG and Inuit Committee to develop a preliminary threshold for caribou group size that would trigger the temporary suspension of road and/or rail traffic. The threshold will be based on monitoring outcomes, operating experience, community input, and further discussion with the TEWG and Inuit Committee. (Commitment 220)

See also:

- Letter from Steve Pinksen, Assistant Deputy Minister, Government of Nunavut to Karen Costello, Executive Director, Nunavut Impact Review Board, dated August 11, 2020, NIRB Registry No. 331063
- Technical Supporting Document 10 – Terrestrial Wildlife Baseline and Impact Assessment, NIRB Registry No. 320562
- Summary of Baffinland's Commitments for the Phase 2 Expansion Project, as at September 30, 2020, FWS ID# GN-01 to GN-05, and GN-09, NIRB Registry No. 331628
- Summary of Baffinland's Commitments for the Phase 2 Expansion Project, as at September 30, 2020, FWS ID# WWF-FWS 07, NIRB Registry No. 331628
- Summary of Baffinland's Commitments for the Phase 2 Expansion Project, as at September 30, 2020, FWS ID# MHTO-03, NIRB Registry No. 331628
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Joint QIA Baffinland Caribou Protection Measures, NIRB Registry No. 291185
- Terrestrial Environment Mitigation and Monitoring Plan NIRB Registry No. 324939

5.7.3 Conclusions and Recommendations of Baffinland to the Board

544. The Phase 2 Proposal has been designed in such a way as to be protective of the terrestrial environment. In particular, Phase 2 will minimize habitat loss by planning the project within the existing mine's footprint. In addition, by moving from road to rail for transportation of ore, effects from dust and the physical presence of repeated vehicle passes will be substantially reduced. Of particular importance, instead of a truck passing by any fixed point every two to three minutes as is experienced today along the Tote Road, a train would only pass by every two to three hours. Lastly, the North Railway is being built to accommodate wildlife crossing over long, continuous sections, with approximately 66% of the North Railway being reasonably accommodating to crossing. These aspects of the Phase 2 Proposal are mitigation measures by design. In addition, Baffinland will continue to implement a robust monitoring program that will be strengthened by increased surveillance efforts by Inuit staffed at monitoring stations, through the Inuit Stewardship Plan and through agreement to support regional monitoring efforts. Baffinland IQ Advisors in each community can also help facilitate information exchange on these important topics.
545. Baffinland is confident in its predictions that the railway and railway operations will not affect the North Baffin caribou at a population level. However, Baffinland recognizes that there were concerns from Parties that the Project should improve upon the manner in which Inuit participation and IQ is integrated in decision-making, particularly with respect to caribou, given its cultural importance. Baffinland has addressed this concern by putting in place a robust adaptive management plan that is sufficiently flexible to permit changes to Project activities or infrastructure should they pose an obstacle to caribou migration.
546. Baffinland is pleased to report that through continued constructive dialogue with interested Intervenors, Baffinland has been able to reach resolution with the leading regulatory body with respect to wildlife management and the Regional Inuit Association on issues related to caribou.
547. On August 11, 2020, the GN confirmed to the NIRB that it has no unresolved technical issues in relation to its Final Written Statement (see NIRB Registry No. 331063).
548. In its Final Written Statement the QIA reconfirmed to the NIRB that as per their letter of July 7, 2020 with the successful implementation of the relevant ICA components, QIA also considers its technical issues related to caribou to be resolved (NIRB Registry No. 330682).
549. Baffinland is confident that the mitigation and monitoring plans proposed through the Phase 2 review objectively address any concerns that remain with respect to the protection of caribou and other wildlife in the North Baffin. Through the expansion of Baffinland's EMS, the strengthening of the Terrestrial Environment Working Group, the independent development of an Inuit Committee and Inuit led monitoring programs and progressive commitments towards adaptive management, there should be a high level of confidence that the Phase 2 Proposal will not have any significant adverse and negative effects on wildlife, including caribou.

5.8 Birds

5.8.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 12: Birds and Bird Habitat (Change in Risk of Injury or Mortality, Change in Habitat Quality or Availability), NIRB Registry No. 320564
- Literature Review for availability of snow geese data re. assessment, NIRB Registry No. 324733
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

5.8.2 Summary of Assessment Conclusions

550. Section 8.1.11.2 of the Guidelines requires consideration of the potential loss, alteration or alienation of habitat, impacts on migratory birds, and disruption of migratory routes.
551. Phase 2 Proposal activities and components have potential to result in a change in risk of injury or mortality and a change in habitat quality or availability for bird species.
552. The diverse environments found in the Project region offer an abundant supply of suitable bird habitats. Most bird groups such as raptors, seabirds, shorebirds, songbirds, waterbirds, and waterfowl are represented by at least a few species found throughout the area, including several species listed by the Committee on the Status of Endangered Wildlife in Canada or the Species at Risk Act. Staging and breeding habitats for numerous bird species are found in the Project area. Migratory birds are present in the area from late May to early September and into October in the marine environment, and there are several habitat sites in the region that are considered valuable to seabirds. Sirmilik National Park and Bylot Island Bird Sanctuary are situated in the Project region, but outside the Project footprint.

553. It is unlikely that bird mortality from construction activities associated with the Phase 2 Proposal will affect Birds and Bird Habitat at the population level. Mitigation is in place to reduce the probability of direct physical interactions with nests, eggs, and birds during site preparation activities, such as requirements to conduct pre-clearing nest surveys, implement activity setback distance buffers specific to species groupings for active nests, and develop nest management plans, including specific guidelines and procedures for nests located within recommended distance buffers. Mitigation has also been implemented (e.g., traffic speed limits, minimum aircraft flying heights, and bird diverters) to reduce the potential for collisions.
554. There is generally suitable habitat for bird species in the area and displacement from areas of disturbance to nearby suitable habitats should not result in changes to regional bird populations. Given the strong regulatory compliance measures associated with accidental vessel releases, it is unlikely that contaminant exposure will affect Birds and Bird Habitat at the population level. Shipping activity along the proposed shipping lane is not expected to result in indirect habitat loss because the disturbance associated with shipping activities will be of short duration and temporary.
555. The Phase 2 Proposal is not expected to influence birds and bird habitat at the population level due to planned mitigation and the small footprint affected relative to available habitat in the region. Based on the present assessment and planned mitigation, Project activities proposed as part of the Phase 2 Proposal are not predicted to result in significant adverse residual effects on birds and bird habitat. Monitoring for key representative species will continue under the Phase 2 Proposal.

5.8.3 Conclusions and Recommendations of Baffinland to the Board

556. Intervenors did not identify any concerns related to birds as a result of the Phase 2 Proposal.
557. The current Project Certificate terms and conditions relating to birds are robust, and no additional terms and conditions are required in order to address this topic.

5.9 Marine Environment and Marine Mammals

5.9.1 Key Reference Documents

- EIS Main Body (October 2018), NIRB Registry No. 320619
- Technical Supporting Document 16 Ice Conditions Report, NIRB Registry No. 320554
- Technical Supporting Document 17 – Marine Environmental Effects Assessment, NIRB Registry No. 320554
- Technical Supporting Document 18 – Ballast Water Dispersion Model, NIRB Registry No. 320583
- Technical Supporting Document 20 – Hydrodynamic Modelling Report – Milne Port, NIRB Registry No. 320606
- Technical Supporting Document 21 – Invasive Species Risk Assessment, NIRB Registry No. 320568
- Technical Supporting Document 22 – Ship Wake and Propeller Wash Assessment, NIRB Registry No. 320555
- Technical Supporting Document 23 – Conceptual Marine Offsetting Plan, NIRB Registry No. 320569
- Technical Supporting Document 24 – Marine Mammal Effects Assessment, NIRB Registry No. 320584

- TSD 28 Management Plans, see in particular Shipping and Marine Wildlife Management Plan, NIRB Registry No. 320608-32017, 320627-320633
- Information Request Responses, December 2018, Main Document, NIRB Registry No. 321614
- GN 68 Attachment 1: Full Response to GN 68 (IQ and Marine), NIRB Registry No. 321614
- GN 73 Attachment 1: Summary of Ship Track Data 2017-2018, NIRB Registry No. 321614
- Appendix 2 The Qikiqtani Inuit Association IR Attachments, NIRB Registry No. 321614
- Appendix 4 DFO IR Attachments, NIRB Registry No. 321614
- Appendix 12 Overview of Marine Operations, NIRB Registry No. 321614
- Advance Technical Comment Responses, January 2019, Main Document, NIRB Registry No. 322554
- DFO 3.2.3 Attachment 1: Table 1 Ship-based Observer Program - Marine Mammal Observations and Survey Time (2013 to 2015), NIRB Registry No. 322556
- QIA 68 Attachment 1: Ice Interaction Design Criteria for Detailed Design - Ore Dock - Baffinland Iron Mines: Mary River Expansion Stage 3, December 13, 2018, NIRB Registry No. 322558
- QIA 83 Attachment 1: Table 1 Underwater Noise Scenarios modelled in TSD #24, Appendix B, NIRB Registry No. 322558
- QIA 85 Attachment 1: Tables 1-8 (mooring/berthing scenarios), NIRB Registry No. 322558
- Technical Comment Responses (March 2019), Main Document, NIRB Registry No. 323799-323805
- DFO 3.1.7 Attachment 1 2018 Ship Track Figures (NIRB Registry No. 323799-323805)
- Additional Assessment Info - May 1, 2019, Ballast Water Certifications, NIRB Registry No. 324745, 324747-324748
- Follow-up Information to ECCC Comment 3.08, 3.09 – Shipping CACs Errata, Follow-up Information to ECCC Comment 3.08, 3.09 - Black Carbon Emitted from Ore Carriers, Sealift Vessels and Tankers, CACs from Shipping, NIRB Registry No. 324749-324750
- Mary River Project - Phase 2 Proposal - Effluent Loadings to Milne Inlet (Technical Comment ECCC 3.17), NIRB Registry No. 324732
- Mary River Project – Phase - Supplement to Technical Supporting Document 27 - Cumulative Effects Assessment, NIRB Registry No. 325014
- Assessment of Icebreaking Operations during Shipping Shoulder Seasons on Marine Biophysical Valued Ecosystem Components (VECs), NIRB Registry No. 325031
- Baffinland Phase 2 Acoustic Modelling: Responses to Technical Comment DFO 3.3.5 and 3.5.5 — Additional modelling for one capesize ore carrier at 13 kts at Eclipse Sound, NIRB Registry No. 324943
- Baffinland Phase 2 Acoustic Modelling: Responses to Technical Comment DFO 3.5.4 - Listening space reduction analysis at 1 kHz for 2018 acoustic monitoring data, NIRB Registry No. 324944
- Baffinland Phase 2 Acoustic Modelling: Responses to Technical Comment DFO 3.5.10 - Sound level (SPL) contours to levels <120 dB re 1 µPa, NIRB Registry No. 324945

- Baffinland Vessel Traffic and Anchorage Study Final Report, NIRB Registry No. 324946
- Additional Assessment Info, June 10, 2019, Ballast Water Dispersion Sensitivity Simulations, NIRB Registry No. 325491
- Additional Assessment Info, July 2019 Responses to Request for North Water Polynya Mapping, NIRB Registry No. 325730
- Impact of icebreaking activities within the approaches to the Milne Inlet Port Site (Northern Shipping Route to Milne Port), NIRB Registry No. 325731
- Transport Canada Comments/Requests to Proponent – June 2019, NIRB Registry No. 325732
- Revised Memo -Follow-up Information to ECCC Comment 3.08, 3.09 – Shipping CACs Errata, Follow-up Information to ECCC Comment 3.08, 3.09 - Black Carbon Emitted from Ore Carriers, Sealift Vessels and Tankers, CACs from Shipping, NIRB Registry No. 325742
- RSA Sea-ice for Polar Bears, NIRB Registry No. 325895
- TM2- DFO: Rationale for identifying "Icebreaking effect on sea ice habitat for arctic cod species" as a level 1 interaction in the icebreaker effects assessment, NIRB Registry No. 325902
- Clarification – Open Water Period as Related to Polar Bear, NIRB Registry No. 325901
- Daily Ship Exposure Periods for Narwhal During Shoulder and Open Water Season Relevant To The 135, 120 And 110 Decibel Noise Fields, NIRB Registry No. 325929
- Additional Assessment Info, August 2019
- Draft Communication Protocol for Shipping Activities, NIRB Registry No. 326507
- DRAFT Baffinland Early Shipping Season – Operational Guide, NIRB Registry No. 326508
- Revised Addendum to Technical Supporting Document 27 - Cumulative Effects Assessment, NIRB Registry No. 326516
- Final Written Submissions, Main Document (October 2019), NIRB Registry No. 327139-327149
- Appendix A Response to Pond Inlet (Mittimatalik FWS), NIRB Registry No. 327139-327149
- Appendix B Response to The Mittimatalik Hunters and Trappers Organization, NIRB Registry No. 327139-327149
- QIA-51 Attachment 1: Table Summary of aerial survey-derived density data, NIRB Registry No. 327139-327149
- DFO 3.8.1 Attachment 1: Tables associated with DFO 3.8.1 Response (Noise Exposure Periods), NIRB Registry No. 327139-327149
- WWF-FWS 04 Attachment 1: Vessel Speeds in RSA during 2019 Shipping Season, NIRB Registry No. 327139-327149
- Appendix N Attachments Related to the Marine Environment, NIRB Registry No. 327139-327149
 - Attachment 1: Memo clarification respecting Shipping Through the Northwest Passage

- Attachment 2: Technical Memo Analysis of 2018 Narwhal tagging data during fall shoulder season
- Attachment 3: Ballast Water Dispersion Modelling
- Attachment 4: 2019 Marine Monitoring Update Memo
- Attachment 5: 2019 Shipping Season Mitigation Summary
- Attachment 6: Review of Mary River Phase 2 Assessment Conclusions on the Effects of Icebreaking to Narwhal prepared by Hemmera, dated October 15, 2019, NIRB Registry No. 327146.
- Supplemental Technical Submission Responses, February 2020, Main Document - Phase 2 Comment Responses, NIRB Registry No. 328634-328635
- Appendix B Fisheries and Oceans Canada - 2019 MARINE MAMMAL MONITORING PROGRAMS – UPDATED PRELIMINARY RESULTS, NIRB Registry No. 328634-328635
- Additional Assessment Information, August 2020, Technical Memo: Early Warning Indicators for Marine Mammals, NIRB Registry No. 331325
- Additional Assessment Information, September 2020, Memo: Operational Flexibility Assessment, Phase 2 Proposal, NIRB Registry No. 331634
- Additional Assessment Information, October 2020, Technical Memo: Potential Effects of Fuel Spills on Polar Bears along the Northern Shipping Route, NIRB Registry No. 331794
- Pre Hearing Deliverables (December 18, 2020), Summary of Significance Considerations Phase 2 Proposal – Mary River Project, NIRB Registry No. 332183
- Pre Hearing Deliverables (December 18, 2020), Reference Guide to Key Topics, NIRB Registry No. 332182
- Technical Reviews of Ocean North Draft Passive Acoustic Monitoring of Underwater Radiated Noise from Ships in Eclipse Sound, Nunavut (2018-2019), January 2021, NIRB Registry No. 332558
- Attachment 1 Technical Memo: JASCO Review of Jones 2020 Draft Report: Passive Acoustic Monitoring of Underwater Radiated Noise from Ships in Eclipse Sound, Nunavut (2018-2019) NIRB Registry No. 332558
- Attachment 2 Technical Memo: Golder Review of Jones 2020 Draft Report: Passive Acoustic Monitoring of Underwater Radiated Noise from Ships in Eclipse Sound, Nunavut (2018-2019) NIRB Registry No. 332558
- BIM_subm_golder_dfo_tech_rev_LGL2015_aerial_survey, January 2021, NIRB Registry No. 332668
- Attachment 1 – Golder Peer Review: Marine Mammal Aerial Surveys in Eclipse Sound, Milne Inlet and Pond Inlet, 1 August – 17 September 2015
- Attachment 2 – DFO Canadian Science Advisory Secretariat Science Advisory Report 2020/051: Estimated Abundance and Total Allowable Landed Catch for the Eclipse Sound Narwhal Stock
 - BIMC Response to MHTO Written Questions, January 2021, NIRB Registry No. 332834
 - BIM Responses to Questions, March 2021, 334146-334147
- NIRB-75 Attachment 1: Icebreaking Impacts on Ringed Seal
- NIRB-79 Attachment 1: A summary of key monitoring-related feedback/suggestions provided to Baffinland by the Working Groups since 2018

- QIA-9 Attachment 1: Ringed Seal Moulting
- MHTO-18 Attachment 3: IQ Considered in Ringed Seal Assessment
- MHTO-21 Attachment 1: Description of the Initial OITRs Proposed by Baffinland
- MHTO-26 Attachment 1: A List of a Scientific Studies for which the Findings are Consistent with the Impact Predictions Made for Narwhal
- CR-5 Attachment 1: Golder Review of Paper on Cortisol Levels in Narwhal
 - GoC-4 Attachment 1: AIS Response Protocol
 - Appendix 12 TARPs and Toolkits, AMP
- FAQ Hearing Pamphlet, April 2021, NIRB Registry No. 334353
- BIM Tech Memo Re Preliminary Sum of 2020 Narwhal Monitoring Programs, April 2021, NIRB Registry No. 3334437, 334440
- Baffinland Response to Comments Re Preliminary Narwhal Monitoring, June 2021, NIRB Registry No. 335788
- BIMC Response to QIA, DFO and PC Submissions, August 2021, NIRB Registry No. 336644
- Baffinland Written Comments, September 2021, NIRB Registry No. 336778
- Technical Memo: Update on the Status of Marenzelleria Species on Baffin Island (Golder), Sept. 13, 2021, NIRB Registry No. 336782
- BIM Preliminary 2020 Narwhal Monitoring Update, Sept. 13, 2021, NIRB Registry No. 336783
- Update to the Preliminary Summary of the 2020 Marine Mammal Monitoring and 2021 Adaptive Management (Update 2), October 27, 2021, NIRB Registry No. 337190
- Update on Preliminary Results of 2021 Ringed Seal Monitoring Program, October 27, 2021, NIRB Registry No. 337194
- Marine Presentation, NIRB Registry No. 324104
- Marine Presentation, NIRB Registry No. 327285
- Marine Presentation, NIRB Registry No. 331377
- Marine Presentation, NIRB Registry No. 332553
- Marine Environment Presentation - Additional Slides RE Noise, NIRB Registry No. 332816
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517

- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

5.9.2 Marine Environment

5.9.2.1 *Summary of Assessment Conclusions*

558. The marine environment assessment considered the interactions of the construction and operation of an expanded port as well as increased intensity of the shipping operations on the marine environment
559. Specifically, the marine environment Technical Supporting Document (TSD-17) provides an assessment of the Phase 2 Proposal's effects on the marine environment (marine water and sediment quality), marine fish habitat, and Arctic char health. Marine Birds are assessed in TSD-12. Sea ice is considered in the Assessment of Icebreaking Operations (collectively, the Marine Environment Assessment). These VECs were reflected in the FEIS Guidelines, and were selected based on a number of criteria including, for example, being identified as culturally, ecologically and economically important to Inuit.
560. In accordance with the methodology described in this Final Written Statement, mitigation measures to minimize or avoid adverse effects and identification of potential residual impacts following implementation of mitigation, were carefully considered in coming to the determination of significance with respect to Project impacts on selected VECs.
561. Based on both science and IQ concluded Marine Environment Assessment concludes:
- Project activities proposed as part of the Phase 2 Proposal are predicted to result in insignificant adverse residual effects on established VECs (marine water and sediment quality, marine fish habitat, and Arctic char health).
 - mitigation measures to avoid and mitigate effects, the Project will not have significant impacts on marine fish habitat (TSD-17), Arctic char health (TSD-17), marine birds (TSD-12) or sea ice (Assessment of Icebreaking Operations).
 - a robust monitoring plan and a detailed adaptive management plan will ensure that if unanticipated significant effects of the Project do occur, they can be quickly identified and effectively mitigated.
562. Baffinland emphasizes its years of operational experience in the Arctic. With the benefit of this experience, Baffinland is able to say very confidently to the Board that the mitigations that have been committed to are feasible and implementable, and again reconfirms they will be fully implemented.
563. This Final Written Statement focuses primarily on marine water and sediment quality (and ballast water management and prevention of invasives in particular), topics of particular interest that were the subject of information requests, technical comments and written and oral responses to the Intervenor and Board during the Phase 2 NIRB process. However, Baffinland assures the Board that the large volume of materials referenced under the "Key Documents" section of this summary provide a detailed and comprehensive assessment which address all topics required under the EIS Guidelines.

5.9.2.1.1 Summary of Marine Environment Assessment Data Set

564. The Marine Environment Assessment was based on a robust and comprehensive data set, including:
- Continuous record of Project Specific Inuit Qaujimajatuqangit dating back to 2006 as well as relevant third party literature
 - Site specific data spanning 10+ years collected through original baseline studies supporting the Approved Project, as well as from Early Revenue Phase monitoring programs
 - Phase 2 specific modelling (ballast water, fuel spill, hydrodynamics, ship wake and propeller wash) and risk assessment (invasive species)
 - Literature (over 30 regional studies, peer reviewed journals, grey literature from government and industry)
 - Other environmental assessments
 - Expert opinion
565. The Phase 2 Proposal builds on the extensive baseline studies and assessments carried out since 2011 for the larger Approved Project and builds on the knowledge base of the FEIS and previous FEIS addendums. The updated marine environment baseline report includes new information collected or published since submission of materials for the Approved Project. The assessment of ballast water for Phase 2 included key updates including:
- 2019 updates of the 2018 Milne Inlet oceanographic and ballast water data;
 - Assessments of potential changes to temperature and salinity in ambient water; and
 - Ballast water-modelling results.
566. There is comprehensive evidence before the Board that IQ was considered and weighted along with western science in this assessment. Inuit knowledge was shared with Baffinland through interviews and workshops, community meetings, input from Inuit staff involved in field programs, reports developed the QIA and through engagement with the MHTO. Additional IQ was shared through the NIRB process.
567. IQ was considered and incorporated at each stage of the effects assessment development, specifically informing:
- the baseline assessment (i.e. providing critical knowledge of the environment in the LSA and RSAs, as well as supplementing existing research on marine mammal migratory patterns, species present in the area),
 - to identify valued ecosystem components for the project (e.g. selecting marine mammals, bird, sea ice and marine fish as key areas of the environment that require assessment given their importance to Inuit),

- to identify potential Project effects (i.e. fulsomely examining potential effects of underwater noise on marine mammals because Inuit have advised are highly sensitive to noise disturbances), and
- in the development and application of mitigation measures (e.g. integrating Ragged Island as a location for AIS monitoring, the establishment of 'no-go' zones along the west coast of Milne Inlet and within Koluktoo Bay and the removal of winter shipping from the Proposal as a direct result of IQ input and community feedback).

568. Baffinland's expert team provided further details and specific examples of their use of IQ in this assessment in writing in response to information requests, technical comments, as well as verbally during the technical meetings and public hearings. There is significant and robust evidence on the record of Baffinland's incorporation of IQ.

5.9.2.1.2 Summary of Key Marine Environment Assessment Mitigations

569. As noted above, Baffinland's experts took into account the robust mitigations that were developed for Mary River Project and subsequent amendments in their significance determinations. As all parties to this assessment can appreciate, Baffinland worked very hard with Intervenor to build on this work in order to ensure that Phase 2 will proceed in a manner that will not cause significant negative effects and in a manner that respects Inuit values. Baffinland is pleased to report to the Board that the mitigations in place for Phase 2 address the feedback received to the fullest extent possible.

570. As set out in detail in the Disposition Table Baffinland has committed and proposed to NIRB extensive measures to avoid and mitigate potential impacts to the marine environment based on agreement with regulators and knowledge holders.

571. The additional work and additional mitigations that have been developed relevant to this topic can give the Board even more confidence in Baffinland's conclusions of non-significance.

572. Baffinland has described these mitigations in comprehensive detail throughout this Final Written Statement but wishes to highlight the following in relation to these topics:

- Adaptive Management based on IQ and Western Science: in the ICA and NIRB Commitment List, Baffinland has presented a comprehensive and systematic approach to adaptive management that integrates the concept of low, moderate and high thresholds and responses for key indicators in the marine environment. The AMP will be continuously informed and updated based on the results of newly established independent Inuit led monitoring structures in addition to Baffinland's ongoing monitoring. As noted above, Inuit will have enhanced decision-making control with respect to Project operations to increase Inuit certainty with respect to the Project. .

573. The relationship between the ICA and Baffinland's Adaptive Management Plan is described in more detail elsewhere in this Final Written Statement, but for reference the most relevant steps to address potential impacts to the marine environment include:

- Baffinland and the QIA agree to the Final Adaptive Management Plan and adaptive management components of sub-plans (i.e. Marine Monitoring Program and Shipping and Marine Wildlife Management Plan)
- The QIA establishes and implements the Inuit Stewardship Plan, including the Culture, Resource and Land Use Monitoring Program (e.g. to track char harvest success, changing use of ice);
- Review of Monitoring Program results against predetermined indicators and thresholds; and
- Implement predetermined responses and mitigation measures as necessary.

5.9.2.1.3 Mitigations Specific to Port Construction

574. Mitigation measures that will be applied during the anticipated Port construction period (likely over two open water seasons) will include best management practices during in-water construction including:
- Silt curtains;
 - An underwater noise management plan; and
 - Following guiding principles and DFO direction for offsetting habitat impacts.
 - Consideration for best practices used in the construction of Ore Dock # 1 and the Freight Dock at Milne Port.
 - Lessons learned from other projects in the regional study area will also be considered
575. Taking all of these mitigation measures into account, in addition to the robust regulatory oversight of DFO in the development and issuance of the required *Fisheries Act* Authorization, Baffinland is confident the construction of the ore dock facilities will not have significant adverse environmental effects.

5.9.2.1.4 Mitigations Specific to Port Operations

576. Mitigations are designed primarily to address the management of ballast water to protect water quality (temperature and salinity) and to prevent the introduction of invasive species. Further discussion of mitigation measures to prevent the release of aquatic invasive species is discussed in the section below.
577. In addition to the industry leading measures that are in place for the project, this topic is also the subject of comprehensive domestic and international regulatory controls. Transport Canada enforces strong regulations to prevent invasive species from shipping. These regulations are the *Ballast Water Regulations* (under the *Canada Shipping Act, 2021*) which came into force in June 2021 and replaced the *Ballast Water Control and Management Regulations*.
578. These regulations address Canada's obligations under the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004. As stated by Transport Canada, these regulations reflect years of discussions with industry, scientists, and regulators in 85 other countries.

579. Baffinland is confident that compliance with federal regulations on ballast water management, combined with the additional measures committed to by Baffinland, and detailed compliance monitoring for ships and ongoing monitoring and risk assessment, the effects on water quality will be non-significant, ballast water will not result in changes to water temperature or salinity, or result in the introduction of invasive species.

5.9.2.1.5 Marine Water Quality

580. Ballast water modelling was used to assess potential effects of ship ballast water discharges in the marine environment. In 2018, a three-dimensional hydrodynamic model was developed by global experts using site-specific oceanographic data used to predict potential changes to the marine environment that could occur as a result of ship ballast water releases. This included running a three-month simulation to evaluate mixing and dispersal of ballast water in Milne Inlet. That was for during and after the open-water season comparing current temperature data and salinity conditions to those predicted with the project²³².
581. In 2019, the model was updated using oceanographic data collected in Milne Inlet and was shown to perform well in comparison to in-field measurements. Based on recommendations from Fisheries and Oceans Canada and other Intervenor, a sensitivity analysis was undertaken in 2019 to evaluate the robustness of model predictions using a broader range of temperature and salinity values for the release of ballast water than would normally occur during normal operations. Modelling results demonstrated that the effects of ballast water releases in the marine environment under a Phase 2 scenario would not be detectable above normal conditions and would not cause a measurable impact on the temperature and salinity of the waters in Milne Inlet.
582. As illustrated during Baffinland's presentation to the Board on Marine Environment in January 2021, Ballast water discharges will be only a small fraction over the volume of water in Milne Inlet. Given that temperature and salinity are key determinants of species distributions, these results lend confidence to impact predictions that ballast water discharges will have negligible impacts on marine fish and fish habitat²³³.
583. Baffinland's proposed ballast water management practices for Phase 2 will exceed federal requirements under Transport Canada's ballast water control and management regulations and are thus considered precedent setting.

²³² TSD 18 Ballast Water Dispersion Model, NIRB Registry No. 320583

²³³ NIRB Registry No.. 325491, 327139-327149

584. All vessels calling on Milne Port are required to perform an open-ocean ballast water exchange in the North Atlantic.²³⁴ This initial mitigation effectively reduces the risk of invasive species introductions while the vessel is travelling to Milne Port and before it has entered the marine RSA/Nunavut Settlement Area. International regulations will require all vessels to maintain onboard treatment systems by 2024 (D2 Standard). In addition, Baffinland has made a commitment in response to DFO that vessels with on-board treatment systems are required to both exchange as well as treat their ballast water.
585. Transport Canada regulations call for either exchange or treatment but not both. The requirement for exchange and treatment for ships exceeds existing federal requirements. Baffinland currently conducts ballast water monitoring in the form of salinity measurements at Milne Port to verify that exchange has occurred on the vessels. Baffinland has further committed to work with DFO on a risk based biological sampling program that will include a component for the monitoring of contaminants from each port and treatment type to assess potential chemical risks (e.g., from foreign ports or treatment residuals). Further risk-based assessment of contaminants will be conducted, using methodology and approaches developed in relation to the risk based assessment, in the event project vessels switch from exchange plus treatment to just treatment of ballast water²³⁴.
586. With these measures in place, the potential effects of ballast water on water quality (and in particular temperature and salinity), are expected to be not significant.

5.9.2.1.6 Prevention of Invasive Species

587. The measures in place at the Mary River Project to prevent risk of aquatic invasive species are the most stringent in Canada and the Arctic. Recognizing the importance of Milne Inlet and the unique nature of the Arctic environment, for Phase 2 Baffinland has committed to maintain and enhance its existing comprehensive mitigation measures under Project Certificate No. 005 that go beyond existing regulatory requirements for the management of risks associated with aquatic invasive species. These commitments have been established through extensive consultation with DFO and QIA:
- 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)²³⁵.
 - 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. Baffinland will also report the duration and volume that occurs at each discharge point concurrent with biological testing that will be conducted to support the risk based methodology under DFO 3.6.5, and for one additional year following commissioning of the second

²³⁴ See Commitment 205, 207, BIM Phase 2 Disposition Table and Commitment List Appendices A-C of this submission

²³⁵ See Commitment 203, 204 BIM Phase 2 Disposition Table and Commitment List Appendices A-C of this submission

ore dock, if required. A dataset with discharge coordinates and the durations and volumes of discharges at each discharge point will be provided to MEWG members as part of annual reporting²³⁵.

- 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. By 2024, for ore carriers originating from Canadian waters (i.e., domestic trips) Baffinland will only charter vessels equipped with treatment systems, and will require those vessels to treat their ballast under the D2 Standard and 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 2021 Standing Instructions to Masters²³⁶.
- 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 changes 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 be expected to be discharged at Milne Port under Phase 2 operations if prior exchange were to be discontinued. Baffinland will conduct a risk-based assessment of contaminants that could be released into Milne Inlet in the event project ore vessels switch from exchange plus treatment to just treatment of their ballast water²³⁶.
- Baffinland has committed 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 established²³⁷.
- Baffinland has committed 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 season²³⁸.
- 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 high biological risk species or groupings of species of

²³⁶ See Commitment 205,206 BIM Phase 2 Disposition Table and Commitment List Appendices A-C of this submission

²³⁷ See Commitment 105 BIM Phase 2 Disposition Table and Commitment List Appendices A-C of this submission

²³⁸ See Commitment 208,209 BIM Phase 2 Disposition Table and Commitment List Appendices A-C of this submission

concern and associated response plans through the process outlined in response to DFO 3.6.9 and DFO 3.6.10 and to refining that list with DFO on an ongoing basis starting in 2021/23.

Baffinland's marine environment assessment concluded that with the above-noted measures, the risk of introducing aquatic invasive species in Milne Inlet is low. However, Baffinland has committed to developing a management and response approach in the unlikely event that a non-indigenous species is identified during monitoring, which will be incorporated into the aquatic invasive species monitoring program.

588. This preventative and proactive approach is extensively recognized in the NIRB Commitment List, the ICA, proposed revisions to the Project Certificate and Baffinland's EMS, inclusive of the Adaptive Management Plan, which together will continue prevent introduction of invasive and in the very unlikely event of an introduction, will also ensure that prompt and effective responses occurs. As noted elsewhere, the Inuit led monitoring under the ISP will help inform whether new mitigations are necessary as well as the development of adaptive management measures specified in the AMP.
589. A more detailed list of Baffinland commitments on ballast water management and hull fouling can be found in the NIRB Commitment List under DFO 3.6.1 to DFO 3.6.6 addressing technical comments from DFO , Transport Canada and QIA.

5.9.2.1.7 Monitoring for Invasive Species

590. It is important to emphasize that no Project-related invasive species have been found through the aquatic invasive species monitoring program. Baffinland has committed to following DFO's published Rapid Response Framework in the event that a non-indigenous species is introduced and/or becomes established. Any updates will be incorporated in this Response Framework as recommended by DFO and the MEWG. This protocol includes independent verification of specimens by outside laboratories or experts to confirm identification.
591. A recent example illustrates the conservatism and robust approach to preventing the establishment of any invasive as a result of Mary River operations.
592. A marine worm of the genus *Marenzelleria* was detected in benthic samples taken in Milne Port between September 2016 and 2020. The *Marenzelleria* were initially identified as *M. viridis*. This prompted further analysis as that species was on an invasive species watchlists. However, specimens were then sent to Dr. Radashevsky of the Russian National Scientific Center of Marine Biology because of his expertise in *Marenzelleria*. Dr. Radashevsky undertook detailed examinations and concluded, with confidence, that the specimens were *M. arctica* which is an Arctic species and not considered to be invasive. This process of independent verification is summarized in a Technical Memorandum from Golder experts, dated August 17, 2021 (NIRB Registry No. 336782) as follows:

"UPDATE ON THE STATUS OF MARENZELLERIA SPECIES ON BAFFIN ISLAND

*This technical memorandum provides an update on the status of specimens from the genus Marenzelleria, collected in various locations within Milne Port as part of Baffinland Iron Mine Corporation's (Baffinland) Non-Indigenous Species and Aquatic Invasive Species (NIS/AIS) monitoring program. These specimens were initially identified as M. viridis, a species documented as invasive to European waters and placed on invasive species watchlists and flagged as High Risk for the Project area. This update is provided subsequent to an independent review of the specimens by a global expert on Spionidae (the order of marine worms that includes Marenzelleria), which resulted in the reclassification of the specimens as M. arctia. As suggested by its name, M. arctia is an arctic species, originally described from collections in North American arctic waters (Chamberlin 1920); accordingly, **M. arctia is not considered a potential NIS/AIS in the Regional Study Area including Milne Port.** Baffinland will continue to monitor for the presence of any Marenzelleria species in the Milne Port area and, as a precaution, Baffinland will treat all identified Marenzelleria specimens as having the potential to be invasive until the classification of M. arctia is confirmed through molecular methods. **This corrected classification confirms that, to date, no Project-related invasive species have been found through the AIS/NIS monitoring program.**" [emphasis added]*

593. See also the Aquatic Invasive Species (AIS) Monitoring Program Report, September 9, 2021 (NIRB Registry Nos. 336738-336740).
594. These expert reports also confirm that multiple lines of evidence (biodiversity, environmental conditions) also support the identification of *M. arctia*, a non-invasive species native to the Arctic.
595. This provides an example of the preventative and proactive approach to monitoring for invasive species. It also confirms that to date, no Project-related invasive species have been found at Milne Port.
596. Taking into account the extensive measures under Federal regulations, and the additional commitments of Baffinland to manage and monitor ballast water and to conduct detailed monitoring, the risks of invasive species are fully managed and are expected to be non-significant.

5.9.2.1.8 Dust and the Marine Environment

597. With the increased port activities under Phase 2, it is predicted that more airborne ore dust will be present at Milne Port. Air quality modelling shows that there may be some low-level increases in total suspended sediments and metal loading in localized areas around the ore dock. These increases are not predicted to be significant given the natural occurrence of iron ore in the marine receiving environment and the dispersion that will occur through local coastal processes.
598. To confirm and monitor effect predictions, ongoing sediment sampling and fish tissue sampling will take place. Since the start of operations, no significant increase in marine sediment iron concentrations have been recorded relative to baseline condition. Similarly, metal concentrations in fish tissue have been relatively consistent between 2010 and 2020 and are aligned with the normal natural variability expected.

599. In response to the Board's 2019-2020 Annual Monitoring Report which identified questions about this topic, a technical memo summarizing these results was provided to NIRB in January 2021 (NIRB Registry ID No. 332710). As well as the 2020 MEEMP/AIS Annual Monitoring Report submitted to NIRB.
600. Baffinland has heard in their engagement with communities that dust is an ongoing concern. As communicated to the Hamlet of Pond Inlet (see Baffinland Written Comments of September 10, 2021), Baffinland is implementing measures at site to address dust to the extent possible in the current context of a trucking operation as well as Phase 2:

"129. The following submission is in reply to certain statements made by the HPI respecting their concerns regarding dust in the vicinity of the Project. As noted above, a full submission was provided to HPI previously on this topic and is attached to the Engagement Summary Update dated September 9, 2021.

130. The memo referenced above provides an update on the implementation status of the following three commitments respecting dust mitigation, as of May 31, 2021:

- Baffinland will develop and fund a monitoring program that is Inuit led to monitor the extent of visual dust in the Project Area as well as a snow sampling program (see Commitment No. 234, Commitment List, NIRB Registry Doc.# 334537);*
- Baffinland will increase the number of dust collectors at site in consultation with Inuit from the North Baffin and the Terrestrial Environment Working Group (see Commitment No. 233, Commitment List, NIRB Registry Doc.# 334537);*
- Baffinland will conduct a third party major audit that will involve Inuit to identify the greatest sources of dust (see Commitment No. 230, Commitment List, NIRB Registry Doc.# 334537).*

131. Since May 31, 2021 Baffinland has continued to progress the above identified commitments and can provide the following updates:

- Baffinland continues to support QIA's independent Inuit led project to assess dust related to the Mary River Project, and is eager to see the outcomes of sampling conducted in the Spring of 2021*
- Baffinland has installed a total of 9 additional dust collectors at Milne Port and along the proposed rail deviation. An additional 6 dust collectors will be installed at a height of 1m (as opposed to the standard 2m height) based on community requests. The locations of the dust collectors were presented to the Terrestrial Environment Working Group in June 2021, without opposition or alternative locations proposed.*
- Baffinland has acquired the services of Nunami Stantec to conduct the third party major audit of dust. Nunami Stantec will be working directly with a panel of Inuit*

representatives from the 5 North Baffin communities, selected by both Hamlets and Hunters and Trappers Organizations. The first planned field work is expected to commence as early as the end of September, 2021.

132. As stated above, Baffinland appreciates the opportunity to continue to work with the HPI towards the resolution of outstanding issues related to the Phase 2 Proposal. The work described in the memo is a clear demonstration of the value Baffinland places on Inuit knowledge and priorities for management and development in the Mary River Project Area.”

601. In its Written Comments of September 10, 2021 Baffinland also provided a comprehensive response to photos shown during the MHTO presentation that appeared to be discoloration on snow, including around a seal hole in Milne Inlet. As set out in that response, Baffinland provided a further photo comparison to provide additional context regarding the presence of dust in the Milne Inlet area. The most current satellite imagery is also provided in that submission, which shows a considerable improvement in the spread of dust into Milne Inlet from Milne Port. While further analysis is ongoing and will be presented in Baffinland’s 2021 Annual Report to the NIRB, it does look to demonstrate that the application of the dust cover DusTreat to the Milne Port stockpiles is working. There is variability in the extent or magnitude of dust emitted from Project infrastructure, and effective mitigations can be applied to mediate this.

5.9.2.2 Conclusion and Recommendation to the Board

602. Modeling predictions and monitoring results to date indicate that no significant adverse effects to any of the VECs included in the Marine Environment Assessment have occurred, or are predicted to occur. Taking into account the robust mitigation and monitoring programs described above and adaptive management, the Board can be confident in the conclusions of the Marine Environment Assessment and the mitigations proposed under Phase 2.
603. Baffinland’s expert assessments²³⁹ and ongoing monitoring²⁴⁰, collectively support the conclusion that dust from Port operations will be mitigated and that there will not be significant impacts on water quality, sediments, or fish and marine wildlife. As noted above, the existing monitoring program will be enhanced by independent Inuit led monitoring that will be established prior to Phase 2 operations.
604. Baffinland has been proactive and precautionary in committing to measures to avoid or mitigate adverse impacts to the marine environment. With the NIRB Commitment List, robust Project Certificate terms and conditions, as well as ongoing monitoring (led by Baffinland in accordance with the Project Certificate and also independent Inuit led monitoring) and adaptive management, the effects on the marine environment are expected to be not significant.

²³⁹ NIRB Registry No. 320554, 322556, 323799-323805

²⁴⁰ NIRB Registry No. 336738-336740 and 332710.

5.9.3 Marine Mammals

5.9.3.1 Summary of Assessment Conclusions

605. Baffinland recognizes the importance of marine wildlife to Inuit residents of the North Baffin region cannot be overstated. Throughout its assessment, as well as Project operations, Baffinland has given great weight to the IQ that marine wildlife is an essential component of the North Baffin ecosystem, and that their harvest is an integral part of Inuit culture.
606. The primary documents on Baffinland’s assessment of effects on marine mammals are the “Technical Supporting Document TSD 24 – Marine Mammal Effects Assessment²⁴¹” produced by Golder Associates, a leading Canadian environmental consulting firm with extensive experience and expertise in the field of marine biology and marine mammal science and “Assessment of Icebreaking Operations during the Shipping Shoulder Season on Marine Biophysical Valued Ecosystem Components²⁴²”. The effects assessment for marine mammals focused on narwhal, ringed seal, beluga whales, bowhead whales, and polar bear, as directed by the NIRB Guidelines.
607. At the outset, Baffinland wishes to state that it appreciates the intensive efforts of Intervenor to develop comprehensive and innovative solutions to the technical issues raised throughout the review process. Baffinland also wishes to recognize the detailed and careful work of the key regulatory authorities who participated in this assessment and shared their technical expertise.
608. In response to requests from Intervenor and Parties, Baffinland carried out a very significant amount of additional assessment work on this topic. As reflected in the sheer volume of materials listed under “Key Reference Documents” above, Baffinland was responsive to the information requests and technical comments of interveners, and the evidence that is before the Board is of the highest professional standard, detailed, and carefully considered. Baffinland submits that the information that forms the evidence for the Board’s decision overwhelmingly supports the conclusion of the FEIS Addendum, of no significant effects.

241 NIRB Registry No. 320584

242 Footnote to 325033-325047

609. Baffinland is pleased to report that working in collaboration with DFO, we were able to resolve each and every one of their technical comments to their satisfaction. The importance of the complete resolution of technical issues with DFO cannot be understated. DFO is responsible for the protection of marine mammals and challenged Baffinland to meet a high standard of certainty in our proposed mitigations and monitoring programs. The QIA also resolved all issues relating to marine mammals, contingent on the implementation of the ICA structures (which are also described in the NIRB Commitment List). In doing so, Baffinland submits that it has objectively addressed the concerns of most Intervenor with respect to marine mammals, and that there is a path forward for all interested Parties to work together to ensure the responsible and sustainable development of the Phase 2 Proposal. The FEIS Addendum builds on the original FEIS which spans over ten years and includes over 30 different studies. The marine assessment undertaken is rigorous and comprehensive, and it has advanced the scientific understanding of marine processes in Eclipse Sound and Milne Inlet.
610. The residual effects assessment (after taking into account measures to avoid or mitigate adverse effects), for each species was determined to be not significant. These determinations are only reinforced by the many additional commitments made through the review process following submission of the FEIS addendum in October 2018, to modify shipping activities, expand monitoring programs, and strengthen adaptive management, which are described in detail throughout this Statement.
611. In addition, should the Phase 2 Proposal be approved, through the commitments made under the NIRB Commitment List and the ICA, a robust adaptive management program will be put in place. This adaptive management program will ensure that if Project activities are linked to any significant effect on marine wildlife, those activities will be modified, or if necessary, stopped entirely.
612. Taken together, Baffinland submits that the Board can recommend the Phase 2 Proposal for approval with the confidence that it has been presented with the best available science and available IQ, and a Project that is designed to avoid negative effects to the greatest degree possible. Baffinland acknowledges that there is uncertainty. However, the mitigations and monitoring programs that have been proposed address that uncertainty. Additionally, adaptive management will ensure that marine mammals remain protected from significant negative effects as a result of the Project.
613. Given the focus of Intervenor on the potential effects of shipping on narwhal and seal through the review process, in addition to presenting a summary of the assessment, the focus for this Final Written Statement will outline the mitigations, monitoring, and adaptive management process in relation to those species. Finally, this section will address some of the themes that were raised during the reconsideration by various Intervenor as well as Inuit participants.

5.9.3.1.1 Summary of Marine Environment Assessment Data Set

614. When reviewing and considering the evidence presented by Baffinland with respect to its assessment of marine wildlife and the effects on their habitat, it is important to recognize that the Mary River Project is an operating project. Not only does the Phase 2 Proposal assessment build on the extensive baseline studies and assessments carried out since 2011 for the larger approved project, but it also takes into account the past six years of Baffinland's operations for the Early Revenue Phase and Production Increase Proposal phases of the Project.
615. The results of monitoring from Project activities, and in particular to marine mammals, and shipping activities, have allowed Baffinland to undertake a robust assessment based on this actual operational experience and years of working with Inuit. Based on its annual marine mammal monitoring plans, and feedback received from the Marine Environment Working Group and North Baffin Communities, Baffinland has been able to test the effectiveness of proposed mitigation measures. It is within this context that Baffinland's marine wildlife assessment must be considered.
616. The assessment approach of the marine environment relied on multiple lines of evidence, including:
- Continuous record of Project Specific IQ dating back to 2006 as well as relevant third party literature
 - Site specific data spanning 10+ years collected through original baseline studies supporting the Approved Project, as well as from Early Revenue Phase monitoring programs
 - Phase 2 specific modelling, using conservative assumptions about the number and types of vessels used (acoustic)
 - Literature (over 30 regional studies, peer reviewed journals, grey literature from government and industry)
 - Other environmental assessments
 - Expert opinion, including verification by third party report (Assessment of Icebreaking Operations)
617. Baseline data, consideration of potential project effects, assessment methods, and assessment of potential effects are set out for each of the marine mammal species in TSD 24. For each species, the assessment considered the issues of change in habitat, acoustic disturbance, hearing impairment, auditory masking; and mortality.
618. The incorporation of IQ has been a key component of Baffinland's approach to the marine wildlife assessment. IQ was shared with Baffinland through interviews, workshops, community meetings, sharing of knowledge from Inuit staff, reports developed by the QIA and through engagement with the MHTO. IQ has informed the baseline assessment to identify valued ecosystem components for the Project, to identify potential project effects, and in the development and application of mitigation measures, including meaningful changes to Baffinland's shipping operations.

5.9.3.1.2 Overview of Phase 2 Proposed Shipping Operations

619. The Northern Shipping Route for Phase 2 is the same as that currently being used by Baffinland and has been established in collaboration with the Pond Inlet community. The route prioritizes the middle of the channel in deep water to avoid the shoreline where a higher density of narwhal are often present.
620. Baffinland has also committed to ensuring vessels avoid travelling through Navy Board Inlet, Lancaster Sound, or interact with the North Water Polynya. Known important habitats such as Koluktoo Bay and the west shore of Milne Inlet are also actively avoided.
621. Three anchorage locations have been identified at Ragged Island and are a necessary part of ensuring operational efficiency. Baffinland considered five different locations for anchoring proposed by the MHTO, but it was determined that Ragged Island is still the best location for anchoring because of its proximity to port, depth of water, and safe refuge it provides for vessels waiting to be called to port.
622. Vessel speed restrictions have been set to 9 knots, and project vessel speed is monitored diligently through an automated vessel tracking system. Vessel compliance with these mitigations has been extremely high since the requirement was enforced in 2019. In addition, Baffinland has hired Inuit shipping monitors in Pond Inlet that also track vessel activity using a real-time vessel tracking system and share information real-time within the community. Baffinland has reported on the success of these initiatives to the Board in its Annual Monitoring Reports for the Mary River Project.
623. Baffinland has committed to reduce the proposed nominal shipping season dates such that Baffinland will not start shipping before July 15, and that Baffinland will plan to close the shipping season at October 31 in any given year (only favourable ice conditions and consultation with Pond Inlet may extend this to no later than November 15).²⁴³ Based on feedback from the communities, there will be no shipping during the winter and other seasons when land-fast ice is present in order to avoid conflict with on-ice travel and hunting activities as well as critical life cycle periods for ringed seal. Baffinland has also committed to no shipping any time land-fast ice is present and limiting its shipping operations using a transit restriction system when thicker sea ice is present.
624. Baffinland has established a communication protocol with Pond Inlet for the start of the shipping season to confirm the floe edge is closed for hunting each year and which will be expanded under Phase 2 to address the start of shipping in years where sea ice is actively being used in front of the community.²⁴⁴ This protocol helps to ensure that the Project will not disrupt a critical harvesting period for local hunters ensuring their full use of the floe edge for hunting and for the protection of local landusers.

²⁴³BIMC Ltr to NIRB Re Conditional Support by Hamlet NIRB Registry No. 332819, BIM Phase 2 Disposition Table and Commitment List, NIRB Registry No. 337148 Commitment 239

²⁴⁴ See Commitment 89, BIM Phase 2 Disposition Table and Commitment List, Appendix to Final Written Statement

625. Shipping during the shoulder seasons will be limited by transit restrictions any time ice conditions require this. Only one transit per 24-hour period will be allowed when ice concentrations are equal or greater than six-tenths, and only two transits per 24-hour period will be allowed when ice conditions are greater than three-tenths but lower than six-tenths. Additionally, vessels waiting to transit to Port while transit restrictions are active are required to stage outside of the 40-kilometre setback area beyond the Nunavut settlement boundary to minimize interactions with marine mammals during their in-migration to the RSA.²⁴⁵ Both the transit restrictions and the implementation of the setback requirement is to minimize the spatial extent and frequency of noise on marine mammals allowing sufficient quiet time for those marine mammals occurring in the regional study area during icebreaking operations. Baffinland has also committed to applying similar transit restrictions during the fall shoulder season.

5.9.3.1.3 Evidence of a Highly Conservative Assessment

626. The marine mammal assessments for narwhal and seal were based on several conservative assumptions and parameters, including but not limited to:
- The 2018 effects assessment was based on 176 ore carrier voyages (round trips), 24 support vessel (freight and fuel voyages) and 10 operating tug boats. Baffinland since reduced the maximum number of ore carrier voyages to 168. The use of 24 support vessels and 10 tugs were also conservatively high estimates that may occur during the construction period, but not in regular operating years.
 - Underwater noise modelling assumed that all project and non-project vessels in the regional study area would be as loud as a capesize ore carrier, which is the loudest of all the vessel classes proposed for the Project when in fact no more than 14-16 are anticipated to be available to come to Milne Port in a given season under current market availability.²⁴⁶
 - Separate study areas were selected for the assessment of the marine environment and marine mammals. The marine environment study area reflects the maximum spatial extent of predicted project-related change as a result of port construction and operation. The marine mammal study area encompasses the Northern Shipping Route and extends out to the boundary of the Nunavut Settlement Area. It also includes Navy Board Inlet and Tremblay Sound.

²⁴⁵ See Commitment 89, BIM Phase 2 Disposition Table and Commitment List, Appendix to Final Written Statement

²⁴⁶ Responses to deferred questions, submitted Jan 6, 2020

5.9.3.1.4 Overview of Assessment Ringed Seal Assessment

627. The primary documents that provides a detailed assessment of the potential project effects on Ringed Seals are “Technical Supporting Document TSD 24 – Marine Mammal Effects Assessment”²⁴⁷ and “Assessment of Icebreaking Operations during the Shipping Shoulder Season on Marine Biophysical Valued Ecosystem”²⁴⁸.
628. The assessment considered potential effects from:
- change in habitat;
 - acoustic disturbance;
 - hearing impairment;
 - auditory masking; and
 - mortality.
629. With respect to the change in habitat, taking into account mitigation measures, the conclusion is that The total area of suitable pupping habitat that will be lost (<1.5 ha) as a direct result of the new dock structures is small. Given the relatively small footprint and in consideration of proposed mitigation, the effects of habitat change on ringed seal are anticipated to be negligible. The residual environmental effect of habitat change on ringed seal is predicted to be “Not Significant”.

With respect to acoustic disturbance, the zone of disturbance onset for pile driving is predicted to occur out to a distance of 16.1 km from the source (with no bubble curtain mitigation). There are no density estimates for seals in the LSA during the open-water and ice-covered seasons, but few seals are expected to occur near Milne Port during this time. Animals occurring near Milne Port during active vibratory or impact pile driving are expected to exhibit temporary and localized avoidance behavior. The number of seals likely to be affected is expected to be low. With the effective implementation of mitigation including the use of bubble curtains around the wetted pile to reduce sound propagation, disturbance effects from pile driving on ringed seal are anticipated to be negligible. The residual environmental effect of disturbance on ringed seal is predicted to be “Not Significant”.

Disturbance effects are predicted to be negligible for ringed seal because most of their communication occurs at higher frequencies than ship noise. It was anticipated that ringed seal will actively avoid ore carriers traveling along the Northern Shipping Route and any effect would be localized and short-term. With the effective implementation of mitigation, the residual environmental effect of disturbance from ship noise was predicted to be “Not Significant” for ringed seal.

²⁴⁷ NIRB Registry No. 320584

²⁴⁸ NIRB Registry No. 325033-325047

With respect to hearing impairment, with the effective implementation of mitigation including the use of bubble curtains to reduce sound propagation from the pile, the potential for auditory injury from vibratory pile driving on ringed seal is anticipated to be negligible. The residual environmental effect of hearing impairment on ringed seal is predicted to be “Not Significant”.

With respect to masking, with the effective implementation of mitigation, the residual environmental effects of auditory masking from pile driving and shipping was predicted to be “Not Significant” for ringed seal.”

With respect to mortality, ringed seal mortality is not expected to occur as a result of the Phase 2 Proposal activities. With the effective implementation of mitigation, the potential residual effects of ringed seal mortality due to vessel strikes is predicted to be negligible. The residual environmental effect on ringed seal is expected to be “Not Significant”.

630. Baffinland has also agreed to additional mitigation measures that will avoid or mitigate potential effects of shipping on seal habitat, including:²⁴⁹
- Not shipping before July 15, which helps protect seals in the moulting period; and
 - Not shipping later than October 31 (subject to favourable use conditions and consultation which could extend to November 15), which avoids or mitigates impacts on seals when they start maintaining breathing holes during initial ice freeze-up.
631. In addition, Baffinland has also committed to undertaking targeted ringed seal monitoring along the Northern Shipping Route.²⁵⁰ This monitoring program will include dedicated ringed seal aerial surveys to monitor for shipping-induced changes in ringed seal distribution and relative abundance.
632. Instead of attempting to reconcile the differences between IQ and western science on this topic,²⁵¹ Baffinland has chosen to address the underlying concern of Inuit – to monitor for any changes in ringed seal distribution and abundance – to confirm whether shipping activities are affecting ringed seal populations and distribution.
633. A detailed summary of mitigation measures for ringed seal is set out in the TSD as well as Baffinland’s Written Comments of September 10, 2021.²⁵² The following paragraphs from that summary are particularly relevant:

“138. The mitigation measures in place for ringed seal have been carefully developed to completely avoid shipping impacts on ringed seal during periods when they are ‘grouped up’ (i.e., the winter and spring) when group behaviour is critical to reproductive activities such as mating.

²⁴⁹ Baffinland Written Comments, NIRB Registry Nos. 336778-336781, page 71

²⁵⁰ Commitment 225 BIM Phase 2 Disposition Table and Commitment List, Final Written Statement

²⁵¹ Baffinland Written Comments, filed September 13, 2021, NIRB Registry No. 336778

²⁵² Baffinland Written Comments, filed September 13, 2021, NIRB Registry No. 336778

In addition to the mitigations described at the January-February hearing, Baffinland has recently added a new mitigation commitment, in that icebreaking will not begin before July 15, which also helps to protect seals during the moulting period, and will not run later than October 31, which also aims to avoid impacts on seals at a time when they start maintaining breathing holes during initial ice freeze-up.

139. The impact of icebreaking on ringed seal during the fall will be limited to the narrow swath of the icebreaker route, which represents 0.33% of available sea ice habitat in the RSA, plus the associated acoustic disturbance zone on either side of the corridor. Animals maintaining breathing holes in late October along the ship track might experience localized disturbance effects and may elect to move away from the shipping lane to pursue these activities. The impact is expected to be temporary and intermittent in nature (on the scale of several weeks with limited number of daily transits), and not likely to result in any large-scale displacement within the RSA. No impacts on the reproduction or survival of ringed seal are anticipated to occur from either shipping or icebreaking.

140. Baffinland acknowledges feedback from Inuit hunters indicating they are observing local changes in seal abundance and distribution in the RSA, with carry-over effects on seal harvesting. In response to this feedback, Baffinland has recently committed to undertaking targeted ringed seal monitoring along the Northern Shipping Route starting in 2021. This monitoring program will incorporate IQ and Inuit perspectives into the design, planning and implementation of this monitoring program. This will include dedicated ringed seal aerial surveys to monitor for potential shipping-induced changes in ringed seal distribution and relative abundance (i.e., density and seal hot spots) in the RSA. The 2021 survey results will be compared to ringed seal baseline aerial surveys undertaken by Baffinland in the RSA in 2006, 2007, 2008 and 2014, as well as to surveys undertaken by DFO in 2016 and 2017 (Yurkowski et al. 2019). This monitoring will address any residual uncertainty with the impact predictions related to shipping and ringed seal. Tracking ringed seal numbers in the RSA has also been identified as a long-term indicator for this species as part of the OITR developed for the Phase 2 proposal.”

634. Baffinland is confident that this monitoring program, together with the robust adaptive management plan proposed through commitments made in the ICA, will address any existing uncertainty with the impact predictions related to shipping activities and ringed seal.

5.9.3.1.5 Overview of Assessment: Narwhal

635. Given the focus on narwhal as a key species of cultural importance, and the suggestion by some participants that Baffinland did not carry out a sufficient assessment. Baffinland has prepared the following high level summary of the assessment as follows.

636. The primary documents that provide a detailed assessment of the potential project effects on narwhal are “Technical Supporting Document TSD 24 – Marine Mammal Effects Assessment”²⁵³ and “Assessment of Icebreaking Operations during the Shipping Shoulder Season on Marine Biophysical Valued Ecosystem”²⁵⁴.
637. The effects assessment for narwhal considered key topics including: change in habitat; taking into account acoustic disturbance; hearing impairment; auditory masking; and mortality. Assessment outcomes for each of these effects is summarized below.
- (i) Change in Habitat
638. With respect to change in habitat, taking account the mitigation that the ore and freight dock were designed to minimize the footprint in the marine environment, the assessment determined residual effects as follows: The total area of narwhal foraging habitat that will be lost (<1.8 ha) as a direct result of the new dock structures is small. Given the relatively small footprint and in consideration of proposed mitigation, the effects of habitat change on narwhal are anticipated to be negligible. The residual environmental effect of habitat change on narwhal is predicted to be “Not Significant”. (TSD 24 at page 32). The same significance determination was made in this subject area through the Assessment of Icebreaking Operations.
- (ii) Acoustic Disturbance
639. TSD 24 and the ‘Assessment of Icebreaking Operations during Shipping Shoulder Seasons on Marine Biophysical Valued Ecosystem Components’ provides details of the assessment of potential effects of shipping on narwhal from underwater noise.
640. The experts identified acoustic thresholds for marine mammals against which sound levels could be compared. The U.S. National Oceanic and Atmospheric Administration (NOAA) has adopted widely recognized thresholds of underwater sound for marine mammals. These thresholds were adopted for the assessment of shipping noise on all marine mammals in the regional study area, including narwhal and ringed seal.
641. The thresholds are set at conservative and cautionary levels (see TSD 24 at pages 8 to 10). The injury threshold for whales is 180 dB. The acoustic disturbance level is 120 dB. The assessment also considered the frequency ranges.

²⁵³ NIRB Registry No. 320584

²⁵⁴ NIRB Registry No. 325033-325047

642. The assessment of the effects of shipping on narwhal behaviour benefited from the ability to observe the effects during current shipping. Modeling of ship noise by JASCO using conservative assumptions was also used – but direct observations of narwhal response to existing shipping and data on actual noise levels in the environment provided direct evidence.

643. As noted in TSD 24 at page 33:

“Since 2013, Baffinland has conducted shore-based monitoring at Bruce Head to study narwhal response to shipping traffic along the shipping route in Milne Inlet during the open-water season, with data collected on abundance, distribution, group composition, and behavior (Moulton et al. 2016). Most narwhal occurring along the shipping route near Bruce Head were shown to be in transit, with some evidence of nursing, mating and foraging behavior also observed. Approximately 40% of the group sightings included calves or yearlings, supporting the hypothesis that southern Milne Inlet is an important area for calf rearing. Results collectively indicated that narwhal do not respond to large vessels by fleeing; but rather remain in the area with some individuals showing temporary avoidance behavior during active ship transits. Animals demonstrated a more pronounced avoidance behavior to ships approaching from the south (Milne Port) than from the north. No changes in yearly relative abundance or distribution were observed, nor any evidence of long-term displacement or avoidance behavior (Moulton et al. 2016).”

As emphasized many times in written submissions and presentations by Philippe Rouget of Golder, the effects of shipping on narwhal have been observed through extensive monitoring of current shipping, to be limited to localized and temporary behavioural responses. These only occur in close proximity to individual ships and are of short duration, after which the narwhal resume their natural behaviours. And as noted in TSD 24 at page 34:

“Narwhal are considered MF cetaceans (Southall et al. 2007) with their most sensitive hearing range occurring in the mid-frequency range ranging from 20 to 100 kHz (Richardson et al. 1995a). Using sound for foraging, navigation, and social purposes, they are a highly vocal species with call types consisting of echolocation clicks, pulsed tones, and whistles. No behavioural or electrophysiological audiograms are available for narwhal; however, their hearing abilities at high frequencies are exceptionally well developed. This likely is related to their use of high frequency sounds for echolocation. Narwhal vocalization studies indicate that this species primarily vocalizes in the 300 Hz to 24 kHz range (Ford and Fisher 1978; Marcoux et al. 2011; Marcoux et al. 2012). Ship noise generally dominates ambient noise at low frequencies, with most energy occurring between 20 to 300 Hz and some components extending into the 1 to 5 kHz range (Richardson et al. 1995a). Ship noise is therefore emitted at frequencies at which narwhal have lower hearing sensitivity.”

The determination of the residual effects assessment is as stated in TSD 24 at page 35:

“Narwhal are expected to exhibit temporary and localized avoidance behavior when encountering Project vessels along the shipping route and in Milne Port. No abandonment or long-term displacement behavior is anticipated. As most ship noise energy occurs below the

sensitive hearing range for narwhal, the severity of this effect will likely be reduced. With the effective implementation of mitigation, the residual environmental effect of disturbance from ship noise on narwhal was predicted to be “Not Significant”.

The same significance determination was made in this subject area through the Assessment of Icebreaking Operations.

5.9.3.1.6 Hearing Impairment

644. As stated in TSD 24 at pages 36 and 37:

“There is no direct evidence of hearing impairment (either PTS or TTS) occurring in toothed whales as a consequence of exposure to vessel-generated sound (Southall et al. 2007). Acoustic modelling was conducted to quantify the underwater sound fields and associated sound level contours generated by Project vessels during transiting, berthing, and mooring events at defined anchorages in Milne Port and at Ragged Island. Modelling allowed for prediction of potential injury zones for narwhal, represented by the maximum range (relative to the source) to the SEL24h injury thresholds for ‘mid-frequency cetaceans (MFC)’, based on the dual criteria (Southall et al. 2007; NOAA 2016).

Modelling results indicated that noise from transiting and moored vessels would not exceed the SEL24h injury thresholds for MFC under any of the scenarios considered in the acoustic model (Appendix B). The risk of permanent hearing impairment in narwhal from open-water shipping was therefore considered negligible.”

“Residual Effect

With the effective implementation of mitigation, the residual environmental effect of hearing impairment on narwhal from ship noise was predicted to be “Not Significant”.

645. The same significance determination was made in this subject area through the Assessment of Icebreaking Operations.

5.9.3.1.7 Auditory Masking

646. As stated in TSD 24 at page 37:

“The potential effects of auditory masking in narwhal are dependent on the received sound level and the frequency content of the received sound signal relative to hearing ability in this species and the level of natural background noise. As previously noted, narwhal are considered MF cetaceans (Southall et al. 2007) with their most sensitive hearing range occurring in the mid-frequency range ranging from 20 to 100 kHz (Richardson et al. 1995a). Narwhal vocalization studies indicate that this species primarily vocalizes in the 300 Hz to 24 kHz range (Ford and Fisher 1978; Marcoux et al. 2011; Marcoux et al. 2012). Ship noise generally dominates ambient noise at low frequencies, with most energy occurring between 20 to 300 Hz and some components extending into the 1 to 5 kHz range (Richardson et al. 1995a).

For continuous noise sources such as shipping and vibratory pile driving, masking effects on narwhal are likely limited because of the relatively short duration of these events, and the limited overlap in frequency between these noise sources and narwhal hearing / communication range.”

“Residual Effect

With the effective implementation of mitigation, the residual environmental effects of auditory masking from pile driving and shipping on narwhal was predicted to be “Not Significant”.

The same significance determination was made in this subject area through the Assessment of Icebreaking Operations.

5.9.3.1.8 Mortality from Vessel Strikes

647. As stated in TSD 24 at page 38:

“Residual Effect

Narwhal mortality is not expected to occur as a result of the Phase 2 Proposal activities. With the effective implementation of mitigation, the potential residual effect of narwhal mortality due to vessel strikes is predicted to be negligible. The residual environmental effect on narwhal is expected to be “Not Significant”.

648. The same significance determination was made in this subject area through the Assessment of Icebreaking Operations.

5.9.3.1.9 Third Party Peer Review Confirmed Quality of Golder’s Icebreaking Assessment

649. To provide the Board with greater confidence in the assessment, Baffinland has also had a peer review carried out on the icebreaking effects assessment.²⁵⁵ This peer review concluded the following:

- A substantial body of information was collected and used by Baffinland to base its assessment (e.g., Baffinland has periodically been conducting narwhal studies since 2007; since 2016, Golder has undertaken six marine mammal study/monitoring programs with multiple surveys conducted per program);
- Data are generally of high technical quality and appropriate within the context of impact assessment as a planning tool (e.g., studies conducted across multiple seasons and years, using a variety of survey methods, with good spatial coverage across the RSA);
- Assessment information comes from multiple sources (including IQ, literature, modelling, field work/empirical studies);
- Standard assessment methodology was applied and the assessment appropriately focused on the key Project issue to narwhals (i.e., impacts of Project-related underwater noise);

²⁵⁵ NIRB Registry No. 327146

- Progressive and known effective mitigation measures during icebreaking have been applied (e.g., Baffinland's commitment to a 9 knot speed restriction in the RSA is notable in that such voluntary speed restrictions in Canada are uncommon);
- Mitigation proposed for narwhal will also be beneficial and effective for other marine mammal species, which are less likely to interact with the Project;
- Follow-up monitoring commitments are appropriate and tailored to managing the uncertainties identified in the IOA (e.g., uncertainty with respect to whether narwhal habituate to vessel noise is being addressed through tagging as well as shore and ship-based observation studies).

5.9.3.1.10 Summary of Key Marine Mammal Assessment Mitigations

650. Consistent with the general methodology for the FEIS Addendum described in Section 3 of this Final Written Statement, Baffinland's professional advisors took into account mitigation measures to help come to a determination on residual effects and significance.
651. The mitigation measures originally taken into consideration in these determinations are identified in TSD 24 and the Assessment of Icebreaking Operations included the following:
- Maintain constant speed and course when possible.
 - Reduce vessel idling.
 - All Project vessels will reduce speeds to a maximum of nine knots when transiting along the established shipping corridor;
 - Between the period of 01 July and 30 July, a maximum of one icebreaker transit (with escorted vessels) will occur per day (24-h period) where ice concentrations of 6/10 or greater cannot be avoided along the shipping route. (Note that this has been modified since the submission of the Assessment of Icebreaking Operations)
 - Between the period of 01 July and 30 July, a maximum of two icebreaker transits (with escorted vessels) will occur per day (24-h period) where ice concentrations less than 6/10 but greater than 3/10 greater cannot be avoided along the shipping route.(Note that this has been modified since the submission of the Assessment of Icebreaking Operations)
 - When a continuous sailing route of uninterrupted ice concentrations of 3/10 or less is available between the entrance of Pond Inlet and Milne Port, then icebreaker transits in the RSA will proceed according to the normal shipping schedule;
 - All icebreaking, ice management and ice escort activities will be conducted outside of the period of ringed parturition, nursing, and breeding periods;
 - When marine mammals appear to be trapped or disturbed by Project vessel movements, the vessel will implement appropriate measures to mitigate disturbance, including stoppage of movement until wildlife move away from the immediate area (as safe navigation allows).
 - All Project vessels will be provided with standard instructions to not approach within 300 m of a walrus or polar bear observed on sea ice;

- All Project vessels will be provided with standard instructions to operate their vessel in a manner that avoids separating an individual member(s) of a group of marine mammals from other members of the group; and
- Baffinland will place Marine Wildlife Observers (MWOs) on icebreaking vessels during the shoulder seasons that will be responsible for recording relative abundance, group composition and behaviour of marine mammals relative to icebreaker transits along the Northern Shipping Route. MWOs will also be responsible for recording any incidences of marine mammal strikes or near misses with Project vessels, including icebreaker vessels.
- Vessels awaiting an icebreaker escort, or vessels awaiting instructions from the Port Captain to enter the RSA will be instructed to wait in Baffin Bay at least 40 km east of the Nunavut Settlement Area

652. Baffinland submits that these baseline mitigation measures coupled with a robust approach to adaptive management alone are sufficient to support the assessment determination. However, Baffinland has agreed through constructive dialogue with interested Parties to even more mitigations, which include:

- reducing the total number of ore carriers to be used in an given year from 176 to 168²⁵⁶;
- Baffinland will not transition from approximately 84 to 168 vessels in a single season, instead, Baffinland commits to a gradual ramp-up to full shipping capacity, adding approximately 21 ore carriers per year starting in year 1 after Phase 2 Approval; additional ore carrier transits during the construction period will be simulated (i.e. will be loaded with ore, but will not be used to ship more ore than can be hauled via the Tote Road (6Mt))²⁵⁷. This commitment will ensure the active monitoring of increased shipping can occur and that adjustments can be made to shipping operations if results of these efforts identify a need to so.
- Reduction in the shipping season to begin no earlier than July 15 and aim to conclude by October 31 each year with contingency to November 15 based on ice conditions and community consultation²⁵⁸
- Expansion of the Spring transit restriction to extend as long into the season as needed based on ice conditions (Note transit restrictions currently end at July 31st, regardless of ice conditions)²⁵⁹
- Establishment of fall transit restrictions that will limit operations to the following conditions:²⁶⁰
 - When a continuous sailing route of open water and/or new ice (<10cm) occurs between the entrance of Pond Inlet and Milne Port, then icebreaker transits and other unescorted vessels in the RSA may proceed under open-water operating conditions.

²⁵⁶ See Commitment 241 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²⁵⁷ See Commitment 242 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²⁵⁸ See Commitment 214 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²⁵⁹ See Commitment 213 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

²⁶⁰ See Commitment 215 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

- A maximum of two transits or four half transits will occur per day (24-h period) where grey ice (10-15cm) cannot be avoided along the shipping route.
- No breaking of landfast ice along the shipping route.²⁶¹

653. These commitments serve to further strengthen confidence in the significance determinations within the assessment. They also demonstrate Baffinland's willingness to collaborate with Inuit and Inuit groups, as well as regulatory authorities. The robust suite of regulatory approvals and applicable laws as well as our operational experience, and years of working with Inuit all have helped Baffinland to better understand key environmental risks. Baffinland has demonstrated to NIRB that it will not hesitate to implement proactive and precedent setting approaches when monitoring and expert parties such as IQ Knowledge Holders or DFO are of the view such measures are necessary to address uncertainty or community concern.
654. Baffinland has been able to improve shipping operations and test the effectiveness of mitigation measures based on results from our annual monitoring programs and input received from communities and Intervenorors as well as the Working Groups.
655. Baffinland's proposed mitigation measures have been shaped by input from Inuit as well as relevant project Intervenorors (i.e. DFO) and stem from a deep respect for the communities sharing the waters of Eclipse Sound and Milne Inlet. Examples of this include, waiting for confirmation from the MHTO that the floe edge has been closed to hunting at the start of the season, shifting the nominal shipping route Eastward away from hunting camps in Milne Inlet, restricting the number of vessels anchored along the Northern Shipping Route to a maximum of 3, pausing shipping operations during 2019 to support a successful bowhead hunt for Pond Inlet and providing shelter, food and fuel to any hunters that arrive at Milne Port.
656. Inuit participation in the monitoring programs and in community engagement sessions has resulted in meaningful changes to Baffinland's shipping operations and the mitigations applied. For example, Inuit concerns regarding vessel noise in key narwhal calving areas have directly led to mitigation measures in the form of "no-go zones" along the west coast of Milne Inlet as well as within Koluktoo Bay. The Shipboard Observer Program has provided valuable information, and in turn has helped deepen community understanding of the operations and constraints presented by commercial shipping.
657. Baffinland looks forward to the opportunity for even deeper engagement and partnership with Inuit from the Impacted Communities that is offered by the Inuit Committees and ISP. Baffinland also looks forward to enhanced communication and information sharing that will be facilitated by the IQ Advisor positions, the Elder's rooms, and dedicated areas to sharing more about the Mary River Project that are all part of Baffinland's commitments and reflected on the NIRB Commitment List.

²⁶¹ See Commitment 215 and 92 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

658. Mitigation measures committed to by Baffinland have been demonstrated to be operationally feasible and biologically meaningful, which provides increased confidence in the significance determinations for Phase 2. These mitigations also meet or exceed regulatory requirements and best practice for shipping across Canadian waters. Baffinland and QIA's jointly approved adaptive management approach will be incorporated into an updated marine monitoring plan and submitted to NIRB for Phase 2, if approved.

1. Marine Mammal Monitoring

659. Baffinland has been undertaking extensive monitoring in the Eclipse Sound region for many years, and we have demonstrated that our monitoring programs are able to detect change in narwhal behaviour in response to shipping. The marine-based monitoring programs will continue under Phase 2 with ongoing input on study design and effect indicators from Inuit and regulators. Inuit participation in the monitoring programs is critical. Through past years, we've had the pleasure of training, employing, and learning from a great number of Inuit from several different North Baffin communities who have worked with us on the delivery of our marine monitoring programs. In 2019 (i.e. pre-Covid 19 pandemic), more than 50 percent of participants in Baffinland's marine monitoring programs were Inuit resulting in over 700 hours of training and nearly 6,000 hours of employment on these monitoring programs.²⁶²

660. Inuit monitors help integrate Inuit knowledge in program implementation and in data collection as well as an interpretation of the results. Inuit are involved in all aspects of the monitoring programs and have been trained and hired to undertake data analysis and work with Baffinland's technical consultants following the completion of the field program. Baffinland's commitments under the NIRB Commitment List and Inuit Certainty Agreement will also see expanded Inuit-led, independent monitoring principles. This is separate and over and above Inuit who are hired and included in the existing monitoring program. The NIRB Commitment List and Inuit Certainty Agreement commitments will also help set adaptive management thresholds and indicators, which will be based on an updated culture, resource, and land-use study as well as scientific indicators. Baffinland will continue to hire full-time shipping monitors in Pond Inlet to conduct live monitoring of vessels and to act as the main point of communication between Baffinland's shipping department, the community, and the MHTO.

661. To monitor potential changes in the number of narwhal in the Eclipse Sound stock, regular surveys of the stock have been undertaken using aerial survey methods. The Eclipse Sound stock has been surveyed six separate times since 2004 by both DFO and Baffinland, with Baffinland carrying out three consecutive years of surveys between 2019 and 2021.²⁶³ All six surveys are considered reliable and were conducted using comparable methods. Note that the Eclipse Sound stock appeared to decrease between 2004 and 2013 prior to shipping, although this change was not shown to be statistically significant.²⁶⁴

²⁶² Hearing Transcript. Vol. 5, 910-911

²⁶³ Summarized in the 2020 Marine Mammal Aerial Survey Report, and also in BIM's 2020 Annual Report to NIRB

²⁶⁴ Hearing Transcript. Vol. 5, 911-912

662. In 2019, the population size of the Eclipse Sound summer stock was measured and was shown to be consistent and within range of previous population estimates, including prior to shipping. This stable narwhal abundance was also observed in the same year Baffinland carried out its largest shipping season to date with 90+ vessels (ore carriers, freight and fuel) calling on Milne Port, and also followed a year (2018) that was reported by Inuit to be a low narwhal abundance year. These findings and circumstances aligns with impact predictions that the project is unlikely to compromise the integrity of the population either through mortality or via large scale displacement or abandonment effects.²⁶⁵
663. We know from Inuit knowledge and community feedback that harvest numbers were low in 2018. This year also coincides with the shortest open water season in the last 20 years.²⁶⁶ In 2019, the total number of narwhal reported as hunted was 184, which is higher by 49 animals, or a 36% increase, compared to the 135 harvested in 2014 before project shipping started. The number of narwhal harvested in 2019 is actually higher than every other year prior to the start of shipping going as far back as reporting from 1994. We also note harvested narwhal tag numbers provided to the Board by the Government of Nunavut for 2020 (139 narwhal tags issued) and 2021 (153 narwhal tags issued), which also provides evidence that the narwhal harvest continued and was objectively higher in those years than compared to pre-project levels.²⁶⁷ Narwhal harvesting fluctuates but has been steadily increasing over time with most harvesting occurring in the last several years. This trend is even maintained when harvesting numbers are presented on a per capita basis and account for Pond Inlet's population growth. These publicly reported numbers make it indisputable to say that there is more narwhal available for consumption in Pond Inlet, on average, since the Project started operations than in the 15 years prior. This presents a second line of evidence to what is seen in the aerial survey results in that narwhal continue to use the regional study area in numbers that support harvesting up to established quota limits, despite an incremental increase in shipping and hunting levels over the last six years.

5.9.3.1.11 Baffinland's Implementation of Adaptive Management

664. The Phase 2 assessment has benefited from the current project monitoring that has continued in parallel with the NIRB process. Baffinland has also implemented adaptive management measures under its current operations that have formed the basis for many of the mitigations considered in the present Phase 2 assessment.²⁶⁸ A notable example that was of interest was the 2020 marine mammal monitoring results and 2021 response actions from Baffinland.

²⁶⁵ TSD 24. Reference for 2019 monitoring results is 328634-328635

²⁶⁶ TSD-16 Ice Study

²⁶⁷ Government of Nunavut, Final Written Statement, January 10, 2022

²⁶⁸ BIM Tech Memo Re Preliminary Summary of 2020 Narwhal Monitoring Programs, April 8, 2021, NIRB Registry No. 3334437, 334440; Baffinland Response to Comments Re Preliminary Narwhal Monitoring, June 17, 2021, NIRB Registry No. 335788; BIMC Response to QIA, DFO and PC Submissions, August 31, 2021; BIM Preliminary 2020 Narwhal Monitoring

665. In 2020 Baffinland identified through reports from the community of Pond Inlet as well as our own monitoring programs that there were less narwhal in Eclipse Sound compared to the previous year. It is important to put those results in context of the subsequent investigation that was carried out: to date, the monitoring programs have not shown large-scale displacement or abandonment of the regional study area **in response to shipping**.²⁶⁹ Through an investigation, Baffinland did identify evidence of multiple other possible influencing factors, including an unanticipated introduction of a new activity in Eclipse Sound in the form of impact pile driving to construct Pond Inlets Small Craft Harbour in July and August 2020. It is noted that Pond Inlet community members were raising concerns as early as 2019 in the Pond Inlet Tusaqtavut Study that the Small Craft Harbour construction was deterring narwhal from coming close to Pond Inlet and was identified at the Public Hearings. In 2020, Baffinland identified through its passive acoustic monitoring device located near Bylot Island and more than 40km away from Pond Inlet an impulsive noise signature consistent with pile driving. It was later confirmed that this activity occurred at the same time the Eclipse Sound Summer Stock of narwhal would have been migrating past Pond Inlet in July and August. At the same time, Baffinland's shipping operations were proceeding as they had in previous seasons.
666. As an example of Baffinland's commitment to implement adaptive management, without understanding what plans were in place for pile driving to continue in 2021, Baffinland elected to modify the activities under its control to minimize cumulative noise effects in the region and issued a full restriction of any icebreaking during the start of the 2021 Shipping Season. While neither icebreaking in the Spring, or pile driving ultimately occurred in 2021, other construction activities at the Small Craft Harbour did proceed until September 2021. Preliminary monitoring from 2021 suggest narwhal did not return to the area in similar abundance to 2019. Anecdotal evidence in the form of reports from Baffinland's Shipping Monitors indicate that when the remaining construction activities ceased at the Small Craft Harbour in September 2021, within days Pond Inlet hunters were harvesting narwhal directly in front of Pond Inlet. In fact, harvesters filled the entire Summer Quota at that time, while Baffinland's vessels were still active in the area, but the Small Craft Harbour construction activities had ceased.²⁷⁰

Update, September 13, 2021, NIRB Registry No. 336783; Update to the Preliminary Summary of the 2020 Marine Mammal Monitoring and 2021 Adaptive Management (Update 2), October 27, 2021, NIRB Registry No. 337190

²⁶⁹ Hearing Transcript, Vol. 5, 905

²⁷⁰ 211025_Update to BIM Preliminary 2020 Narwhal Monitoring Update FINAL

667. Baffinland's actions during the 2021 shipping season is an example of the Precautionary Principle in action. Despite a lack of certainty that any effects on the narwhal population were occurring as a result of Project activities, all shipping through ice during the narwhal in-migration period was eliminated during the Spring shoulder season, consistent with the commitments contained within the Draft AMP. This was a precautionary implementation of a mitigation measure that risked Baffinland's ability to transport the quantity of ore planned for that season, at a potentially significant financial loss. Nonetheless, in response to concerns raised by the Hamlet of Pond Inlet and MHTO, Baffinland accepted the prospect of a significant negative impact on its ability to ship the full volumes of ore permitted under the certificate without full certainty the Project was the source of the decline in narwhal abundance in 2020. This represents an example of IQ, community feedback and western science all coming together in the context of a full cycle of monitoring, responding, implementing actions and monitoring the outcome of those actions. Despite an ongoing and thorough investigation there remains a lack of robust information to suggest that the Project caused the impact on 2020 narwhal observations. Combined with other available information of what was happening in the Project environment, however, Baffinland elected to take action and control its project operations to the extent possible for the protection of this culturally important species. Notably, in 2021 while Baffinland shipping operations were underway, but other influencing factors in the environment had ceased, the community of Pond Inlet experienced a successful hunting year. Baffinland has committed to this type of feedback loop and will continue its robust monitoring and community engagement under Phase 2.

5.9.3.1.12 Underwater Noise

Preamble to Response to Intervenors

668. Noise has the potential to affect marine mammals in various ways each with its own level of severity. This includes acoustic injury in the form of hearing loss. It also includes potential behavioural disturbance as well as acoustic masking effects. The potential for these impacts to occur depend on the characteristics of the sound source itself, how loud is the sound and what frequency it is in. It also depends on the relative hearing ability of the animal involved as well as how close the animal is to the source of the noise when it is exposed to the noise.
669. Over 80 scenarios were modelled using different combinations of ships at different locations along the Northern Shipping Route.²⁷¹ None of these produced noise levels that exceeded established injury thresholds for a marine mammal. Measurements of ship noise collected by underwater recorders in 2018 and 2019 confirmed that modelled estimates are conservative and over represent potential effects.²⁷²

²⁷¹ Marine Mammal Presentation, January 2021; see also transcript for presentation by Phil Rouget.

²⁷² Marine Mammal Presentation, January 2021; see also transcript for presentation by Phil Rouget.

670. Mitigation measures such as vessel speed restrictions will reduce both the spatial and temporal effects of vessel noise on marine mammals. Additionally, Baffinland has committed to an acoustic monitoring program that will be able to verify the prediction that vessel noise will not cause injury, including from icebreaking operations.²⁷³

Sound Thresholds for Acoustic Disturbance

671. The marine mammal assessment uses an acoustic disturbance threshold of 120 decibels which applies to all marine mammals and is based on best available science.²⁷⁴ The 120-decibel threshold is based on results from behavioural response studies of baleen whales such as bowheads and gray whales. These types of whales have a sensitive hearing range in the low frequency range such as shipping. This threshold is not weighted to account for the frequency range of mid-to-high-frequency cetaceans such as narwhal. Because narwhal fall into the mid-frequency cetaceans category and ship noise occurs primarily in the lower frequency range, there is little overlap between ship noise and narwhal hearing. Therefore, we expect this disturbance threshold of 120 decibels to be conservative for narwhal and likely over representative of actual disturbance effects.²⁷⁵
672. Using this threshold,²⁷⁶ we modelled the total daily exposure period based on Phase 2 shipping operations.

²⁷³ See Commitment 84, BIM Phase 2 Disposition Table and Commitment List, NIRB Registry No. 337148

²⁷⁴ Hearing Transcript, Vol. 5, 905

²⁷⁵ See Baffinland Written Comments, filed September 13, 2021, NIRB Registry No. 336778, p. 32; Hearing Transcript, Vol. 5, p. 901.

²⁷⁶ The numbers (measured and modelled) come from the Summary of 2019 Monitoring Programs document: 1663724-186-TM-Rev1-BIM 2019 MM Monitoring PrelimData 08MAY_20.pdf, Appendix B Fisheries and Oceans Canada - 2019 MARINE MAMMAL MONITORING PROGRAMS – UPDATED PRELIMINARY RESULTS, NIRB Registry No. 328634-328635

673. Model results predicted that marine mammals in the regional study area would experience up to 15 hours per day during the early shoulder season when there would be a low likelihood of acoustic disturbance (i.e., quiet time). During the open-water season, the 'quiet time' period was predicted to extend up to 12.5 hours per day on an average shipping day, and up to eight hours per day on an unusually busy day (i.e., a maximum case scenario). However, acoustic measurements of Project vessels collected by JASCO at multiple sites in the regional study area over multiple years demonstrate that the model estimates are very conservative. The reality is that the daily period of 'quiet time' for marine mammals in the regional study area during Phase 2 operations will range between 20 and 22 hours per day during the open-water season, and will be at minimum 19 hours per day during the shoulder season. These values, derived from actual measurements in the field, are still considered conservative for narwhal, as they do not take into account that narwhal hearing is poor in the low frequency range where most ship noise occurs. In reality, narwhal simply will not be able to hear much of the ship noise, especially if the ship is at a distance.²⁷⁷
674. Baffinland has a high degree of confidence in all of these conclusions.
675. In addition to acoustic modelling and monitoring conducted, Baffinland has investigated narwhal behavioural responses to vessel noise through 6 years of Bruce Head Shore-based Monitoring programs and the 2017-2018 tagging studies. The results of the programs demonstrate that narwhal respond to ship presence at distances that range from 1 to 5 kilometres from the ship. Tagging data confirms that the relative proportion of time that narwhal spend within this range is quite low, about 2 percent of the total time. It's also important to note that a narwhal response to ship noise is very variable. Not all animals respond. Individuals respond differently. In fact, the same individual can respond differently to the same type of ship exposure. This was illustrated to NIRB in a video played during the Marine Environment presentation in January 2021.
676. Further, it is important to recognize that Baffinland's narwhal tagging data indicates that where there is a behavioural response by narwhal to shipping noise, it is localized and temporary.²⁷⁸ In fact, in many of the vessel-narwhal interactions Baffinland analyzed, it was not uncommon for narwhal to show no distinguishable response. These observed responses (or lack thereof) are consistent with Baffinland's assessment predictions.

²⁷⁷ See Golder Technical Memorandum - 2019 Marine Mammal Monitoring Programs – Updated Preliminary Results, February 21, 2020, NIRB Registry No. 328634, Appendix B.

²⁷⁸ NIRB Registry No. 328634-328635

5.9.3.1.13 Acoustic Masking

677. Another key consideration throughout the NIRB process, and integrated into the assessment was related to the potential for the acoustic masking to occur. Masking occurs when the ability to hear a sound of interest is affected by the presence of another sound. In the case of the project, we are referring to the potential for ship noise to interfere with marine mammal communication in the project area. Some degree of masking is predicted to occur as a result of the project. However, there currently are no established regulatory thresholds for masking that would indicate at what level of masking might occur in different marine mammal hearing groups or what level of masking may result in a biological consequence.
678. In general, the science on the effects of masking is relatively young. Given this limitation and in order to better understand potential masking effects, JASCO used acoustic monitoring data from 2018 and 2019 to estimate the reduction of listening range that would occur for narwhal due to ship noise and relative to ambient conditions. Results from this work demonstrated that sound levels capable of masking would be intermittent and temporary in nature and that narwhal are already exposed to similar levels of masking from natural sounds such as wind and waves. This suggests that narwhal likely have some form of strategy for dealing with a noisy environment. In fact, marine mammals have been shown to modify their vocal behaviour to overcome competing sound sources in their environment. For example, beluga, similar to narwhal, are known to be able to modify their communication to avoid masking effects. They do this in the presence of shipping by shifting up their calls to frequencies that do not overlap with the shipping noise.²⁷⁹
679. Multiple lines of evidence, including Inuit knowledge, scientific literature, modelling, and our field monitoring studies were used to inform the assessment prediction that narwhal will demonstrate behavioural responses when exposed to vessel-based sound but that the responses will be short-term and localized. To date, results from our monitoring programs support this prediction, meaning that when vessels are approaching narwhal, animals may temporarily swim away, but once the vessel has passed, the narwhal are shown to resume their activities shortly following the exposure.²⁸⁰
680. Mitigation measures have been developed specifically to reduce the spatial and temporal aspects of noise exposure from shipping. This includes vessel speed restrictions throughout the entire regional study area as well as transit restrictions during icebreaking operations and a 40-kilometre setback zone from the floe edge. In light of these effective mitigation measures and given the low-level responses documented and the limited time narwhal spend in the disturbance zone, we do not anticipate that shipping noise will decrease fitness at the individual or stock level. Therefore, residual effects in the assessment were characterized as not significant.

²⁷⁹ Hearing Transcript, Vol. 5, 907

²⁸⁰ Hearing Transcript, Vol. 5, 902

Responses to Intervenor on Underwater Noise

681. It is important to note that no other party provided expert evidence based on actual observance of narwhal behaviour in response to shipping. Only Baffinland's experts conducted monitoring and observation of the responses of narwhal to existing shipping operations.
682. Josh Jones, presented by Oceans North, placed his own sound detection devices in Eclipse Sound to measure underwater noise levels. His observations of noise levels did not differ significantly from noise levels measured for Baffinland.
683. Dr. Vergara also provided some views relating to underwater noise on behalf of the MHTO.
684. Again, neither Dr. Jones nor Dr. Vergara conducted any studies of actual narwhal behavioural responses to the current marine shipping.
685. Baffinland filed a response to the statements of Dr. Jones and Dr. Vergara in Baffinland's Technical Review of Jones Report and a response to statements made in their presentations.²⁸¹
686. With respect to Dr. Jones' presentation, there was a graphical depiction of the area in which a narwhal could be exposed to vessel noise at a given point of time, showing a static band or "strip" of noise surrounding the entire shipping lane, suggesting that there is a constant source of noise within the shipping lane. The depiction showed by Dr. Jones misrepresented the actual area of exposure at any given point in time.
687. In actual fact, if a ship approached a stationary animal, the animal would be within the area of exposure when the ship is within 5 km of the animal. After the ship passes the animal's location (presuming it is still stationary), the animal would be outside of the area in which the behavioural response would be expected ().²⁸² In addition, the 5 km area for potential behavioural response estimated by Baffinland is a conservative estimate of where a response would occur, based on the narwhal tagging study data. Tagged narwhal sometimes exhibited a behavioural response at distances up to 5 km of the ship, but typically this occurred at closer distances.
688. Further, it is important to recognize that Baffinland's narwhal tagging data indicates that where there is a behavioural response by narwhal to shipping noise, it is localized and temporary. In fact, in many of the vessel-narwhal interactions Baffinland analyzed, it was not uncommon for narwhal to show no distinguishable response. These observed responses (or lack thereof) are consistent with Baffinland's assessment predictions.

²⁸¹ see Baffinland Written Comments, NIRB Registry Nos. 336778-336781, pages 29-34

²⁸² Baffinland Written Comments, NIRB Registry Nos. 336778-336781, p. 29

689. In addition, many of the comments made by Dr. Jones were in relation to concerns regarding the accuracy of Baffinland's predictions with respect to potential behavioural responses of narwhal to shipping activity, without explicit recognition of the fact that Baffinland has, in fact, conducted the tagging study and has monitoring data of actual narwhal responses to shipping operations. While Dr. Jones's study with respect to potential acoustic disturbance was based on theory, Baffinland's monitoring has provided it with an actual data and understanding as to how its shipping operations have interacted with narwhal to date. The utility of Dr. Jones's comments must therefore be evaluated in this context.
690. Statements made by Dr. Vergara on behalf of the MHTO similarly ignored the fact that Baffinland has been able to test its model predictions using actual monitoring data. As outlined in pages 32 to 34 of Baffinland's Written Comments, Dr. Vergara expressed concern that the 120 dB sound level threshold for marine mammal behaviour response used by Baffinland may not be appropriate for narwhal. However, Baffinland used the 120 dB threshold as only one tool with respect to its assessment regarding behavioural response of narwhal. It then took the model predictions using the 120 dB threshold, and compared them to Baffinland's monitoring data, and found that the model-predicted distances for behavioural changes in the environmental assessment were, in fact, greater than what was observed from monitoring of actual narwhal behaviour. In fact, Baffinland's assessment overestimated the distances from ships where there would be potential for behavioural disturbance. Concerns regarding the appropriateness of the threshold used are in fact, irrelevant, given there is actual monitoring data from which actual narwhal responses may be drawn upon.
691. With respect to Dr. Vergara's concerns relating to auditory masking, that is, where shipping noise interferes with the narwhal's ability to detect and interpret other acoustic signals of interest, in its Written Comments Baffinland provided clarity to the Board that there is very overlap between vessel noise and the sound frequencies used by narwhal. Vessel noise does not overlap with most of the narwhal vocalizations.²⁸³
692. It is important to recognize that Dr. Vergara did not provide evidence to the NIRB in advance of her presentation at the final hearing. The MHTO had ample time during the lengthy assessment for the Phase 2 Proposal to prepare and submit for the benefit of other Parties details with respect to the evidence presented, including the sources upon which she relied in making her statements, but chose not to do so. In fact, Dr. Vergara made broad references to "published scientific evidence" as support for statements she made without providing concrete references to such materials.²⁸⁴ Baffinland argues that manner in which Dr. Vergara presented evidence should be carefully considered and evaluated by the Board.

²⁸³ Baffinland Written Comments, NIRB Registry Nos. 336778-336781, p. 34; TSD 24, s. 2.1.4, p. 13

²⁸⁴ Public Hearing Transcripts, Volume 11, p. 1950, lines 18-22

693. In Baffinland's submission, it would be inappropriate to prefer Ms. Vergara or Mr. Jones' evidence over that of Baffinland in relation to underwater noise and narwhal due for the reasons provided above. The erroneous assumptions together with the lack of detail, specificity and attention to the work undertaken by Baffinland should result in the Board giving little or no weight to the comments and written submissions made by these participants.

5.9.3.1.14 Ice Entrapment and Vessel Strikes

694. Ice entrapment is a natural event that has been documented in the Arctic for hundreds of years. IQ confirms that entrapment is a source of natural mortality for narwhal.
695. Two entrapment events have been recorded in the regional study area in the last 15 years. No shipping was occurring at the time of either entrapment event. However, there is concern that artificially opened water channels, such as those created by icebreaking, may be problematic for marine mammals who may confuse them for leads or polynyas.
696. This was taken into account in our assessment. We predicted there would be a low risk of entrapment of narwhal for the following reasons. To date, there's been no evidence demonstrating a direct link between shipping activities and ice entrapment. We know narwhal are an ice-adapted species and occupy ten tenth consolidated pack ice throughout the winter. No narwhal entrapment events occurred as a result of icebreaking during previous Nanisivik mine operations, which included icebreaking earlier in the season (May) and ending in November. Multiple lines of evidence, including IQ and tagging data, have shown us that most narwhal have left or are in the process of leaving the regional study area at the time of initial ice freeze-up.
697. Despite the lack of an established link between shipping and entrapment, Baffinland has committed to conducting an aerial clearance survey at the end of the fall shipping season to visually detect possible entrapments. This will allow resource managers to decide on a course of action in accordance with the community's preference.²⁸⁵

²⁸⁵ Hearing Transcript, Vol. 5, 908-909

698. Vessel strikes have the potential to cause injury or mortality to marine mammals, but with appropriate mitigation, there is a low risk of a strike. Baffinland has implemented the highest level of precaution to prevent ship strikes by voluntarily committing to a 9-knot speed restriction in the project area.²⁸⁶ This is the single most effective measure known to minimize the risk of lethal ship strikes on marine mammals. As a comparison, the Government of Canada has implemented a 10-knot restriction in the Gulf of St. Lawrence to protect the endangered North Atlantic right whale, a whale species that is known to be vulnerable to ship strikes. Vessel speed compliance will be diligently monitored, and no vessel strikes have been reported in the project area since shipping began. With continued implementation of these speed restrictions, no ship strikes on marine mammals are predicted under a Phase 2 scenario.²⁸⁷

5.9.3.1.15 Early Warning Indicators As a Tool in Monitoring

699. Consistent with Term and Condition 110 and 112 for the project, Baffinland is responsible for selecting an early warning indicator for early detection of project effects on narwhal.
700. Following consultation with the MEWG as well as reviews of best available science, narwhal calf ratio was selected as the first early warning indicator, which is expressed as the proportion of immature narwhal, calves and yearlings, relative to the adult population. This is considered an effective early indicator because it is thought that if the population was being harmed, changes in reproductive output can be monitored to indicate an overall change to the population. This early warning indicator was also selected because of what we've heard from Inuit in that Bruce Head and Koluktoo Bay are very important areas for narwhal calving. Data for this early warning indicator has been collected at Bruce Head prior to the start of shipping and throughout shipping operations since 2015. The data available to date demonstrates that the proportion of immature animals at Bruce Head has not changed since project shipping started.²⁸⁸
701. Baffinland described the challenges in drafting EWIs during the public hearing and in written evidence.²⁸⁹ It should be noted that Mary River is unique amongst all other shipping projects in Canada as it is the only one to develop and adopt an early warning indicator to monitor for potential project effects on marine mammals from shipping.²⁹⁰
702. The Bruce Head shore-based monitoring program has also evolved over the years and now incorporates new tools to better monitor this early warning indicator. Such as the use of drone imagery. Not only does this provide a more reliable means to document age class of narwhal, it is a very effective tool to evaluate potential changes in group composition and behaviour as a result of shipping.

²⁸⁶ See Commitment 89 BIM Phase 2 Disposition Table and Commitment List, NIRB Registry No. 337148

²⁸⁷ Hearing Transcript, Vol. 5, 910

²⁸⁸ NIRB Registry No. 331325

²⁸⁹ Golder. 2020x. Early Warning Indicators for Marine Mammals. Technical Memorandum No. 1663724-231-TM-RevA-38000. 14 August 2020. 98 p.

²⁹⁰ NIRB Registry Nos. 334146-334147

5.9.3.1.16 Cortisol levels as a narwhal health indicator are not currently supported by the science

703. During the course of the public hearing in January 2021, several Parties referenced a recently published study that examined cortisol levels in narwhal harvested near or in the RSA (Watt et al. 2021) (the “**Watt Study**”).²⁹¹ On the basis of this study, it was suggested by the MHTO, the Igloolik Working Group and the Hamlet of Clyde River that Baffinland should consider monitoring cortisol levels as an indicator of the potential effect of its shipping activities on narwhal.
704. Baffinland has carefully considered whether measuring cortisol levels in narwhal would be a useful component of its marine mammal monitoring program. However, the indicators already used by Baffinland to monitor effects on marine mammals are better for tracking Project-related changes than monitoring cortisol levels as it is very challenging to dissect stress levels that would be related to Project-effects from the more obvious drivers that would impact narwhal such as reduced sea ice cover, increased predation, increased hunting pressure or changes in the food web (see Public Hearing Transcript, Vol. 8, p. 1426-1427).²⁹²
705. In addition to responding to Parties’ questions on cortisol during the Public Hearing sessions in January and April 2021, Baffinland also provided written comments on the Watt Study: a technical review of the Watt Study prepared by Golder Associates as part of its responses to written questions from Intervenors in March 2021 () (“**Golder Review of the Watt Study**”),²⁹³ and in its Written Comments in September 2021.²⁹⁴ These written submissions provide the Board with further evidence with respect to Baffinland’s concerns regarding the Watt Study and why the NIRB should not accept the suggestion that Baffinland should adopt cortisol as an EWI.
706. In particular, as outlined in Golder’s Review of the Watt Study, there were a number of information and data gaps in the Watt Study that prevented Golder from appropriately evaluating the statistical findings and inferred conclusions.²⁹⁵ In particular, without those details, Golder was unable to determine if there is, in fact, a correlating relationship or trend between cortisol levels in narwhal and Project shipping.
707. In fact, the authors of the Watt Study acknowledged this limitation with cortisol as well, indicating that:
- “It is difficult to determine what the root cause of increased stress may be. Changing ice conditions (Laidre and Heide-Jorgensen 2005), changes to Arctic food webs (Post et al. 2013), an increase in killer whales in the Canadian Arctic (Higdon and Ferguson 2009), and/or increased*

²⁹¹Public Hearing Transcript Vol. 9, pages 1534-1544

²⁹² Public Hearing Transcript, Vol. 8, p. 1426-1427

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²⁹⁴ NIRB Registry Nos. 336778-336781, p. 56

²⁹⁵ NIRB Registry No. 334147, p. 219

*vessel traffic (Eguíluz et al. 2016), could all contribute to increasing stress levels for narwhals.*²⁹⁶

708. Baffinland notes that DFO provided a response to the Golder Review of the Watt Study.²⁹⁷ In that response, DFO stated that “As stated in the paper, the data presented in Watt et al. (2021) show the results of cumulative sources of stress, thus the increase in blubber cortisol levels, post-commencement of shipping, cannot be directly attributed to Baffinland’s shipping activities” and that “Although cortisol may be a sufficient indicator of cumulative and combined stress in narwhal, there are other indicators that may be better suited to detect early warning signs of specific project-related impacts. These indicators should be selected based on discussions with the MEWG and Inuit.”
709. During the hearing some harvesters reported observing some skinny narwhal with thin blubber. DFO was asked if they had done any monitoring of narwhal health or body condition and they confirmed that they had not. These observations are important, but no focused science and/or IQ based studies have been done to indicate that there is a general concern with narwhal health or body condition or that this would be an effective indicator for the purpose of development of an EWI.
710. Recognizing the concern of North Baffin Communities with respect to Project relating shipping and whether it has an effect on the health of narwhal, in September 2021, Baffinland responded by committing to adding body condition monitoring to its narwhal monitoring program.²⁹⁸
711. Further, as noted above in section 3.5, Adaptive Management, it is Baffinland’s expectation that the MEWG will continue to provide advice and recommendations related to Project monitoring through an enhanced process outlined in the most recent version of the Terms of Reference. However, these recommendations will now also be considered through the Inuit Committee, to strengthen consideration of IQ in Baffinland’s approach to environmental monitoring, including body condition monitoring. The Inuit Committee will also inform the implementation of pre-determined responses should thresholds be exceeded.
712. In Baffinland’s view, given the uncertainty and limitations acknowledged by the authors of the Watt Study and DFO with respect to monitoring cortisol in narwhal, these commitments will better serve to address the underlying concern of Parties: to determine whether Project-related shipping is having an adverse effect on the health of narwhal.

²⁹⁶ Watt Study, NIRB Registry No. 332989

²⁹⁷ NIRB Registry No. 337076

²⁹⁸ Baffinland Written Comments, NIRB Registry Nos. 336778-336781, p. 63

5.9.3.1.17 Addressing Uncertainty

713. With respect to potential for uncertainty related to Baffinland's assessment conclusions that there will be no significant effects to marine mammals, Baffinland is confident it has undertaken an appropriate approach to address any remaining uncertainty.
714. To address this uncertainty, Baffinland has committed to continuing and enhancing its marine mammal programs during Phase 2 operation and to adaptive management. Baffinland encourages the Board to take into consideration the following items.
715. First, this is an operating project. Baffinland has the benefit of six years of operations, including implementing marine mammal monitoring programs to assess effects of shipping on marine mammals, and the efficacy of relevant mitigations. We have integrated this knowledge into the assessment, and used it to refine management measures to ensure that best practice mitigations are being applied for all aspects of our shipping operations and that our marine programs will be effective for identifying if effects as a result of shipping are occurring and what adaptive management measures will be effective in ameliorating any issues should they arise.
716. Second, under the Adaptive Management Plan, Baffinland will be required to implement additional mitigation measures including those set out in the final jointly approved Adaptive Management Plan, should a pre-determined and agreed to threshold be met. (See the detailed discussion of the Adaptive Management Plan addressed above under the Adaptive Management Plan section).
717. Third, Baffinland's assessment with respect to marine mammals was robust, and incorporated IQ throughout, using conservative assumptions.
718. Fourth, Baffinland's assessment was conservative in that it included worst-case scenarios instead of more likely realistic-case scenarios. As an example, the underwater noise modelling assumed that all project and non-project vessels in the regional study area would be as loud as a capesize ore carrier, which is the loudest of all vessel classes proposed for the Project, and it is highly unlikely that only capesize carriers would be used.
719. Taking into account these factors and Baffinland's commitments, any remaining uncertainty with respect to the potential effects of the Phase 2 Project on marine mammals will be effectively managed in a way that is in keeping with the expectations and rights of Inuit as well as the stringent applicable regulatory requirements established by the Nunavut Agreement as well as the applicable federal and territorial legislation.

5.9.3.2 Conclusions and Recommendations to the Board

720. We are confident that with the measures adopted and the commitments that we have made, the impacts of the project on the marine environment and on marine mammals will be not significant.

721. Our assessment has been transparent in that narwhal and other marine mammals will be disturbed by shipping noise, but these effects are anticipated to be short-term, localized, and reversible in nature, as has been demonstrated through the present monitoring programs. These types of low-level responses are within an animal's range of normal behaviors and are unlikely to result in high stress or chronic stress in the animal, or disrupt critical reproductive or foraging activities. These are not the type of behavioral responses that would translate into long-term effects on the animal – as there is extensive time between exposure periods for animals to engage in their important daily activities. Therefore, it was concluded that an increase in shipping would unlikely lead to either long-term effects on the population or stock level or cause permanent displacement or abandonment from the regional study area.^[1]
722. Baffinland took a precautionary and conservative approach to the assessment of marine mammals that involved input from communities, primary IQ collection, numerous modelling exercises specific to Phase 2, and integration of the results on ongoing monitoring programs for the current Project, inclusive of considerations for proven mitigation measures.²⁹⁹
723. Baffinland has taken a holistic approach to its mitigation planning and has prioritized development of mitigation measures that directly address key potential adverse effects identified in the assessment such as those from shipping noise, ballast water, and impacts of shipping on Inuit culture.
724. Baffinland's assessment of the potential effects of the Project and particular the increase in shipping have been thorough and comprehensive. The assessments have benefitted from the ability to monitor actual responses of narwhal to the existing marine shipping. The assessment conclusions are that the effects of marine shipping on narwhal are of a localized and temporary nature, and not significant to narwhal abundance or health.
725. Mitigation measures have been developed specifically to reduce the spatial and temporal aspects of noise exposure from shipping. This includes vessel speed restrictions throughout the entire regional study area as well as transit restrictions during icebreaking operations and a 40-kilometre setback zone from the floe edge. In light of these effective mitigation measures and given the low-level responses documented and the limited time narwhal spend in the disturbance zone, we do not anticipate that shipping noise will decrease fitness at the individual or stock level. Therefore, residual effects in the assessment were characterized as not significant. It is important to recognize that this conclusion is arrived at, as indicated, by taking into account the many mitigation measures proposed by Baffinland, several of which are precedent-setting.³⁰⁰

^[1] Hearing Transcript. Vol. 5, 916

²⁹⁹ TSD 24 – Marine Mammal Effects Assessment, NIRB Registry No. 320584

³⁰⁰ TSD 24 – Marine Mammal Effects Assessment, NIRB Registry No. 320584

726. Of fundamental importance is our commitment to fund and support independent Inuit monitoring of the marine environment and marine mammals, to assess any impacts or affects of the project, and to adopt additional measures determined to be necessary under the adaptive management plan. This approach, over the life of the Project provides further assurances that the effects of the project on the Marine environment and Marine mammals will not be significant.
727. We recommend that the Board include our measures and commitments under terms and conditions for the project. Under the ICA we are committed to the mitigation measures and adaptive management processes with the QIA. We have also proposed and recommended to the Board that these measures also be included under Project terms and conditions to be supervised and enforced by the Board and regulatory agencies.

6 SOCIO-ECONOMIC EFFECTS

6.1 Socioeconomic Effects: Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment - Education and Training (Change in Education and Training), NIRB Registry No. 320585
- TSD 26: Labour Market Analysis (NIRB Registry No. 320570)
- Information Request Responses, December 2018), GN 76 Attachment 1, Table 1: Project Training Programs Offered in 2017 (NIRB Registry No. 321614)
- Information Request Responses, December 2018), GN 76 Attachment 1, Table 1: Project Training Programs Offered in Q1-Q3 2018(NIRB Registry No. 321614)
- Appendix 13 Updated Labour Market Analysis (NIRB Registry No. 321614)
- Coordination of Socio-Economic Monitoring Programs, Dec. 2020, (NIRB Registry No. 332181)
- Appendix A Mary River Socioeconomic Monitor Working Group Terms of Reference, Dec. 2020, NIRB Registry No. 332181
- Reference Guide to Key Topics, December 2020, NIRB Registry No. 332182
- BIMC Review of Open Oil Analysis, January 2021, NIRB Registry No. 332729
- Mary River Project Economics Explained, January 2021, NIRB Registry No. 332873
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379
- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No.320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.2 Population Demographics

6.2.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619

- TSD 25: Socio-economic Assessment - Education and Training (Change in Education and Training) (NIRB Registry No. 320585)
- TSD 26: Labour Market Analysis (NIRB Registry No. 320570)
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379
- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.2.2 Summary of Assessment Conclusions

728. Baffinland refers the Board to Section 2, “Population Demographics” of TSD 25 for a summary of assessment methodology, effects assessment and conclusions on the topic of Population Demographics.
729. The additional short term employment opportunities from construction of the railway and small decrease in overall employment (used for conservative assessment purposes) associated with the Phase 2 Proposal are not considered substantial changes.
730. While Inuit employment levels have the potential to increase over time, the overall magnitude of Inuit out-migration is not expected to change.
731. Assessment outcomes for population demographics remain the same as for the Approved Project.
732. Residual effects arising from in-migration and out-migration are expected due to the Project. At the anticipated levels, however, these effects are not expected to be sufficient to cause adverse effects on the demographic stability of the Impacted Communities, therefore, these residual effects are assessed to be not significant.
733. Monitoring will continue under the Mary River Socio-Economic Monitoring Program, which may be supplemented with additional community specific data generated through a Social Monitoring Program to be implemented by the QIA through the Inuit Stewardship Plan.
734. No Intervenor identified any outstanding concerns specific to this topic.

6.2.3 Conclusions and Recommendations of Baffinland to the Board

Baffinland will continue to track potential changes to population demographics in the LSA and RSA and other relevant information pertaining to population demographics through its annual socioeconomic monitoring program. Baffinland will continue to engage with both the SEMWG and the QSEMC on the topic of socioeconomic monitoring, and apply adaptive management to improve the Project's overall socioeconomic performance in the future.

6.3 Education and Training

6.3.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment - Education and Training (Change in Education and Training), NIRB Registry No. 320585
- TSD 26: Labour Market Analysis, NIRB Registry No. 320570
- Information Request Responses, December 2018), GN 76 Attachment 1, Table 1: Project Training Programs Offered in 2017 (NIRB Registry No. 321614)
- Information Request Responses, December 2018), GN 76 Attachment 1, Table 1: Project Training Programs Offered in Q1-Q3 2018(NIRB Registry No. 321614)
- Appendix 13 Updated Labour Market Analysis (NIRB Registry No. 321614)
- Coordination of Socio-Economic Monitoring Programs, Dec. 2020, (NIRB Registry No. 332181)
- Appendix A Mary River Socioeconomic Monitor Working Group Terms of Reference, Dec. 2020, NIRB Registry No. 332181
- Reference Guide to Key Topics, December 2020, NIRB Registry No. 332182
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379
- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No.320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.3.2 Summary of Assessment Conclusions

735. Section 8.2.2.2 (Education and Training) of the Guidelines required consideration of training and education needs, including training programs. Baffinland refers the Board to Section 3, “Education and Training” of TSD 25 for a summary of assessment methodology, effects assessment and conclusions on this topic.
736. The Approved Project was predicted to have a positive residual effect on life skills amongst young adults, which are anticipated to arise from the Project through access to industrial work supported by pre-employment preparation and on- the-job training. The Project was also predicted to have positive residual effects on incentives related to school attendance and success, and opportunities to gain skills across the LSA. No significant adverse residual effects were predicted with respect to education and training.
737. Overall, the Phase 2 Proposal assessment for the education and training VSEC has not substantially changed from the Approved Project assessment.
738. The nature and magnitude of effects are largely consistent with the FEIS and ERP Addendum where no new residual effects have been identified and positive effects are predicted. No significant negative effects are predicted.
739. Baffinland used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project, with two notable exceptions. As noted in Section 3.6.1 of TSD 25, magnitude parameters for the residual effect ‘improved life skills amongst LSA residents’ have been updated to better reflect the full scope of life skills development opportunities presented by the Project (i.e. the focus of the residual effect was changed from ‘youth’ to ‘LSA residents’). The ‘social extent’ criterion has also been changed from ‘young adults’ to ‘community’, to better reflect the scope of these opportunities.
740. The Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to education and training, although positive effects in some areas may be enhanced. The additional short-term construction phase for the 12 mtpa North Railway component and small reduction in overall employment levels are not considered substantial changes. Likewise, the operation phase of the Project is unchanged at 21 years. Assessment outcomes for education and training remain the same.
741. The ratings assigned to the residual effects evaluated above are presented in Table 3.4 of TSD 25; these effects were previously assessed to be positive overall and significant.

742. Overall assessments of the key indicators ‘life skills’ and ‘education and skills’ also remain the same. That is, positive residual effects on life skills amongst LSA residents are anticipated to arise from the Project through access to industrial work supported by pre-employment preparation and on-the-job training. The Project will also have significant beneficial residual effects on education and skills across the LSA. Some potential that individuals may drop out of school or forego further education in order to work at the Project is recognized. However, the overall effect of the Project will be to increase the value of education and thereby the ‘opportunity cost’ of dropping out of school.
743. The positive effects of the Project are being realized by individuals employed by the Project and their families. The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will continue, and possibly be enhanced as Baffinland looks to increase its efforts to train, recruit and advance its Inuit workforce through the implementation of the education and training provisions of the IIBA and related initiatives (e.g. IHRS and Q-STEP). There will be a small shift in employee skill level requirements associated with the Phase 2 Proposal, which may create some additional opportunities for education and training.
744. Baffinland continues to take positive steps to increase Inuit training and employment at the Project and has developed new training-related initiatives to this end. The IHRS is a key strategic document for Baffinland in this area and describes goals and initiatives that will be used by the Company to enhance Inuit employment, training, and skills development at the Project. Baffinland will report on the results of IHRS training and skills development initiatives through quarterly and annual IIBA implementation reports, and the Project’s socio-economic monitoring report. Q-STEP results measurement indicators have also been developed. Data generated from Q-STEP evaluation efforts will be presented in relevant monitoring reports.
745. Furthermore, Baffinland will continue to track rates of Project pre-employment and on-the-job training, government educational statistics, employee survey results, and other relevant information pertaining to education and training through its annual socio-economic monitoring program. Baffinland’s current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project’s overall socio- economic performance in the future.

6.3.3 Conclusions and Recommendations of Baffinland to the Board

746. Since the assessment, Baffinland has committed to the following additional mitigations relevant to this topic based on discussions with the Hamlet of Pond Inlet, the QIA and the GN, which further supports the conclusions of TSD 25:
- Baffinland will construct and operate a Baffinland office centre in each community. Each office centre will have Baffinland office space, a training room, engagement walls to share Project updates and information, a medical examination room, country food kitchen and an Elders room. Office centres will be constructed in Arctic Bay, Clyde River, Igloolik, Pond Inlet, and Sanirajak. (Commitment 245)

- Baffinland will commit to the creation of 27 new positions in each impacted community (Arctic Bay, Clyde River, Igloolik, Pond Inlet, and Sanirajak). There will be 20 positions within a community-based training program as well as 7 community-based positions, including a Baffinland Community Liaison Officer (BCLO), Inuit Qaujimajatuqangit Advisor, Community Resource Coordinator, Inuit Success Team Advisor, Community Counselor, Trainer and Office Manager. Pond Inlet will have two additional positions, including a second BCLO and a Community Monitoring Coordinator. (Commitment 243)
- The Proponent shall work with the GN through their MOU to promote employment opportunities with the Mary River Project across all Qikiqtani communities. 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. (Commitment 62)
- 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. (Commitment 23)
- Baffinland and QIA included several relevant measures in the ICA that relate to training, which include;
 - The development of a new Inuit Career Mobility Strategy
 - Extended the annual payment of \$1.5 million for Inuit training programming for the life of the Project (previously 10 years)
 - In addition to any remedial measures in relation to measurable objectives, additional penalties of between \$500,000 and \$750,000 to be levied for failing to meet employment and training objectives.

747. Monitoring will continue under the Mary River Socio-Economic Monitoring Program, which may be supplemented with additional community specific data generated through a Social Monitoring Program to be implemented by the QIA through the Inuit Stewardship Plan.

6.4 Livelihood and Employment

6.4.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment - Change in Livelihood and Employment, NIRB Registry No. 320585
- TSD 26: Labour Market Analysis, NIRB Registry No. 320570
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379

- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.4.2 Summary of Assessment Conclusions

748. Section 8.2.3.2 (Livelihood and Employment) of the Guidelines requires consideration of labour force development, job creation, and business and contracting opportunities.
749. The Approved Project was predicted to deliver significant positive effects to LSA communities with respect to two key indicators. More specifically, positive effects were predicted for the key indicators ‘wage employment’ (which includes the residual effects ‘creation of jobs in the LSA’ and ‘employment of LSA residents’) and ‘job progression and career advancement’ (which includes the residual effect ‘new career paths’) (Baffinland 2012 and 2013). These positive effects were anticipated to arise from new employment opportunities, local hiring commitments, and career progression opportunities provided by the Project. These positive effects are currently being monitored and are largely consistent with original predictions, although LSA employment is one area where Project activities have not fully met Approved Project predictions to date (Appendix B).
750. The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will continue to be realized, and possibly enhanced as Baffinland looks to boost its efforts on the recruitment, retention, and training of its Inuit workforce through the implementation of provisions in the IIBA such as the development of an IHRS, and through the Inuit Procurement and Contracting Strategy (IPCS) and the Q-STEP training program
- Overall, the Phase 2 Proposal assessment for the livelihood and employment VSEC has not changed from what was assessed for the Approved Project. More specifically the nature and magnitude of effects are consistent with the FEIS and ERP Addendum, no new residual effects were identified; and positive effects are predicted. No significant negative effects are predicted.

751. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for livelihood and employment will be created. More specifically, the Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to livelihood and employment, although positive effects in some areas may be enhanced due to the new Inuit employment commitments made by Baffinland. The Phase 2 Proposal's new employment opportunities may generate additional benefits, but this and the small reduction in total employment levels are not considered substantial changes. The operation phase of the Project is also unchanged at 21 years and overall assessment outcomes remain the same.
752. The ratings assigned to the residual effects evaluated above are presented in Table 4.9 of TSD 25; these effects were previously assessed to be positive and significant. Baffinland has used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project. Overall assessments of the key indicators 'wage employment' and 'job progression' also remain the same. That is, the Project will continue to have a positive effect on wage employment in the North Baffin LSA by introducing new job opportunities and assisting local residents to access these jobs. The Project will also have a positive effect on the ability of local residents to progress in their jobs and career choices. This effect will arise as a result of the new career paths that will be introduced to the region, from entry level through step-by-step advancement to higher level jobs.
753. Baffinland continues to pursue increased Inuit employment at the Project and has finalized an IHRS and IPCS with the QIA to this end. The IHRS and IPPS are key strategic documents that describe goals and initiatives that will be used by Baffinland to improve Inuit employment, training, and retention at the Project. The recently developed Q-STEP training program also contains several measures Baffinland will use to increase Inuit employment and skill levels moving forward.
754. Baffinland will continue tracking potential Project effects on livelihood and employment through its annual socio-economic monitoring program and IIBA implementation reports. This will include monitoring of LSA employment (e.g. hours of labour performed, Inuit employee promotions and turnover), employee origin, and LSA employee payroll amounts. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal.¹⁷ However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

6.4.2.1 IIBA Targets

755. Certain participants have repeatedly brought up past challenges in meeting Inuit employment targets under the IIBA.
756. Regardless of the Inuit employment targets under the IIBA, it is Baffinland's goal to hire as many Inuit as possible regardless of their qualifications. Baffinland works with communities and the education system to help support Inuit in readiness for work at Mary River, and these skills are transferrable to any employment they wish to pursue.

757. However, whether or not Baffinland is meeting its Inuit employment targets under the IIBA is not particularly relevant to the NIRB's decision. The NIRB does not have any enforcement role under the IIBA or ICA. What is important for NIRB to consider in relation to its assessment of Phase 2 is the actual number of Inuit jobs at Mary River that could be lost if Phase 2 does not proceed, and that could be gained if Phase 2 proceeds. By Baffinland's evidence offered during the November 2021 public hearing, that number currently stands at 325. That number is already many times higher than the employment opportunities offered to Inuit via the Tallurutiup Imanga IIBA (2 positions, by the evidence of Parks Canada offered during the hearings³⁰¹) or potentially available to Inuit through the GN (200 positions, by the evidence of Government of Nunavut³⁰²). The Government of Nunavut gave clear evidence during the April 2021 public hearings that they have not identified any viable alternatives to replace these 325 positions should they disappear from the Nunavut economy, particularly in light of Nunavut's growing young population.
758. The IIBA and ICA include enhanced structures that will see Baffinland make financial payments going forward if the Inuit employment targets are not met. These payments are to be managed in a way that will help Baffinland and Inuit achieve the target employment levels in future and to maximize Inuit employment and contracting opportunities.

6.4.3 Conclusions and Recommendations of Baffinland to the Board

759. Since the assessment, Baffinland has committed to the following additional mitigations relevant to this topic, which further supports the conclusions of TSD 25:
- Baffinland will construct and operate a Baffinland office centre in each community. Each office centre will have Baffinland office space, a training room, engagement walls to share Project updates and information, a medical examination room, country food kitchen and an Elders room. Office centres will be constructed in Arctic Bay, Clyde River, Igloolik, Pond Inlet, and Sanirajak. (Commitment 245)
 - Baffinland will commit to the creation of 27 new positions in each impacted community (Arctic Bay, Clyde River, Igloolik, Pond Inlet, and Sanirajak). There will be 20 positions within a community-based training program as well as 7 community-based positions, including a Baffinland Community Liaison Officer (BCLO), Inuit Qaujimajatuqangit Advisor, Community Resource Coordinator, Inuit Success Team Advisor, Community Counselor, Trainer and Office Manager. Pond Inlet will have two additional positions, including a second BCLO and a Community Monitoring Coordinator. (Commitment 243)
 - The Proponent shall work with the GN through their MOU to promote employment opportunities with the Mary River Project across all Qikiqtani communities. 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

³⁰¹ Hearing Transcript, Vol. 20, 3745

³⁰² Hearing Transcript, Vol. 15, 2920

travel for all Inuit Baffinland employees from across the Qikiqtani Region to a point of hire community. (Commitment 62)

- 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. (Commitment 23)
- Baffinland and QIA included several relevant measures in the ICA that relate to training, which include;
 - A new system for setting Minimum Inuit Employment Goals (MIEG) on a three (3) year interval
 - In addition to any remedial measures in relation to measurable objectives, additional penalties of between \$500,000 and \$750,000 to be levied for failing to meet employment and training objectives.

760. Monitoring will continue under the Mary River Socio-Economic Monitoring Program, which may be supplemented with additional community specific data generated through a Social Monitoring Program to be implemented by the QIA through the Inuit Stewardship Plan.

6.5 Economic Development and Self-Reliance

6.5.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment - Change in Economic Development and Self Reliance, NIRB Registry No. 320585
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379
- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.5.2 Summary of Assessment Conclusions

761. Section 8.2.4.2 (Economic Development and Self-Reliance) of the Guidelines required consideration of impacts to the local economy, including stimulation of local businesses and potential impacts on traditional economic activities.
- Consistent with the assessment of the Approved Project, a modified approach has been taken to assess the significance of the Phase 2 Proposal's effects on this VSEC. This approach involves considering the interactions between the Project and four key components of economic development and self-reliance: land, people, community economies, and territorial economy. Residual effects are not assessed, although the four components mentioned above are considered key indicators. Since several other VECs and VSECs all contribute to this valued component, this assessment is an integration of the effects assessments conducted for these other valued components. Project interactions on the VECs and VSECs that contribute to the economic development and self-reliance VSEC are described in detail elsewhere in the Addendum to the FEIS for the Phase 2 Proposal.
 - The overall direction of the effects of the Project on the economic development and self-reliance VSEC were assessed for the Approved Project to be positive and significant (Baffinland 2012 and 2013). The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will be sustained, and possibly enhanced as Baffinland looks to boost its efforts in a number of areas, including the recruitment and training of its Inuit workforce, and through further development of Inuit business and contracting opportunities.
 - Overall, the Phase 2 Proposal assessment for the economic development and self-reliance VSEC has not changed from what was assessed for the Approved Project. More specifically the nature and magnitude of effects are consistent with the FEIS and ERP Addendum, no new residual effects were identified and positive overall effects are predicted. No significant negative effects are predicted.
762. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for economic development and self-reliance will be created. More specifically, the Phase 2 Proposal will not introduce any new activities that change the previously assessed effects to economic development and self-reliance, although positive effects in some areas may be enhanced. The additional short-term construction phase for the 12 mtpa North Railway component, additional capital expenditure associated with this construction phase, and new employment opportunities (but small reduction in overall employment) will generate additional benefits, but are not considered substantial changes. The operation phase of the Project is also unchanged at 21 years and overall assessment outcomes remain the same as those presented for the Approved Project. That is, the effects are still assessed to be positive and significant.

763. A significance table is not included for this VSEC. The assessment of this VSEC was integrative in nature. It relied primarily on the conclusions of other VEC and VSEC residual effect assessments to understand the Phase 2 Proposal's interactions on economic development and self-reliance. Specific residual effects were not identified or assessed for this VSEC. Rather, overall assessments of the key indicators 'land', 'people', 'community economy', and 'territorial economy' were conducted and conclusions were drawn based on this integrated analysis.
764. The overall direction of the Phase 2 Proposal's effects on the economic development and self-reliance VSEC has been assessed, with a high level of confidence, to be positive. Similar to previous assessments of the Approved Project, direct and indirect economic expansion associated with the Project will create new opportunities for employment and business across the RSA, and particularly within the LSA. The Project will also enhance labour force capacity and increase Inuit business capacity. The assessment of Project interactions on land and land use dimensions of this VSEC suggest that these effects will be multi-dimensional, although no significant adverse effects on the underlying VECs have been assessed. An integrated analysis of the combined effects of the Project did not lead to an assessment of adverse effects on harvesting, and suggested the potential for beneficial outcomes was equally or more highly anticipated than the potential for adverse outcomes. Considering the Project's interactions with these multiple dimensions related to economic development and self-reliance, the overall effects are assessed to be positive and significant.
765. Baffinland will continue tracking indicators relevant to economic development and self-reliance through its annual socio-economic monitoring program. This will occur primarily through the monitoring of indicators developed for other VECs and VSECs. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

6.5.3 Conclusions and Recommendations of Baffinland to the Board

766. Many of the commitments listed with respect to the valued socio-economic components of education and training, livelihood and employment community infrastructure and public services, contracting and business opportunities as well as benefits, royalties and taxation will equally apply to economic development and self-reliance, as those investments will no doubt have positive effects on the local economies of the Impacted Communities, which further supports the conclusions of TSD 25:
- Monitoring will continue under the Mary River Socio-Economic Monitoring Program, which may be supplemented with additional community specific data generated through a Social Monitoring Program to be implemented by the QIA through the Inuit Stewardship Plan.

6.6 Human Health and Well-being

6.6.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619

- TSD 25: Socio-economic Assessment - Change in Human Health and Well-being, NIRB Registry No. 320585
- Technical Comment Response HC 06 Attachment 1: Full Response (Air Quality Human Health), NIRB Registry No. 323799-323805
- Technical Comment Response HC 12 Attachment 1: Full response (Country Foods Animal Assumptions), NIRB Registry No. 323799-323805
- Technical Comment Response HC 09 Attachment 2: Worked Example of Exposure and Risk Estimates, NIRB Registry No. 323799-323805
- Additional Assessment Information Health Canada HC-TIR-10 – Human Health Risk Assessment, NIRB Registry No. 325252
- Final Written Submission ECCC-FC1 Attachment 2: Human Health Based Dustfall Thresholds for Mine and Port Site, NIRB Registry No. 327139-327149
- Final Written Submission Attachment 3 Food Security Assessment, NIRB Registry No. 327139-327149
- Human Health and Exposure Potential Assessment Presentation, NIRB Registry No. 327284
- Human Health and Food Security Presentation, NIRB Registry No. 331376
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379
- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.6.2 Summary of Assessment Conclusions

767. Section 8.2.5.2 (Human Health and Well-being) of the Guidelines requires consideration of community health from Project activities, including indirect effects such as substance abuse and family violence as well as health, safety and security of workers on-site. Potential effects to community health and well-being are anticipated to arise primarily from Project employment opportunities; more specifically, the new incomes it brings and challenges fly-in/fly-out employment can present.

768. The human health risk assessment for the original project considered exposures that could occur from soil and dust deposition, consumption of country foods and surface water, as well as inhalation of air. The focus of the assessment was on human health and terrestrial wildlife, using caribou as an important representative wildlife species. Standardized, widely accepted methods were used to conduct a risk assessment. Protective assumptions were used in the assessment including the estimation of dust deposition from the atmospheric assessment using upper bound, operational conditions. Also, by assuming that Elders and families with young children would be on the land for either short or longer term exposure periods and that harvesting occurs in areas near the project development area.
769. The conclusions of the assessment are that mining activities will result in release of dust from the ore in the vicinities of the Mine Site and Milne Port and from road dust along the Northern Transportation Corridor. Once the rail line is constructed, dust levels from transportation of ore will be greatly reduced³⁰³
770. Ore dust deposition from the project is not predicted to result in levels of metals in the local study area that would be harmful to the health of animals considered in the assessment including caribou, Arctic hare, ptarmigan, snow goose, Narwhal, ring seal, and sea-run Arctic char.³⁰⁴ Project-related health risks from consumption of country foods from the local study area are negligible, which means they are so small that they are considered too small to be measured.
771. Baffinland also completed a stand-alone Food Security Assessment in response to a request from QIA. The Food Security Assessment considered available IQ (project specific and in the literature), historic factors affecting food security, wildlife harvesting, current status of food security and community perspectives to determine the nature of project and cumulative effects. The Assessment also made distinct considerations for store bought food versus country food.
772. A focusing question to assist in establishing the overall effect of the Project to country food security was, 'will the benefits delivered by the Project in terms of enabling country food harvesting offset the potential adverse effects (i.e., harvest losses)?' The response to this question is 'yes', and with an equally positive effect anticipated for store bought food, the Project is anticipated to have positive an overall positive effect on food security.

³⁰³ Transcript, Vol. 3, 486-487

³⁰⁴ Transcript, Vol 3, 487

6.6.2.1 Risk Communication Strategy

773. In addition to general mitigations to contributing factors such as dust, Baffinland commits to developing a risk communication strategy focused on gathering and dissemination of information to Inuit related to the Mary River Project and linkages between the project and human health and ecological risk assessment topics. This program will be developed with insight from community representatives to ensure that the strategy is culturally relevant and speaks to issues important to each community's concerns.³⁰⁵
774. A number of commitments were made related to human health and exposure potential. Some selected examples relevant to this topic include continued monitoring in environmental media for metals of interest in the country foods risk assessment study, with a commitment to rerun the risk assessment if metals concentrations are found to be increasing in environmental media.³⁰⁶

6.6.2.2 Quality of Country Foods

775. We also ran a baseline country food risk assessment, which estimates risks before mining activities started. In some instances, elevated levels of risk were predicted in this baseline scenario. These predictions are related to assumptions we used in the assessment, which we believe could overestimate exposure and risk. The project is not going to add significantly to those risks as project risks were found to be negligible.³⁰⁷
776. Baffinland's proposed approach to addressing concerns raised respecting quality of country foods is twofold: first it will continue to monitor contaminants of potential concern as part of a country foods risk assessment, and second, it will ensure the results of those risk assessments are properly communicated to communities.
777. Baffinland will continue with monitoring of contaminants of potential concern reported in the country foods risk assessment during all phases of the Project, including closure. If increases in a specific contaminant of potential concern are confirmed to be occurring outside or inside (in the closure phase) of the Project Development Area 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.

³⁰⁵ Transcript, Vol. 3, 489

³⁰⁶ Transcript, Vol. 3 489

³⁰⁷ Transcript, Vol 3, 487

778. Baffinland also recognizes that it is equally important to ensure that community members are aware and have confidence in the findings of the country foods risk assessment that foods are in fact safe to eat. To achieve this goal, Baffinland has committed to the development of a risk communication strategy that build capacity in understanding regarding ecological risk assessment, and will communicate to Inuit any issues in relation to human health.

6.6.3 Conclusions and Recommendations of Baffinland to the Board

779. Baffinland and Intervenor, including the Hamlet of Pond Inlet, the QIA and Health Canada have developed a number of new commitments. No outstanding issues remain with these Intervenor. The following additional mitigations relevant to this topic have been proposed to the NIRB, which further supports the conclusions of TSD 25:
- a. Baffinland will also support the Hamlet of Pond Inlet with a direct contribution toward an upgrade or construction of a Health Center in Pond Inlet. Baffinland commits to a \$5M donation toward this cause should approvals through Federal and Territorial Governments grant approve such a project. (Commitment 254)
 - b. Include Tuggat, Qurluktuk and Iqaluit river systems in its Arctic Char Health Monitoring Program, carried out pursuant to PC005 Term and Condition 48(a). Baffinland may alter or add to this list of water bodies in the future based on consultation with Pond Inlet. (Commitment 251)
 - c. Baffinland will develop and fund a Community Based Monitoring (CBM) program out of Pond Inlet that is Inuit led to monitor the extent of visual dust in the Project Area as well as a snow sampling program (Commitment 234)
 - d. Baffinland commits to develop a risk communication strategy focused on the 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. (Commitment 157)
 - e. Baffinland is committed to fully resourcing an Inuit-led country food baseline study for Pond Inlet and integrating the results into Project management, monitoring and compensation systems, including reconsideration of mitigations and compensation programs proposed by Baffinland in relation to food security based on the results of the Pond Inlet Country Food Baseline Study. This work will be Inuit-led and administered by the QIA, and supported by Baffinland. (commitment 136)
 - f. 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." (Commitment 59)

- g. 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. (Commitment 58)

780. Monitoring will continue under the Mary River Socio-Economic Monitoring Program, which may be supplemented with additional community specific data generated through a Social Monitoring Program to be implemented by the QIA through the Inuit Stewardship Plan.

6.7 Community Infrastructure and Public Services

6.7.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment - Change in Community Infrastructure and Public Services, NIRB Registry No. 320585
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379
- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.7.2 Summary of Assessment Conclusions

781. Section 8.2.6.2 (Community Infrastructure and Public Services) of the Guidelines required consideration of potential impacts to community and public services and infrastructure, including increased costs, demands on services and/or infrastructure, including healthcare. Phase 2 Proposal activities have the potential to result in a change in community infrastructure and public services.

782. The Approved Project was assessed to have both positive and adverse effects on LSA communities with respect to the community infrastructure and public services key indicator ‘hamlet staff recruitment and retention’ (Baffinland 2012 and 2013). More specifically, the Project was predicted to have a significant positive residual effect on labour force capacity, and non-significant adverse residual effect on competition for skilled workers. These effects were anticipated to arise from Project employment opportunities that will build the capacity of the local labour force over time through work-related skills development and experience, but may also create competition with local employers.
783. The nature of the activities associated with the Phase 2 Proposal are such that these effects are likely to continue, but remain within originally predicted thresholds. Phase 2 Proposal employment levels will be similar to the Approved Project and additional competition with local employers will be limited. Furthermore, the operation phase of the Project remains unchanged at 21 years. Other minor changes to what was previously assessed for the Approved Project are described elsewhere in this section.
784. Overall, the Phase 2 Proposal’s assessment of community infrastructure and public services has not changed from what was assessed for the Approved Project. More specifically the nature and magnitude of effects are consistent with the FEIS and ERP Addendum, no new residual effects were identified; and no significant negative effects are predicted.
- No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for community infrastructure and public services will be created. More specifically, the Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to community infrastructure and public services, although positive effects in some areas may be enhanced. However, the new construction employment opportunities will be short-term and the small decrease in total person-years of employment are not considered substantial changes. The operation phase of the Project is also unchanged at 21 years and overall assessment outcomes for community infrastructure and public services remain the same.
 - The ratings assigned to the residual effects evaluated above are presented in Table 7.3 of TSD 25. The effect on ‘competition for skilled workers’ was assessed to be adverse, but not significant. The effect on ‘labour force capacity’ was assessed to be positive and significant. Baffinland has used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project.
 - An overall assessment of the key indicator ‘hamlet staff recruitment and retention’ (which includes the two residual effects noted above) was also presented in the assessment of the Approved Project. The conclusions of this analysis remain the same for the Phase 2 Proposal. That is, the Project may lead to some residual adverse effects on the ability of hamlets to recruit and retain workers, as the level of competition for these workers increases through Project hiring. However, these effects are not considered to be significant, based on their short-term duration and as Project-initiated training leads to improved levels of skill and experience in the labour force. As training and experience increases in the medium to long-term, this labour force capacity development effect will lead to significant positive outcomes on hamlet abilities to recruit workers.

- Baffinland will continue to track potential Project effects on community infrastructure and public services through its annual socio-economic monitoring program. This will include monitoring of employee-specific information (e.g. through surveys, and employment and training records), Project-related community infrastructure use, government statistics (e.g. on health centre usage), and other relevant information. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

6.7.3 Conclusions and Recommendations of Baffinland to the Board

785. Since the assessment, Baffinland has committed to the following additional mitigations relevant to this topic, which further supports the conclusions of TSD 27:
786. An annual payment of up to \$3.68 million per year to the community of Pond Inlet to help support community wellness initiatives as decided by the Hamlet and the MHTO. Specifically, this includes:
787. An annual payment to the Pond Inlet Tasiuqtiit Working Group for each ore carrier that travels by their community, which could amount to \$1,680,000 per year at full Phase 2 operations (168 vessels @ \$10,000/vessel). This working group has already received \$590,000 to date with an additional \$190,000 coming for the 2021 season.³⁰⁸
788. An annual payment to the Tasiuqtiit Working Group, or similar body as directed by the Hamlet of Pond Inlet for each individual loaded ore car delivered to Milne Port, valued at up to \$2 million per year (120,000 loaded ore cars @ \$16.67/car). This is in addition to the funds provided for ore carriers transporting ore through the Northern Shipping Corridor referenced in the previous bullet.³⁰⁹
789. Baffinland commits to providing up to \$3 million per Impacted Community to build daycare facilities, for a total \$15 million investment; should Steensby go into operation, Baffinland will make \$3 million available for Kinngait and Kimmirut as well for the same purpose of building daycare infrastructure (Commitment 154)
790. Baffinland proposes to commit the funds necessary to build the Fire Hall proposed in the Hamlet of Pond Inlet's Integrated Community Sustainability Plan (ICSP) for the 2021/2022 year. (Commitment 253)

³⁰⁸ Transcript, Vol. 17, 3173

³⁰⁹ Commitment List, Commitment 253

791. Baffinland will also support the Hamlet of Pond Inlet with a direct contribution toward an upgrade or construction of a Health Center in Pond Inlet. Baffinland commits to a \$5M donation toward this cause should approvals through Federal and Territorial Governments grant approve such a project. (Commitment 254)
792. Baffinland will work with the Hamlet of Pond Inlet to prepare applications for the GN's community roads program. If applications are denied, or insufficient to cover the full costs of planning, design, and construction, Baffinland will pay the difference. This will be a 5-year agreement to improve road infrastructure in Pond Inlet. (Commitment 255)
793. To manage dust created from conventional road building, Baffinland will continue to support Cypher Environmental in their contributions to the Hamlet of Pond Inlet of their trademark product DustBlok to reduce dust coming from community roads. (Commitment 256)
794. Baffinland will work with the QIA to ensure the Hamlet of Pond Inlet is prioritized under Article 23.4 when surplus equipment and machinery becomes available. (Commitment 258)
795. Baffinland will construct and operate a Baffinland office centre in each community. Each office centre will have Baffinland office space, a training room, engagement walls to share Project updates and information, a medical examination room, country food kitchen and an Elders room. Office centres will be constructed in Arctic Bay, Clyde River, Igloolik, Pond Inlet, and Sanirajak. (Commitment 243)
796. A community garage pilot project will be established to provide opportunities for apprentice mechanics and high school co-op students to further develop their skills while filling a critical services gap that exist in the community for vehicle maintenance. The pilot project will be constructed in Sanirajak, with garages or equivalent projects constructed in Arctic Bay, Clyde River, Igloolik and Pond Inlet following the completion of the pilot project. (Commitment 244)
797. Monitoring will continue under the Mary River Socio-Economic Monitoring Program, which may be supplemented with additional community specific data generated through a Social Monitoring Program to be implemented by the QIA through the Inuit Stewardship Plan.

6.8 Contracting and Business Opportunities

6.8.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment - Contracting and Business Opportunities - Change in Contracting and Business Opportunities, NIRB Registry No. 320585
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379
- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557

- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No.320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.8.2 Summary of Assessment Conclusions

798. Section 8.2.7.2 (Contracting and Business Opportunities) of the Guidelines required consideration of potential impacts to contracting and business opportunities, including economic effects from Project contracts, competition for other businesses, and a discussion of barriers to local business capacity building. Phase 2 Proposal activities have the potential to result in a change in contracting and business opportunities.
799. The Approved Project was predicted to have positive residual effects on creating an expanded market for business services to the Project in the LSA and RSA, and creating an expanded market for consumer goods and services in the LSA (Baffinland 2012 and 2013). These were anticipated to arise from new business opportunities created by the Project and new incomes generated through Project-related employment. No adverse residual effects were predicted with respect to contracting and business opportunities. Positive effects are currently being realized by businesses and individuals throughout Nunavut (Appendix B).
800. The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will continue to be realized, and possibly enhanced as Baffinland looks to expand its operations (e.g. through additional capital expenditure and contracting opportunities associated with the 12 mtpa phase) and boost its local contracting efforts through the implementation of its IPCS, recently developed jointly with the QIA.
801. Overall, the Phase 2 Proposal assessment of contracting and business opportunities has not changed from what was assessed for the Approved Project. More specifically the nature and magnitude of effects are largely consistent with the FEIS and ERP Addendum, no new residual effects were identified; and positive effects are predicted. No significant negative effects are predicted.

802. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for contracting and business opportunities will be created. The Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to contracting and business opportunities, although positive effects in some areas may be enhanced. The additional capital expenditure, contracting, and employment opportunities associated with construction of the 12 mtpa operation will generate additional benefits, but are not considered substantial changes. The operation phase of the Project is also unchanged at 21 years and overall assessment outcomes remain the same.
803. The ratings assigned to the residual effects evaluated previously are presented in Table 8.5 of TSD 25; these effects were previously assessed to be positive and significant. Baffinland has used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project, with one notable exception. As noted previously, the magnitude rating for the residual effect 'expanded market for business services to the Project' has been changed from 'uncertain' in the LSA, to 'moderate-high'. This is the same magnitude rating attributed to the RSA and has been changed as a result of evidence collected through Baffinland's monitoring program confirming contracts with Inuit-owned businesses and joint ventures in the LSA continue to be established.
804. Baffinland continues to take steps towards increasing Inuit contracting and employment at the Project and has finalized an IPCS with the QIA to this end. The IPCS describes goals and initiatives that will be used by Baffinland to improve Inuit contracting during the Phase 2 Proposal. Baffinland will monitor and report on the results of IPCS initiatives through quarterly and annual IIBA implementation reports, and the Project's socio-economic monitoring report.
805. Furthermore, Baffinland will continue to track Project-generated contracting and business opportunity outcomes through its annual socio-economic monitoring program. This will include monitoring the value of procurement with Inuit-owned businesses and joint ventures, LSA employee payroll amounts, and the number of registered Inuit firms in the LSA. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

6.8.3 Conclusions and Recommendations of Baffinland to the Board

806. Since the assessment, Baffinland has committed to the following additional mitigations relevant to this topic, which further supports the conclusions of TSD 27:
807. The creation of a Preferred Inuit Firm (PIF) list, wholly-owned Inuit Firms located in the Qikiqtani Region can receive priority access to certain contracting opportunities and preference in bid evaluation. Baffinland and QIA will be setting minimum PIF contracting goals (analogous to MIEGs), which Baffinland is then required to meet or exceed.

808. Contract-specific Inuit Content Requirements (ICRs) will now be set for every contract. The ICRs will further increase Inuit employment, training, and subcontracting opportunities through Baffinland's contracts with Inuit and non-Inuit Firms.
809. Further Inuit Firm assistance/capacity development, including 'tailoring' of large contracts to promote PIF participation in these contracts through subcontracting to major contractors.
810. Monitoring will continue under the Mary River Socio-Economic Monitoring Program, which may be supplemented with additional community specific data generated through a Social Monitoring Program to be implemented by the QIA through the Inuit Stewardship Plan.

6.9 Culture, Resources and Land Use

6.9.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment - Culture, Resources and Land use (Loss of Cultural Resources, Change in Access to or Availability of Harvesting Resources, Change in Access to Travel Corridors and Camps), NIRB Registry No. 320585
- Final Written Submission Attachment 3 Food Security Assessment, NIRB Registry No. 327139-327149
- Post Hearing Submission MHTO-12 Attachment 1: Memo on Snow Sampling, NIRB Registry No. 334146-334147
- Socio-Economic Environment Presentation, NIRB Registry No. 327287
- Socio-Economic Environment Presentation, NIRB Registry No. 331379
- Socio-Economic Environment Presentation, NIRB Registry No. 332554
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
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6.9.2 Summary of Assessment Conclusions

811. Baffinland conducted a Culture, Resources and Land Use Assessment (TSD 25) to assess Potential impacts to archaeological resources, and land use activities such as hunting, fishing, marine harvesting, traveling, recreational and religious activities.
812. The conclusions for the assessment for culture, resources and land use has not noticeably changed with the Phase 2 Proposal from those of the approved Project as the nature and magnitude of the effects to culture, resources and land use are consistent with the FEIS. The CRLU assessment took into account the commitment to robust environmental mitigations for the protection of wildlife and to minimize negative interactions with landusers and the implementation of strong monitoring programs as well as additional mitigations to address interactions between landusers and the project. Environmental mitigations have been covered elsewhere in this Final Written Statement so the discussion below focuses on additional mitigations which primarily relate to the experience of landusers.
813. This section will focus on four issues of particular concerns to Inuit and communities:
- Travel on the transportation corridor;
 - Effects of dust on land use;
 - Potential effects on harvesting; and
 - Food security and availability of country foods

6.9.2.1 Travel in the Northern Transportation Corridor

814. Baffinland has heard from Inuit through its engagement activities, as well as through the NIRB review process that the ability to travel in the Northern Transportation Corridor is a priority. Baffinland has proposed several mitigations that demonstrate its commitment to maintaining accessibility to the land around and through the Mary River Project, including:
- Baffinland has heard community members would like to obtain increased access to the Tote Road, often with reference to the road access program for Meadowbank. As a result of Phase 2 and the removal of most of the current traffic (including ore hauling by truck), community members will have better access to the road than previously. Safety is a paramount concern for Baffinland, not just for its staff and contractors, but also any land users who interact with Project infrastructure. To this end, Baffinland has committed to implementing a Tote Road Access Program following the construction of the North Railway and when ore haulage by truck is discontinued to allow increased access to the road based on a protocol to be developed in collaboration with Inuit. In addition, all support currently provided by site including shelter, food and fuel will continue to be provided to assist land-users travelling through the Project Area. (Commitment 42)
 - Baffinland has committed to not build the originally proposed deviation Route 1 around the km 67 hill, instead electing to build the alternative deviation Route 3, which avoid a well known travel route between Igloolik and Pond Inlet.

- To ensure the safety of land users in and around the project area at all times in relation to Phase 2, Baffinland has committed to submitting to NIRB a Safety Protocol and Communications Plan prior to construction and operation of the North Railway. (Commitment 61)
- To facilitate caribou monitoring and other Inuit driven research along the North Railway, three observation stations, that will double as emergency shelters, will be constructed at locations to be determined with relevant parties. (Commitment 238)
- Baffinland will implement an Additional Level Crossing Construction Decision Matrix to outline the process by which community members can identify the need for new or modified ATV and/or snowmobile crossings.

815. Baffinland will work with communities to ensure safety procedures are well-understood. Through these measures Baffinland is confident that there will not be significant impacts to travel and that Inuit will continue to be able to travel safely in or near the transportation corridor.

6.9.2.2 *Effects of Dust on Land Use*

816. Although monitoring results to date indicate no long term negative effects of dustfall on vegetation, aquatic environments, marine environments, wildlife or human health, Inuit have identified the presence of dustfall as an effect in itself. The visibility of dust on snow, the land or in drinking water affects perceptions regarding the aesthetics and quality of the environment from local Inuit land users in the area. These concerns have and will continue to drive improvements in Baffinland's management of dust.
817. Replacing truck traffic with rail traffic and improving crushing facilities will reduce dust from the project. A full submission on dust management is provided in the Baffinland Engagement Summary update dated September 9, 2021, referred to in Baffinland's comments of September 10, 2021³¹⁰.

³¹⁰ BIM Community Engagement Update April - August 2021, NIRB Registry No. 336784

818. Baffinland has already initiated an independent audit of all present and future (Phase 2) dust sources across the Project to ensure the proper dust controls are in place.³¹¹ This includes an evaluation of existing and proposed dust controls for the purpose of identifying where improvements or additional measures are required. To ensure the audit fully considers the knowledge and concerns of Inuit, and that Baffinland is accountable for implementing the recommendations that follow from the audit, Nunami Stantec, the independent auditor is developing a joint Project Charter with the designated representatives from the Impacted Communities. The first onsite inspection by the auditors has already occurred and was attended by designated community representatives to provide their insights at each audit location. Improvements to the ongoing monitoring programs and information shared from Inuit-led monitoring under the Inuit Stewardship Plan, community feedback or Baffinland funded Community Based Monitoring programs will also continue to enhance the understanding of how dust travels across the landscape and how this may be impacting community use of the area. Monitoring results and Inuit feedback will continue to be used to inform potential future changes required to improve dust management performance on the Project.
819. Baffinland has committed to implementing the actions recommended from this audit as it relates to Project related dust.
820. Additional commitments towards dust management are outlined in sub-section XX
821. Baffinland is confident that concerns respecting dust and land use will be positively addressed through Phase 2 – both because there will be less dust, and because through a number of mechanisms, including monitoring and adaptive management, the effects of dust will be addressed proactively through the life of the Project.

6.9.2.3 *Harvesting*

822. As outlined previously, mitigation measures and commitments, including Inuit led monitoring and leadership on adaptive management are expected to ensure that the impacts to wildlife (terrestrial and marine) are not significant. In Part 2 of the final written statement we have addressed concerns of the MHTO respecting impacts on harvesting. Our responses are also relevant to this section and so they are repeated, as they address both wildlife protection and support for harvesters.

6.9.2.4 *Protection of Caribou and Marine Mammals*

823. Taking into account the measures we have proposed to avoid or mitigate impacts on marine mammals and caribou, outlined in the FEIS Addendum, the ICA, and other commitments, the Project will not have a significant impact on marine mammals or caribou.

824. The mitigation measures to protect caribou and marine mammals are summarized in more detail in this Final Written Submission (Section 5.7 and 5.9), but include (with references to Commitment ID Nos. in attached Commitment List, where applicable):
- Reduced the number of ore carriers to be used to no more than 168 ore carriers per year (down from the originally proposed maximum of 176) (see Commitment ID No. 241);
 - Commitment to gradually increase the number of ore carriers used over a period of several years starting the year after approval, if approved (see Commitment ID No. 242);
 - Removal of the requirement for winter shipping to avoid time periods of critical Inuit land use and harvesting activities and to avoid breaking of landfast ice – resulting in a reduction in the shipping season from the original proposed 10 months per year to approximately 4 months (see Commitment ID No. 239);
 - Establishment of restricted areas where vessels cannot travel along the shipping route (e.g., Koluktoo Bay);
 - Commitment to not commence shipping until landfast ice has broken along the entire shipping corridor and the floe edge near Pond Inlet has been closed for hunting due to safety concerns (see Commitment ID No. 215);
 - Switch from outdoor secondary crushing at the Mine Site to indoor secondary crushing at Milne Port to reduce dust emissions from this key source;
 - Switch from ore haulage by truck to rail, significantly reducing wildlife disturbance and dust generation along the Northern Transportation Corridor, as well as greenhouse gas emissions due to fuel efficiencies in transport by rail;
 - Movement of proposed rail alignment along the deviation area at the km 67 hill from Route 1 to Route 3 to avoid an identified traditional travel route between Igloodik and Pond Inlet (see Commitment ID No. 129);
 - Establishment of Special Protection Areas along the railway where additional wildlife crossings (1:3 slope embankments) may be installed; in these areas speeds may also be reduced generally or during certain times of the year, and additional wildlife surveillance monitoring may occur (see Commitment No. 67);
 - General modifications to railway design to make embankments smoother using smaller fill material (Type 12 to Type 8) and gentler by decreasing the slopes over large areas to what was proposed for the South Railway for caribou crossings only (1:1.5 to 1:2) (see Commitment No. 67).
825. Respecting concerns relating to seals, these concerns were addressed in detail in Baffinland's Written Comments of September 2021, Part VI – Seal Breathing Holes and Part XII – Ringed Seals.³¹²

³¹² NIRB Registry No. 336778

826. Those issues are addressed in more detail under the section on Marine Mammals, but the following paragraphs from the Written Comments are particularly relevant:

“138. The mitigation measures in place for ringed seal have been carefully developed to completely avoid shipping impacts on ringed seal during periods when they are ‘grouped up’ (i.e., the winter and spring) when group behaviour is critical to reproductive activities such as mating. In addition to the mitigations described at the January-February hearing, Baffinland has recently added a new mitigation commitment, in that icebreaking will not begin before July 15, which also helps to protect seals during the moulting period, and will not run later than October 31, which also aims to avoid impacts on seals at a time when they start maintaining breathing holes during initial ice freeze-up.

139. The impact of icebreaking on ringed seal during the fall will be limited to the narrow swath of the icebreaker route, which represents 0.33% of available sea ice habitat in the RSA, plus the associated acoustic disturbance zone on either side of the corridor. Animals maintaining breathing holes in late October along the ship track might experience localized disturbance effects and may elect to move away from the shipping lane to pursue these activities. The impact is expected to be temporary and intermittent in nature (on the scale of several weeks with limited number of daily transits), and not likely to result in any large-scale displacement within the RSA. No impacts on the reproduction or survival of ringed seal are anticipated to occur from either shipping or icebreaking.

140. Baffinland acknowledges feedback from Inuit hunters indicating they are observing local changes in seal abundance and distribution in the RSA, with carry-over effects on seal harvesting. In response to this feedback, Baffinland has recently committed to undertaking targeted ringed seal monitoring along the Northern Shipping Route starting in 2021. This monitoring program will incorporate IQ and Inuit perspectives into the design, planning and implementation of this monitoring program. This will include dedicated ringed seal aerial surveys to monitor for potential shipping-induced changes in ringed seal distribution and relative abundance (i.e., density and seal hot spots) in the RSA. The 2021 survey results will be compared to ringed seal baseline aerial surveys undertaken by Baffinland in the RSA in 2006, 2007, 2008 and 2014, as well as to surveys undertaken by DFO in 2016 and 2017 (Yurkowski et al. 2019). This monitoring will address any residual uncertainty with the impact predictions related to shipping and ringed seal. Tracking ringed seal numbers in the RSA has also been identified as a long-term indicator for this species as part of the OITR developed for the Phase 2 proposal.”³¹³

³¹³ NIRB Registry No. 336778

6.9.2.5 Robust Mitigation and Inuit-led Monitoring

827. In addition to Project design mitigations, Baffinland has agreed and committed to a wide range of management practices relating to operations, monitoring, ongoing assessment of potential effects, and adaptive management to avoid and mitigate potential adverse environmental and socio-economic effects. If Phase 2 is approved, the Commitment List will be attached as an Appendix to amended Project Certificate No. 005, and NIRB can recommend Terms and Conditions to the Minister based on these items as they see fit in accordance with the jurisdiction granted under NuPPAA.
828. Additionally, (and as Baffinland and QIA both suggest should also be incorporated as Project Certificate Terms and Conditions if Phase 2 is approved to proceed) Baffinland has agreed to processes and frameworks with the QIA for the establishment of an Inuit Stewardship Plan that will be guided by two Inuit Committees that will conduct independent Inuit-led monitoring of the Project for the purpose of mitigating adverse impacts and enhancing beneficial outcomes. The Inuit Stewardship Plan will be funded by Baffinland and led by Inuit from the Impacted Communities, and will help directly shape the Adaptive Management Plan.
829. Additional commitments made through the Phase 2 reconsideration process, specifically the commitment to develop Inuit objectives, indicators, thresholds and responses (OITRS) for the Phase 2 Project, will ensure that community and cultural values and priorities drive the development and management of the Mary River Project. At the QIA's request, this work will be driven by QIA on behalf of Qikiqtani Inuit. The additional commitments made by Baffinland through the NIRB process and agreed between QIA and Baffinland will ensure Inuit knowledge will be at the forefront of Baffinland's approach to monitoring and mitigating Project effects.

In addition, Inuit led independent monitoring of Project effects (including potential effects on harvesting) and Inuit participation in developing additional measures of protection under the Adaptive Management Plan. Baffinland has predicted no significant effects with committed measures to avoid or mitigate impacts, but has also agreed to adopt additional measures if necessary, on an ongoing basis.

6.9.2.6 Support to Harvesters

830. Baffinland has committed to measures to support harvesting, including:
- A one-time payment of \$1.3 million to the MHTO for changes in hunting experience that Inuit from Pond Inlet have described and to address difficulties in accessing the Wildlife Compensation Fund;
 - Funding for the purchase of a dedicated hunting vessel for Pond Inlet, not to exceed \$500k;
 - An annual payment for the Regional Harvesters' Enabling Program of \$750,000. This fund would be administered by QIA with funds potentially going towards initiatives that increase the effectiveness of harvesting or offset the cost of harvesting, such as equipment, supplies that support harvesters, or new technologies that support harvester success. This is in addition to the continuation of the existing \$750,000 Wildlife Compensation Fund;

- The existing Harvesters' Enabling Program for Pond Inlet will be expanded to include the communities of Igloodik, Sanirajak, Kimmirut and Kinngait, which would each receive the provision of 300L of gas, to a total value of \$400,000 annually (in 2018 dollars), indexed to inflation, when Steensby is developed;
- An annual payment of up to \$3.68 million per year to the Pond Inlet Tasiuqtiit Working Group to help support community wellness initiatives as decided by the Hamlet and the MHTO. Specifically, this includes:
 - An annual payment to the Pond Inlet Tasiuqtiit Working Group for each ore carrier that travels by their community, which could amount to \$1,680,000 per year at full Phase 2 operations (168 vessels @ \$10,000/vessel). This working group has already received \$590,000 to date with an additional \$190,000 coming for the 2021 season;
 - An annual payment to the Tasiuqtiit Working Group, or other group as determined by the Hamlet of Pond Inlet, for each individual loaded ore car delivered to Milne Port, valued at up to \$2 million per year (120,000 loaded ore cars @ \$16.67/car). This is in addition to the funds provided for ore carriers transporting ore through the Northern Shipping Corridor referenced in the previous bullet.

831. In addition, Baffinland meets regularly with the MHTO and has offered to provide additional administrative support to enhance their functioning and to recognize their on-going involvement in the project which has included funding additional training support and administrative positions in the MHTO.

6.9.2.7 Narwhal Harvesting Statistics

832. The reference at paragraph 122 of the MHTO Final Written Statement, that narwhal harvesting numbers have declined, is incorrect, and not consistent with the harvesting data.
833. Harvesting records up to 2021 indicate that harvesters, such as the MHTO, have been successful in harvesting narwhal since shipping began in Eclipse Sound. See the harvesting records shown on Slide 55 of the Baffinland hearing presentation on marine mammals³¹⁴ and the summary in the marine mammal section of this Final Written Submission. These numbers indicate relatively higher levels of harvesting success during current project operations.
834. The Government of Nunavut confirmed at the public hearing in November 2021 that for the 2021/22 harvesting years, the entire quota of 137 narwhal were successfully harvested. See also GN Final Written Statement, January 10, 2022:

During the Community Roundtable of the week of November 1, 2021 the topic of narwhal harvesting and tags arose.

Narwhal management ultimately is the responsibility of the Fisheries and Oceans Canada (DFO). DFO decides the allocated quotas per community and provides the tags to the local HTO who distribute them to hunters. The GN and DFO maintain a memorandum of understanding that covers enforcement, some program delivery, and harvest recording. Should a hunt be successful, and a tusk be procured, the hunter brings it to the GN wildlife office where a conservation officer will affix a metal cable tag to the tusk allowing for sale and export.

There are three distinct seasons for narwhal harvesting: Spring (April 1 to July 10), Summer (July 11 to October 15) and Fall (October 16 to March 31). During the 2021-2022 harvesting year a total of 152 tags were issued to Pond Inlet (137 for Summer, and 15 for Fall/Spring). The entire summer quota of 137 narwhal were successfully harvested and reported to the GN Wildlife Office.

There have been reports of hunters needing to travel farther and search longer during their narwhal hunts. The catch per unit effort and any potential changes to it over time have not been analyzed by the GN.

835. This also shows that narwhal harvesting has been successful during the ERP, PIP/PIPE shipping operations as indicated by high harvesting success rates in previous years (see Slide 55 of the Baffinland Marine Environment Presentation, January 2021).³¹⁵

6.9.2.8 Impacts to Harvesting Generally

836. The Board has heard evidence that employment with the Project allows time for harvesting during rotations of two weeks on and two weeks off at the mine, and that income earned at the mine supports the purchase of harvesting equipment such as boats, rifles, ammunition and gear. Many employees at the mine are harvesters as well.³¹⁶
837. However, Baffinland (and Inuit) will continue to monitor any effects and determine if additional protection measures or harvesting support are necessary.
838. Any impacts of dust on harvesting or use of the land will be reduced by using the railway to haul ore and by other measures to reduce dust from crushing ore as well as through the implementation of recommendations coming from an independent dust audit that incorporates an Inuit committee.³¹⁷
839. Baffinland has engaged in full consultation on railway alignment and on railway crossings and trail routes, and committed to specific mitigation measures such as gently sloped crossings, monitoring, and operational measures to enhance permeability of the rail for wildlife and to reduce negative interactions with landusers.

³¹⁵ Marine Environment Presentation, NIRB Registry No. 332553

³¹⁶ Hearing Transcript, November 2, 2021, 3197

³¹⁷ See Commitments 230-233, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

840. Baffinland has committed to operational changes to its proposed shipping operations to reduce potential impacts to marine wildlife (such as set-back restrictions, reduced vessel speeds and reduced numbers of ship transits or transit restrictions) and commitments to changes in the shipping route (such areas of no-go and limitations on anchoring) to minimize interactions with landusers.
841. Baffinland has committed to provide the MHTO with a vessel to be used for hunting³¹⁸ and will continue to support programs such as the Harvesters Enabling Program.
842. The Phase 2 operation will enhance access to the area by removing ore haul trucks from the Tote Road allowing hunters and land users to have improved access to the road under a program to be developed between land users and Baffinland, as well as continued support from the Project site inclusive of food, shelter and fuel.
843. Independent Inuit led monitoring and participation in ongoing assessment and adaptive management measures provide assurances that these measures will be implemented through the Inuit Stewardship Program under the ICA. Both Baffinland and the QIA (in consultation with communities and HTOs) have work to do on an ongoing basis to implement the Adaptive Management Plan. The framework, structures, funding, and objectives (incorporation of IQ, following the Precautionary Principle) are firmly established under the ICA. These commitments are also included in the Commitment List
844. Baffinland has listened to the concerns of the MHTO and Inuit harvester and has adopted measures to protect wildlife and to support harvesters on an ongoing basis. Further work on these issues will continue under the CRLU assessment committed to under the ICA as described previously.

6.9.2.9 Food Security and Availability of Country Foods

845. The issue of food security was addressed in detail in Baffinland's written comments of September 10, 2021. Because of the importance and relevance, they are repeated here³¹⁹.
846. The following submission is in reply to statements made during the Public Hearing by various Parties regarding food security and the importance of continued availability of country foods.
847. To support healthy country food diets and traditional harvesting under Phase 2, Baffinland is focused on the following:
- Maintaining the availability and quality of wildlife stocks,
 - Enhancing Inuit access to those wildlife stocks, and
 - Enhancing transference of traditional harvesting practices

³¹⁸ Commitment 257 BIM Phase 2 Disposition Table and Commitment List, Appendix A-C

³¹⁹ Baffinland Written Comments, NIRB Registry No. 336778

848. These subject areas are consistent with those identified by the Nunavut Food Security Coalition's Food Security Strategy and the focus of Baffinland's Phase 2 Food Security Assessment. What follows is a summary of the Phase 2 commitments put forward by Baffinland to directly address concerns related to food security.

6.9.2.10 Maintaining the Availability and Quality of Wildlife Stocks

849. Narwhal and caribou are historically significant sources of country food for the community of Pond Inlet. In recognition of this, Baffinland has developed several important mitigations to avoid or minimize potential effects to these wildlife populations. While Baffinland diligently manages its operations to avoid effects on wildlife generally, Baffinland provides the following summary of mitigations relevant to narwhal and caribou directly relevant to maintaining food availability ((it should be noted that this is not a comprehensive list of mitigations related to project activities that may also serve as general protection for wildlife) . As noted below, further details on each of these important commitments are set out in the Commitment List, NIRB Registry Doc.# 334537 and related correspondence filed with the Board on April 8, 2021).

6.9.2.11 Narwhal Availability

- Gradual increases in shipping above 6Mt (approximately 84 vessels) tied to confirmation of sustained wildlife populations and harvesting (see Commitment No. 242)
- Planning shipping window to occur between periods of landfast ice, no earlier than Jul 15, and no later than Oct 31 (unless required for contingency, and other shipping conditions can be met) (see Commitment No. 239 and 214)
- Application of daily transit restrictions when ice is present at the beginning and end of the shipping season (see Commitment No. 213 and 215)
- Continued vessel speed limits (see Commitment No. 89 and 95) and avoidance of key harvesting areas (see Commitment No. 89)
- End of season clearance surveys to detect and mitigate (if possible) any potential entrapment events (see Commitment No. 191)

6.9.2.12 Caribou Availability

- Special Management zones along the railway where design and operations will be suited to caribou crossing (see Commitment No. 33, 67. 236)
- Railway shutdowns during caribou migratory periods (see Commitment No. 220)
- Modified rail design to support caribou crossing (see Commitment No. 33, 67. 236)
- Dedicated caribou monitoring stations (see Commitment No. 238)
- Partnership with the Government of Nunavut on regional monitoring (see Commitment No. 68)

850. In addition to the availability of country food for harvesting, Inuit have also raised concerns regarding the quality of country food as a result of project activities. Baffinland has committed to the ongoing monitoring of health in key wildlife species.

6.9.2.13 Baffinland Led Monitoring Programs

- Adding body condition monitoring to its narwhal monitoring program (Will be included in next Commitment List submission to NIRB)
- Collaborate with the GN and Northern Contaminants Program to monitor caribou health (per current Term and Condition 35, Project Certificate)
- Baffinland will collaborate with the MHTO to monitor arctic char health in and around Milne and Navy Board Inlets (see Commitment No. 247)

851. It is noted that “Baffinland led” monitoring programs will continue to benefit from the participation of Inuit in the planning, implementation and interpretation stages, further complementing the objectives of newly proposed Inuit-led monitoring programs agreed to under the Phase 2 Proposal.

6.9.2.14 Inuit Led Monitoring Programs

- Inuit led monitoring related to country food to be developed through the Pond Inlet Country Food Baseline Study, and implemented under the Inuit Stewardship Plan (see Commitment No. 136)
- Inuit led monitoring related to culture, resources and land use, including harvesting, through the Inuit Stewardship Plan (see Commitment No. 131)
- Community Based Monitoring by the MHTO, supported by funding from Baffinland, may also identify unacceptable changes (see Commitment No. 138)

852. Should Baffinland led or Inuit led monitoring programs demonstrate that wildlife are experiencing decreases in their health and/or present concerns for Inuit consumption that can be reasonably attributed to the Project, Baffinland and Inuit will implement jointly developed and agreed to adaptive management plans. Baffinland must respond to unacceptable changes, including the modification of the project to reverse an impact.

6.9.2.15 Enhancing Inuit Access to Wildlife Stocks

853. Ensuring Inuit are able to access wildlife stocks for harvesting is as essential as ensuring the Project does not have significant effects on those wildlife stocks that affects their availability. Baffinland has committed to mitigations which support hunter access to the Project area specifically and the land and waters around Pond Inlet generally. Relevant Phase 2 commitments include:

- (a) Enhanced Community access to Tote Road under Phase 2 (see Commitment No. 42)
- (b) Additional hunter cabins along Tote Road, plus monitoring stations that will also serve as emergency shelters for hunters when needed (see Commitment No. 238)

(c) Provision of fuel, food and other supplies for Inuit at Mary River (existing Project requirement under Mary River IIBA 13.3.1 and 13.3)

(d) Designated hunter crossings across railway (see Commitment No. 61, 163)

854. Access to the land generally is supported primarily through funding to community groups as well as through commitments included in agreements with QIA, and includes:

(a) Up to \$1.68 million/year to the Tasiuqtiit Working Group (Hamlet of Pond Inlet and MHTO) to support Pond Inlet directed programming, including harvesting programming (\$10,000 per vessel to transport 12 Mtpa on an annual basis) (see Commitment No. 246)

(b) \$400,000/year to the Pond Inlet Harvesting Enabling Program to support additional harvesting efforts by hunters (fuel subsidy) (existing requirement IIBA Section 17.7 Harvesters Enabling Program)

(c) \$400,000/year to Igloolik, Sanirajak, Kinngait and Kimmirut to support additional harvesting efforts by hunters (fuel subsidy), when Steensby goes into production (existing requirement IIBA Section 17.7 Harvesters Enabling Program)

(d) The Wildlife Compensation Fund will be amended and further supported with resources to fund a full-time coordinator. (see ID 5, Section 5.1.2(a), ICA)

(e) \$750,000/year to support regional harvesting enabling programs (available to all 5 North Baffin communities) (see ID 5, Section 5.1.2(d), ICA) A one-time payment of \$1,300,000 to the Mittimatalik Hunters and Trappers Organization (MHTO) for changes in hunting experience that Inuit from Pond Inlet have described and to address difficulties in accessing the Wildlife Compensation Fund. (see ID 5, Section 5.1.2(c), ICA)

(f) Employment income earned by Inuit supports purchase of harvesting equipment; rotational work schedules allow for extended harvesting trips while off work; creation of more community-based employment roles allows for increased frequency of hunting and harvesting.

855. In addition to the direct funding proposed by Baffinland in Paragraph [94] to support harvesting, the Phase 2 Proposal stands to contribute approximately \$2.4 billion in royalties and other payments to NTI and QIA over the life of mine. Based on the 17-year life of mine presented in the FEIS Addendum for Phase 2, this represents an average of \$140 million/year that should flow to Inuit through various mechanisms including the QIA administered Community Benefits Fund, social programming capacity by both the QIA and NTI and other QIA initiatives. Baffinland understands communities have stated that they do not feel they have seen the benefits of royalties to date, however, these payments accumulate and increase over time, and in the interim the NTI and QIA policies to build trusts to support their ongoing operation have likely prevented the majority of funds from reaching the communities. This will change over time and the difference that the Mary River Project financial payments to QIA and NTI will make for Inuit in the Qikiqtani region will be transformational.

6.9.2.16 Supporting Traditional Land Use

856. Baffinland has listened to Inuit who have told us that the value in harvesting country food extends beyond the nutritional value it provides. Harvesting country food is a critical cultural practice and a significant contributor to community and individual well-being. To this end

857. Baffinland proposes for consideration that a portion of the funds received by the Tasiuqtiit Working Group (up to \$1.68 million/year) could support Pond Inlet specific harvesting programs aimed at supporting the preservation of traditional knowledge, including:

- (a) Support for traditional hunting camps for youth
- (b) Support for adoption of traditional hunting techniques and equipment (harpoon guns)
- (c) Other initiatives as determined by the Tasiuqtiit Working Group

858. Baffinland is confident that the Phase 2 Proposal, with the implementation of the comprehensive mitigations and monitoring plans that have been presented to NIRB, will avoid affecting the availability of, and access to, wildlife for harvesting. If wildlife stocks do decline (narwhal, seal), or do not return (caribou), affecting country food availability, Baffinland is committed to work with Inuit to understand the impact by either modifying the project or providing additional supports to overcome barriers preventing country food harvests. This is reflected in Baffinland's commitments to NIRB (see for example Commitment No. 133, 134, 135, 136, 138, 159, 167, 198, 218, 225 and as part of its agreement with QIA under the ICA (see generally ID 2, ICA).

859. Concern respecting availability of country foods will also be addressed with Baffinland's commitment under the ICA and to the NIRB to support an Inuit-led Pond Inlet Country Food Baseline Study and a Culture, Resources and Land Use Monitoring Program. This program will be overseen by an independently run Inuit Committee comprised of representatives from each of the Impacted Communities.

860. It is expected that CRLU monitoring will have three types of primary input from Inuit:
- Inputs from dedicated Mary River Project Nauttisuqtiit;
 - Inputs from QIA on-site Inuit monitors; and
 - Inputs from community members and existing Baffinland-funded community based monitoring programs.
861. As reflected above, under Section 1.1.5 of the ICA, the Inuit Stewardship Plan will be constructed around two separate but linked streams.
- The Culture, Resources and Land Use (CRLU) stream – issues and monitoring activities related to Inuit use of the land and harvesting, conducted through a Culture, Resources and Land Use Monitoring Program and overseen by the Inuit Committee; and
 - Social stream – with a focal point on Inuit food sources, food security, and food sharing.
862. Schedule ID4 to the ICA provides more detailed provisions for CRLU monitoring which will be Inuit-led and fully integrate IQ and community perspectives, and will inform adaptive management processes and decision making. Under these provisions of the ICA, Baffinland has committed to ongoing monitoring and integration of Inuit perspectives, experiences, and knowledge into Project management. Schedule ID3 of the ICA similarly provides details for the Social Monitoring Framework.
863. In addition to the Inuit-led monitoring, which will be designed to detect CRLU changes experienced by Inuit, under the ICA, Baffinland has also committed to enhancements to the Project's Adaptive Management Plan. As part of the adaptive management plan, tiered levels of effects thresholds and associated adaptive management triggers, as well as pre-defined responses to effects stemming from the Project, will be developed by Inuit. These Inuit defined OITRs will inform adaptive management actions for the Project in addition to Western science derived OITRs.
864. Baffinland has also committed to fully resourcing an Inuit-led country food baseline study for Pond Inlet and integrating the results into Project management, monitoring and compensation systems. Upon receiving the results of this study, Baffinland will undertake a reconsideration of mitigations and compensation programs proposed by Baffinland in relation to food security. This work will be Inuit-led and administered by the QIA, and supported by Baffinland.
865. Baffinland has also been clear throughout the Phase 2 assessment process that while its assessment does not predict any significant adverse effects on wildlife, in the event that effects occur, there are mechanisms in place to ensure compensation for effects to harvesting. This compensation has been enhanced under the ICA to include a one-time payment to the MHTO (\$1.3 million) and a Regional Harvesters Enabling Fund (\$750,000 available annually to five North Baffin communities).
866. Baffinland is confident that the measures and commitments it has adopted will avoid or mitigate significant effects on wildlife, food security and the availability of country foods. Further assurance is provided, over the life of the Project, by Inuit led monitoring and the Adaptive Management Plan.

6.9.3 Conclusions and Recommendations of Baffinland to the Board

867. Baffinland respects and acknowledges the central importance of hunting to Inuit culture. Baffinland has worked hard with Inuit participants to identify every opportunity to limit negative impacts on hunting and hunting experiences to the extent possible, and is committed to continuing to do so for the life of the Mary River Project. Baffinland has already implemented the mitigations committed to as part of the Mary River ERP and Production Increase Proposal approval processes designed specifically to address potential impacts on CRLU. Hunter support emergency cabins, in-community shipping monitors, frequent communications via Facebook and other methods about ship movements, and the availability of funding to support hunters are just a few examples.
868. Baffinland acknowledges that some Inuit participants in the NIRB process have told us they are experiencing effects on their harvesting that they view as significant. Hunters have continued to successfully hunt narwhal and caribou, and Baffinland acknowledges the changes hunters have noticed as part of that experience.³²⁰ The Commitment List includes detailed and specific mitigations that were developed for Phase 2 to specifically help mitigate against some of the negative effects that have been experienced to date, and to prevent negative effects as a result of Phase 2.
869. To recognize the importance of sea ice to the community and to ensure safety remains top priority Baffinland will develop of a protocol to be followed when sea-ice is being used in Pond Inlet in the spring even when all of the Baffinland conditions for start of the shipping season have been met.³²¹
870. As in previous assessments, Baffinland acknowledges that there will be a certain degree of unavoidable impact on hunter experiences, given that they will now be experienced in the same area as an industrial project. It is important to be transparent about that aspect. Hunters will see a railway and ore carriers where there once were none, and that will change the experience. As described above and in accordance with the IIBA, compensation for these impacts per Article 6 of the Nunavut Agreement (“Wildlife Compensation”) has been addressed through agreements with QIA. Baffinland also has committed to a number of direct hunter harvester support mitigations, in order to address concerns raised (for example) about potential for increased effort.
871. Species of critical importance to hunters, including caribou, narwhal and ringed seal, were given close and careful consideration in this assessment (see “Terrestrial Wildlife” and “Marine Mammals” for a summary). The determination of “no significance” for CRLU is based on large part on the “no significance” conclusions for these key topics. Baffinland also notes that the robust and comprehensive mitigation and monitoring committed to with respect to terrestrial and marine species will also in turn reduce potential for negative impacts on CRLU.

³²⁰ Reference GN data, transcript

³²¹ Commitment List, Commitment 240; see also January 2020 Baffinland letter to Hamlet of Pond Inlet

872. Working with QIA, a draft Adaptive Management Plan has already been made available for review and comment by the Impacted Communities via its inclusion in the ICA. As required by the ICA and as committed to NIRB, the final Adaptive Management Plan will include OITRs based on IQ as well as western science, and Inuit will have a direct say in the triggers for action under that plan, and what options are available to Baffinland in any given scenario. In addition to the Inuit Committees, Baffinland has committed to IQ Advisors in every Impacted Community which will also help improve communications between Baffinland and the communities. This program will involve Elders and community members in the development and revision of monitoring and mitigative plans and will help ensure that consultation is ongoing and consistent. New community buildings are planned for each Impacted Community with a dedicated Elder room and project information centre. All of these new initiatives will ensure that Baffinland's programs and measures have been informed by traditional activities, cultural resources, and land use as may be implicated or impacted by ongoing Project activities. In turn, these initiatives will also help ensure Nunavummiut are kept informed about Project activities and that our systems continue to involve in partnership with Inuit.
873. In order to resolve technical comments raised by QIA during the Phase 2 NIRB process, Baffinland has agreed to fund one or more additional CRLU Assessments to supplement the Phase 2 CRLU Assessment included in the FEIS Addendum. Baffinland carried out a CRLU Assessment as part of the FEIS Addendum, and provided supplemental information on this topic to NIRB during the assessment. Baffinland's CRLU Assessment and Baffinland's evidence to the Board on this topic is robust and prepared at a standard that meets the requirements of the NIRB and provides NIRB with the assessment information it needs in order to make a positive decision on the Phase 2 Proposal.
874. Nonetheless, Baffinland and QIA have agreed that it would be desirable to enhance baseline information on CRLU before Phase 2 proceeds. Baffinland also agrees that collecting additional baseline via a supplemental CRLU Assessment for future measurement against the CRLU monitoring program can only enhance our shared information base, and that the baseline information should be as up to date as possible to support the Inuit-led monitoring programs upon commencement. Baffinland appreciates that Inuit experience is not static and it always desirable to have more information from landusers. Baffinland and QIA's agreed approach to one or more supplemental CRLU assessments is set out in detail in ID 6 of the ICA. In order to address QIA's concerns to ensure that there is an adequate base from which to monitor impacts on CRLU related to the Project, Baffinland has agreed in the Commitment List and in the ICA that an additional CRLU Assessment will be carried out if the Phase 2 Proposal is approved.³²² In any event, NIRB can proceed with the confidence that the existing knowledge base will be further enhanced with respect to CRLU before Phase 2 operations proceed, and will be continuously refreshed throughout the Project via the new formalized structures that have been committed to for Phase 2.

³²² BIMC Response to QIA, DFO and PC Submissions, August 31, 2021, NIRB Registry No. 336643

875. As noted above, Baffinland is very confident in its determinations that taking into account mitigation measures including robust adaptive management, that Phase 2 will not have a significant effect on terrestrial wildlife, marine wildlife, or CRLU. Baffinland acknowledges that as an operator in the Canadian Arctic, it is essential that data on these important topics are continuously gathered, analyzed, reported and promptly acted on where necessary. Overall, Baffinland has taken a highly precautionary approach given that interactions with the Project have the potential to adversely impact upon the traditional harvesting or other cultural pursuits of Inuit.

6.10 Benefits, Royalty and Taxation

6.10.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment - Change in Benefits, Royalty, and Taxation, NIRB Registry No. 320585
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

6.10.2 Views of Baffinland

876. Section 8.2.9 (Benefits, Royalty and Taxation) of the Guidelines required consideration of royalty and taxation forecasts, and the IIBA. Phase 2 Proposal activities have the potential to result in a change in benefits, royalties and taxes
877. Since the FEIS and FEIS Addendum, Baffinland successfully negotiated an IIBA with the QIA that was signed in September 2013.
878. In addition to royalties payable under the IIBA, royalties will also be payable by Baffinland and received by NTI. Deposit No. 1 is located on grandfathered federal mining leases that have been designated as Inuit surface and subsurface lands. As such, a Federal Mining Royalty (FMR) will be payable to Indian and Northern Affairs Canada (Crown Indigenous Relations and Northern Affairs Canada) under the Nunavut Mining Regulations (Territorial Lands Act), but the monies will be passed to NTI. Resources collected by NTI from FMR are placed in the "Resource Revenue Trust". Revenues from the operating fund of the Trust are distributed to the NTI and all three Regional Inuit Associations (RIAs) according to NTI's Resource Revenue Policy (NTI 2011). The revenue from the operating fund is distributed as follows:

- 30% - NTI
 - 10% - Regional Inuit Organization (each)
 - 40% - Regional Inuit Organization (each, divided on per capita basis)
879. Mines in Nunavut are required to make annual royalty payments to the Crown based on the mine's total output during the fiscal year. The royalty payable is the lesser of:
- 13% of the value of the output of the mine, and
 - A graduated rate depending on the value of the mine's output during the fiscal year, at prescribed percentages from 5% to 14%.
880. The value of the output from a mine is determined by the sum of the market value of minerals produced less deductible expenses which include transportation costs, operating costs, a depreciation allowance for capital assets (up to 100% of historical costs incurred), a development allowance (up to 100% of historical mine development costs incurred), exploration costs and contributions made to a mining reclamation trust.
881. As the depreciation and development allowance are deductible at a rate of up to 100% of historical costs incurred, a mine can generally recover its historical capital costs (through depreciation and development allowance) prior to paying mining royalties.
882. To date, no payments have been made by Baffinland towards the Federal Mining Royalty as these pre. Payments towards the Federal Mining Royalty are expected to begin in 2030.
883. Baffinland has also conducted an updated Economic Impact Model (Appendix A) to demonstrate the economic benefits from the Phase 2 Proposal. The impact statement presented in the FEIS and FEIS Addendum remains valid in that the Project will have significant beneficial effect on benefits, royalty and taxation within the North Baffin communities, Nunavut and Canada.
884. The Approved Project provides significant positive effects with respect to the benefits generated in Nunavut. The Phase 2 Proposal will provide an incremental increase to these already significant effects. The assessment focused on the incremental increase in benefits as a result of the Phase 2 Proposal.
885. The following topics are discussed in the context of Benefits, Royalty, and Taxation:
886. Benefits that will be delivered to Inuit of the Qikiqtani Region through the IIBA;
887. The QIA currently receives the following revenues from the Project (Appendix A):
888. IIBA Mineral Royalty - A mineral royalty is payable annually at a rate of 1.19% of Net Sales Revenue (NSR), with an advanced royalty payment schedule of up to \$75 M. The estimated life-of-mine (LOM) mineral royalty payable to the QIA under the IIBA is \$396 M.

889. Commercial Lease Rents - Including a minimum rent payment of \$3 M plus inflation adjustment, as well as aggregate royalty payments (\$2.50/bank m3) and landfill tipping fees (\$50/m3 for quantities exceeding a minimum allowance of 5,000 m3). The estimated LOM payments under the Commercial Lease is \$73.1 M and the estimated LOM payments under the aggregate royalty is \$27.6 M.
890. IIBA Fund Contributions and Other Payments - Under the terms of the IIBA, Baffinland has provided one-time and annual contributions to a number of funds established under the IIBA (Table 10.1). Baffinland also covers the QIA's costs to administer the IIBA (Table 10.2).
891. Baffinland's fund contributions include one-time contributions of \$2.75 M made in 2016 and earlier, and annual contributions of \$660,000 (Table 10.2). Baffinland's voluntarily annual laptop program, involving delivery of a laptop computer to every high school graduate in the North Baffin LSA (a cost of approximately \$40,000 per year), is outside of the IIBA fund contributions. Baffinland has delivered 575 laptops to the five North Baffin communities since 2007.
892. Revenues that will accrue to Inuit organizations (NTI and the QIA).
893. An updated Economic Impact Model was completed in support of the Phase 2 Proposal (Appendix A). Based on existing agreements and current scenarios Inuit associations could collect an estimated \$1.9 B from the Phase 2 Proposal over the 2017-2040 period. The largest source of revenues is expected to be from FMR, with a total estimate at \$1.4 B. As noted, the FMR are payable to INAC, but are then transferred to NTI under the Nunavut Land Claim Agreement. It should be noted that FMR payments are difficult to estimate in future years as they depend to a large extent on the actual revenues and expenditures. The mineral royalty under the IIBA is expected total \$396 M over the LOM. Payments for use of Inuit-owned land could reach a total of \$73.1 M, while Aggregate Royalties could bring in \$27.6 M. Table 10.3 details the revenues for NTI and the QIA that are expected from the Phase 2 Proposal.
894. Revenues that will accrue to the Government of Nunavut and the Government of Canada.
895. Total fiscal revenues generated for the Government of Nunavut are estimated at \$679.9 M over the life of the Project. The largest component is the corporate income tax revenue with revenues estimated at \$321 M. Territorial fuel tax has estimated revenues of \$182.5 M, based on estimated fuel volume, payroll tax is estimated at \$51.3 M revenue, and other fiscal revenues are estimated to bring in a total of \$125 M.
896. Federal fiscal revenues are estimated at \$1.6 B including \$35.8 M aggregate royalties, \$80.2 M from fuel taxes, \$359.7 M from corporate income tax, and \$1.1 B from other fiscal revenues. Table 10.4 details the revenues for the Government of Nunavut and the Government of Canada that are expected from the Phase 2 Proposal.

See also:

- TSD 25- Socio Economic Assessment, NIRB Registry No. 320585
- Inuit Certainty Agreement

- Mary River Project Inuit Impact and Benefit Agreement.

6.10.3 Conclusions and Recommendations of Baffinland to the Board

897. Under s. 103(1)(h)(ii) of NuPPA, the Board is required to take into account measures, including but not limited to those proposed by Baffinland, which serve to optimize the benefits of the Project, with specific consideration given to expressed community and regional preferences in regard to benefits. Accordingly, what follows provides a high-level summary of measures that have been presented throughout the review to optimize the benefits of the Project. If the Phase 2 Project is approved, there will be a significant increase in benefits that will flow to Inuit, Nunavut and Canada from Baffinland as a result of the Phase 2 Project.
898. During the review of the Phase 2 Project Proposal, Baffinland and QIA entered into negotiations for amendments to the existing Mary River Project Inuit Impact Benefit Agreement (the “IIBA”). The proposed amendments are confirmed in the Inuit Certainty Agreement ‘ICA’ and include measures to address concerns respecting impacts attributed by Inuit to the current Project as well as concerns expressed during the Phase 2 review process and through Baffinland’s ongoing community engagement. Benefits that will flow from the Phase 2 Project are detailed in Technical Supporting Document #25 as well as in the Memo – Update on Inuit and Community Engagement – Since October 1, 2020. In brief, those benefits resulting from the Mary River Project, should Phase 2 be approved and proceed, are estimated to be as follows (all values expressed in Canadian Dollars):
- Fiscal revenues paid to the Government of Canada: ~\$1.6 billion
 - Fiscal revenues paid to the Government of Nunavut: ~\$679 million
 - Royalty payments to NTI: ~ \$1.4 billion
 - Royalty and other payments (Commercial Lease) to the QIA: ~ \$1 billion
899. Most notably, Baffinland and the QIA have negotiated a significant increase in the royalty payable under the IIBA from 1.19% to include an escalating royalty that applies if the Phase 2 project proceeds and a construction decision is made. The royalty will increase from the current 1.19% to 3.00% over a number of years as follows: a new royalty rate of 1.5% will be in place immediately following a Phase 2 approval and Baffinland deciding to build the Project, (this adjustment will also be applied retroactively from June 15, 2020), a further escalation to 1.75% after 36 months, 2.25% after 54 months, and 3.00%, after 72 months from the Phase 2 Project initiating. There are also circumstances where the royalty may be increased by an additional 0.75% for a certain time period, based on the price of iron ore compared to a specific index (this is known as “upside sharing”).³²³

³²³ Spoken to at the January 2021 hearing, and the royalty %’s have been submitted to the board through QIA user guides on the ICA

	At 6 mtpa	At 12 mtpa	Improvement
Iron Ore Price (62%, USD/t)	\$150	\$150	N/A
IIBA Royalty (up to 3%)	1.19%	3%	315%
Upside Sharing (.75%)		+ .75%	
Annual Royalty Payment (CAD)	\$12.6 million	\$88.2 million	700%

900. For clarity, the net sales revenue royalty to the QIA under the IIBA is in addition to and separate from the net profits royalty that is received by NTI in respect of the Deposit 1 mineral tenures.
901. What this means is that if Phase 2 proceeds, prior to the introduction of the ICA, as outlined in Technical Supporting Document 25, Baffinland estimated that QIA would receive approximately \$396 million in royalties. With the introduction of the enhanced royalty, it is expected that Qikiqtani Inuit could receive over \$900 million Mary River Project Phase 2 Proposal Increased Benefits to Inuit, Nunavut and Canada from Phase 2 Project over the life of mine. Further, the QIA has committed to the development of a Community Benefits Fund that will allow for enhanced community participation in the financial benefits of the Project for years to come.
902. In addition to royalties, pursuant to the ICA Baffinland will make the following one-time financial payments to the QIA (if Phase 2 is approved and Baffinland decides to build the Project):
- \$5 million should Phase 2 be approved and an additional \$1.25 million for the next following 8 consecutive quarters after Phase 2 is approved (i.e. an additional \$10 million);
 - \$15 million at the end of 54 months; and
 - \$15 million at the end of 72 months.
903. In addition to these direct financial benefits, Baffinland has also committed to increasing its focus on Inuit training, hiring, and career development. The Company will invest a minimum of \$1.5 million annually for Inuit specific training programs, enhance supports for Inuit career mobility, and ensure that Inuit employees are supported in the Impacted Communities with the provision of a per day, per child early childhood care subsidy. To ensure that the early childhood care subsidy delivers the greatest benefit to Inuit, Baffinland will also invest \$15 million dollars to construct or renovate childcare facilities in the Impacted Communities. These daycare facilities would be available to anyone – not just Baffinland employees. This commitment will also enhance Baffinland’s ability to target the greater participation of Inuit women in the Project workforce.

904. Baffinland and QIA will set objectives for specific areas of Benefit under the IIBA and if the company falls short of meeting these objectives, penalties will be paid and directed into the Community Benefits Fund. While the financial benefits of the Phase 2 Project are substantial for Inuit, they are equally important for all Nunavummiut, and Canadians. The multi-generational potential of the Mary River Project to be a wealth generator for decades will help fund health care, education, and social services from coast to coast to coast. Resource revenues, taxes, and consumptive payments all important to funding government programming that we all rely on. Providing Inuit with financial compensation and means of participating in economic opportunities is a key objective of the Nunavut Agreement. The benefits that will flow as a result of Phase 2 are precisely the kinds of benefits that were contemplated and sought by Inuit in entering into the Nunavut Agreement.
905. The Project (including Phase 2) is based on mining of Deposit No. 1 only. Should future NIRB approvals permit mining on other known deposits in the Mary River area, mining at Mary River has the potential to continue to generate positive economic benefits for Inuit in the Qikiqtani region as well as for the Government of Nunavut and Government of Canada for generations to come.

6.11 Governance and Leadership

6.11.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 25: Socio-economic Assessment – Governance and Leadership, NIRB Registry No. 320585
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
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6.11.2 Summary of Assessment Conclusions

906. Section 8.2.10.2 (Governance and Leadership) of the Guidelines required consideration of how the Project planning meets the needs of regional economy development, and how the Project will be managed in current governance and regulatory regime. Phase 2 Proposal activities have the potential to result in a change in governance and leadership.
907. In the FEIS, Governance and Leadership was addressed as a subject of note. The Phase 2 Proposal does not change the effects of the Project on Governance and Leadership.

908. Inuit community members and stakeholders have not raised concerns regarding governance and leadership directly to Baffinland. Potentially relevant to Governance and Leadership with respect to the Project, however, are public statements were made by representatives of North Baffin communities in early 2017 that indicate a desire to split from the QIA and form their own Designated Inuit Association under the *Nunavut Agreement*. Seven North Baffin communities are proposing to split from the QIA, and these include each of the five LSA communities. According to CBC News, North (2017), the push to form a separate organization stems from control over royalty payments from the Mary River Project: the communities want more control over the royalties. QIA's royalties from Baffinland are currently being saved in a legacy fund.
909. In a Mary 23, 2017 open letter to the NTI President and Board, former Pond Inlet Mayor Charlie Inuarak indicated frustration that NTI could not accommodate the matter at an April 2017 NTI Board meeting, and stated the following (Nunatsiaq News 2017).

We, the North Baffin Communities of Igloolik, Sanirajak [Hall Beach], Ikpiarjuk [Arctic Bay], Qausuittuq [Resolute], Ausuittuq [Grise Fiord], Mittimatalik [Pond Inlet] and Kangiqtugaapik are desiring to create our own regional Inuit organization. Under our Nunavut Land Claims Agreement we have a right to create such a body.

6.11.2.1 Access to Project Benefits

910. Some participants have expressed concerns to the NIRB that communities have not received the benefits from the current project that they expected – this perception may be based in part on a misunderstanding about the Early Revenue Phase as compared to the originally approved Mary River Project:

“We’ve talked a lot around this table about the benefits too. I thoroughly believe Baffinland has delivered benefits to all the communities of the North Baffin. They’re on the sheets at the back of the room, and there’s stuff we just couldn’t fit on those. There’s even more in the impact statement.

I understand -- and we’ve heard it a lot – that we haven’t seen -- people in Pond especially haven’t seen the benefits they thought were coming. And one of the issues we’ve had throughout this review and in relation to the project in general since we started operation is we came in here as a company a decade ago talking about a very large project, the Steensby project, and all the benefits that could bring. And those were all very real and genuine commitments, but that project never materialized. We never built that project. We didn’t get the funding to do it.

What we did instead, based on our circumstances, we still went forward with a version of the project, but it was a lot smaller. It wasn’t the project that could deliver the benefits that we set

*up for with those initial expectations. Phase 2 is how we can deliver on those expectations we set up ten years ago.*³²⁴

911. As noted above, under the ICA QIA has committed to establish a community benefits governance structure which at minimum will be funded by any payments made by Baffinland for failure to meet measurable objectives established under the IIBA (such as Inuit employment targets).
912. In addition, Baffinland has committed to certain new or enhanced community benefits as detailed in the community infrastructure and public services subsection, as well as increased incomes for Inuit organizations and governments in the benefits, royalty and taxation section. These benefits were developed directly in response to feedback received through the NIRB process. If the Phase 2 Project proceeds, Baffinland believes these benefits can provide the resources to make a real and lasting contribution to the capacity of governance and leadership in the North Baffin, and Nunavut
- A one-time payment of \$1.3 million to the MHTO for changes in hunting experience that Inuit from Pond Inlet have described and to address difficulties in accessing the Wildlife Compensation Fund.
 - If Phase 2 is approved, an annual payment for the Regional Harvesters' Enabling Program of \$750,000.
 - If Phase 2 is approved and if Baffinland develops the Steensby Project, the existing Harvesters' Enabling Program for Pond Inlet will be expanded to include the communities of Igloolik, Sanirajak, Kimmirut and Kinngait, which would each receive the provision of 300L of gas, to a total value of \$400,000 annually (in 2018 dollars), indexed to inflation.
 - A one-time contribution by Baffinland of \$10 million, towards the construction of a training and research facility in Pond Inlet with a commitment with respect to the timing of those payments. If Phase 2 is approved, a child daycare subsidy for Baffinland employees with children who are resident in Nunavut.
 - If Phase 2 is approved, \$3 million contribution by Baffinland for the construction of daycare facilities in each of Pond Inlet, Igloolik, Clyde River, Arctic Bay and Sanirajak (\$15 million total contribution). Kinngait and Kimmirut would be added to this list should Steensby move forward.
913. The enhanced royalty, together with the above described measures, were developed directly in response to feedback received through the NIRB process. If the Phase 2 Project proceeds, Baffinland believes it will result in improved financial circumstances for North Baffin communities.

³²⁴ Transcript, Vol 17, page 3298-3299

914. A number of hearing participants opposed the Project on the basis of perception of negative impacts to them specifically or cite the unequal distribution of benefits and burdens as the reason why burdens outweigh Project benefits. A common thread in these arguments is that the participants' interests deserve more weight due to their proximity to the Project. However, specific concerns from an individual Intervenor or group, though they may be considerable, are not determinative of the broader public Nunavut interest.

See also:

- ICA, Schedule A, ID 5, NIRB Registry No. 331621

6.11.3 Conclusions and Recommendations of Baffinland to the Board

915. As this was treated as a subject of note in the Assessment, there were no technical submissions requiring resolution.

7 OTHER MATTERS

7.1 Accidents and Malfunctions

7.1.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- Early Revenue Phase Main Document FEIS, s. 10.2.1 and 11.5
- TSD 19 – Fuel Spill Monitoring Report, NIRB Registry No. 320567
- TSD 28 – Management and Reporting Plans, NIRB Registry No. 320608-32017, 320627-320633
- Information Request Response, WWF 05 Attachment 1: Fuel Spill Modelling: Northern Shipping Route Open Water Season, NIRB Registry No. 321614
- Final Written Submission Technical memorandum: The Mary River Project – Phase 2 Proposal: Review of WWF’s Marine Spills Probability Analysis, NIRB Registry No. 327139-327149
- Baffinland Written Comments filed September 10, 2021, section III – Baffinland’s Reply to World Wildlife Fund’s February 2020 Updated Marine Spill Probability Analysis, NIRB Registry No. 336778
- BIMC Accidents and Malfunctions Presentation, NIRB Registry 324098
- BIMC Accidents and Malfunctions Presentation, NIRB Registry 331373
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
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7.1.2 Summary of Assessment Conclusions

916. Baffinland maintains operational controls to identify the potential for and responses to accidents, incidents and emergency situations, and to prevent and mitigate the likely injury, illness and adverse environmental impacts that may be associated with such accidents or incidents.
917. Baffinland carefully considered the potential risks associated with the Phase 2 Proposal in light of the addition of a proposed North Railway Route, together with the increased activity levels due to the proposed increase in production for Phase 2, and in particular, the increase in shipping.

918. Baffinland's approach to accidents and malfunctions has been to ensure, first and foremost, that the integration of safety, for both personnel as well as the environment, is of primary importance and part and parcel of Baffinland's corporate culture.³²⁵ Baffinland's approach to accidents and malfunctions is to ensure compliance with relevant regulatory requirements, focusing on prevention through planning, including ensuring the implementation of effective management plans.
919. It is important to recognize that the assessment of accidents and malfunctions differs from the assessment of valued ecological and socio-economic components in that it is not focused on significance, but instead, on the probability or risk of an accident or malfunction occurring, together with an evaluation of the potential magnitude of the harm which may result from the potential accident or malfunction.
920. Baffinland has in place a robust Emergency Response Plan that addresses the potential environmental, health and safety emergencies that could arise during the construction of the Phase 2 Proposal, as well as its operations. Baffinland has carefully identified how the proposed expansion may present new risks, and has proposed amendments to improve these plans to address those new risks, including the updates to the Emergency Response plan, the Spill Contingency Response Plan, the Oil Pollution Emergency Plan, the Railway Emergency Response Plan, the Spill at Sea Response Plan and the Metal Mining Effluent Regulations Emergency Response Plan.³²⁶

7.1.2.1 *Spills Along Shipping Route*

921. Baffinland acknowledges the risk and potential for fuel spills to occur; however, it is important to consider the risk of a major spill along the Northern Shipping Route as opposed to small spills that may occur due to fuel resupply operations.
922. Baffinland's Technical Supporting Document 19 – Fuel Spill Modelling Report provides the results of a fuel spill modelling assessment for shipping activities along the Northern Shipping Route from Baffin Bay through Pond Inlet, and Milne Inlet. Two spill scenarios were considered each of which considered a release of 1 ML of intermediate fuel oil from an ore carrier. One scenario was set in mid-July during sea ice break-up, and the second scenario was in mid-October during sea ice freeze-up.
923. The purpose of these modelling scenarios was to highlight both the importance of prevention, as well as to allow for planning for emergency response purposes. The modelling report was subject to a thorough review by interested Parties, including TC, ECCC and the GN, all of which have jurisdictional interests and oversights with respect to spills. The technical review found that the modelling presented was accurate for fuel oil, which vessels consume to operate. In response to two follow up requests by the interested Parties, Baffinland agreed and reflected in the NIRB Commitment List the following two commitments, should Phase 2 be approved:

³²⁵ Public Hearing Transcript, Vol. 1, November 2, 2019, p. 52.

³²⁶ TSD 28, s. 1.5, p. 16-21.

- Baffinland commits to conduct additional Arctic diesel fuel spill modelling to account for instances where fuel resupply may occur during the shoulder seasons and update the SSRP as necessary (Appendix G). (Commitment 70)
- Baffinland will update the Spill at Sea Response Plan to reflect a requirement for coordination with the Government of Nunavut's Department of Environment and Emergency Management Office in the mobilization of emergency wildlife teams for the purpose of preventing wildlife contamination (Commitment 210)
- Baffinland will update the Spill at Sea Response Plan based on various recommended edits by Transport Canada (Commitments 5-9)

924. These commitments will all inform an updated version of the Spill at Sea Responses Plan, which will be submitted to the NIRB within 6 months of Ministerial Approval, should that occur.

7.1.2.2 Response to WWF's Oil Spill Probability Reports

925. While WWF submitted a report prepared by Environmental Research Consulting entitled "Baffinland Oil Spill Probability: Updated Analysis for Phase 2 Expansion Proposal Vessel Traffic" prepared by Environmental Research Consulting (the "WWF Spill Probability Report"), Baffinland submitted a review of that report, and highlighted the lack of usefulness of its conclusions given the numerous information gaps and methodological weaknesses.

926. In particular, as highlighted in Baffinland's response to the Final Written Submissions prepared on October 15, 2019, the WWF Spill Probability Report:³²⁷

- Failed to use the correct number of transits for certain types of vessels (namely tugs);
- Relied on historic data to establish probabilities for marine traffic and accidents when more recent data was available, which skewed the probabilities of a spill, as safety trends have greatly improved over time;
- Failed to consider any of Baffinland's existing or proposed mitigation measures and safety protocols, including reduced vessel speeds;
- And used high spill probabilities and return periods, despite improving statistics worldwide.

³²⁷ Baffinland Response to Final Written Submissions, NIRB Doc 327141.

927. In February 2020, WWF submitted an Updated Marine Spill Probability Analysis (the “Updated WWF Spill Probability Report”), and made statements during the public hearings based on this report.³²⁸ While several adjustments were made, there were still several key issues that contributed to an overstatement with respect to the risk of a catastrophic spill event occurring. Baffinland prepared a response to the Updated WWF Spill Probability Report and responded to the comments made by WWF during the Public Hearing session in its Written Comments filed September 10, 2021.³²⁹ As outlined in its Written Statements, Baffinland stated that the Updated WWF Spill Report continued to have certain errors or weaknesses in the supporting information relied upon:
- There was an overstatement in the percentage increase in shipping proposed under Phase 2 by a miscalculation and the use of incorrect shipping levels;
 - Ore carriers, representing a significant proportion of project shipping, were assigned the highest risk activity (a transfer error), but do not transfer fuel;
 - Marine accident and spill statistics used may not reflect recent trends in safety;
 - The likelihood of collisions or grounding resulting in a spill in the study area is low; however, the probabilities used were not adjusted for this low likelihood;
 - The conclusions were not consistent with the findings of Transport Canada’s marine spill risk assessment; and
 - Baffinland’s existing mitigation measures and safety protocols were not considered.³³⁰
928. While WWF had initially indicated there was a 33% chance of a catastrophic spill occurring during the life of the Project, if the correct information was used, that probability is closer to a 1 in 157 chance.³³¹ Upon revisiting their information, WWF in fact admitted during the hearing that “It’s likely that fuel spills won’t be catastrophic in themselves, each one, but there still will be spills.”³³²
929. Baffinland has acknowledged during the course of the public hearing that there is a possibility that small spills of fuel between 10 to 100 litres may occur, but that Baffinland is well equipped to address those types of spills.³³³ In short, it was acknowledged by WWF that the magnitude of the harm which may result from any given spill would, in fact be “relatively small as opposed to anything catastrophic in nature.”³³⁴

³²⁸ NIRB Registry No. 328460.

³²⁹ Baffinland Written Comments, NIRB Registry No. 336778.

³³⁰ Baffinland Written Comments, NIRB Registry No. 336778, p. 25-27.

³³¹ Public Transcript, Nov. 5, 2021, Vol. 20, p. 3732.

³³² Public Transcript, Nov. 5, 2021, Vol. 20, 3719.

³³³ Public Transcript, Nov. 5, 2021, Vol. 20, p. 3732.

³³⁴ WWF Submission, October 18, 2021, NIRB Registry No. 337149, p. 1.

930. In response to Baffinland's Written Submissions in reply to the Updated WWF Spill Probability Report, the author of that report, Environmental Research Consulting, provided a response to Baffinland's Written Comments that highlighted certain limitations, which had affected its ability to provide an accurate assessment.³³⁵
- Data on vessel traffic as presented in its February 3, 2020 report were those provided to it at the time of writing; however, were not accurate. This is despite the fact that those vessel numbers were provided to parties by Baffinland at the November 2019 hearing and in Baffinland's Updated Phase 2 Proposal Package on January 7, 2020.³³⁶
 - Information on Baffinland's mitigation and spill prevention measures were not provided to Environmental Research Consulting.
 - It appears that Environmental Research Consulting was provided with a limited time period in which to conduct its analysis, as indicated by the following statement in its response: *"It was not possible to conduct a comprehensive modeling of vessel traffic or to apply the potential effects of the mitigation and spill prevention measures in the course of one half-day."*
931. Instead, of simply accepting that there were flaws in the underlying information WWF provided to Environmental Research Consulting, WWF chose to recalculate its spill probability by looking at any volume of spill, rather than only catastrophic spills, presumably in order to calculate a high probability of such a spill regardless of the magnitude. This type of "numbers gaming" is inappropriate, and lacks the kind of transparency in assessment that is required of participants in the NIRB's process.
932. Baffinland has outlined the manner in which this evidence has been addressed by WWF because it speaks to its credibility as an Intervenor. In Baffinland's submission, WWF's evidence with respect to spill probability should not be relied upon given the weaknesses outlined above. In addition, Baffinland urges the NIRB to use caution when considering other evidence tendered by WWF, considering the manner in which it recalculated the spill probability, without providing full context for that figure.
933. In evaluating the risk of spills in relation to the Phase 2 Proposal, Baffinland highlights the fact that there is strong regulatory regime and oversight for marine shipping in the Arctic, as highlighted by the following statement made by Transport Canada during the Public Hearing:
- It should also be noted that considerable improvements in preparedness and preventions measures have been implemented by the Government of Canada as well as international partners through work at International Maritime Organization and Arctic councils in the past 35 years.*

³³⁵ WWF Submission, October 18, 2021, NIRB Registry No. 337149.

³³⁶ NIRB Registry No. 327957, see "Number and Type of Ships" at p. 19.

For example, the vessels are required to have properly trained, qualified, and certified officers on board for the ships operating in the Arctic waters. In particular, the Arctic Shipping Safety and Pollution Prevention regulations contain a range of safety and pollution-prevention requirements that addresses the unique risk confronted by ships operating in Canada's Arctic. In addition, all ships are subject to various entry and exit requirements to ensure that ships can safely navigate in the ice conditions. Also to note that to reduce for the risk of spills in the Arctic, a heavy fuel oil ban will be in place by 2024. I would also like to provide that we inspect the vessels and the Baffinland oil handling facilities to ensure that they are complying with our regulatory regime.

These factors have contributed to a safer environment in the Arctic. We continue our oversight on the vessels and at the Milne Port with regards to oil-handling facilities.

Also to note that Transport Canada also carries regular surveillance through our aircrafts to look into the pollution in the Arctic. Another powerful tool recites that we have a legally binding agreement on cooperation on marine oil pollution, preparedness, and response in the Arctic signed by all the members of the Arctic Council.

The objective of this agreement is to strengthen cooperation, coordination, and mutual assistance among the parties on oil spill preparedness and response in the Arctic in order to protect the marine environment from pollution by spill.³³⁷

7.1.3 Conclusions and Recommendations of Baffinland to the Board

934. BIM has established operating procedures which exceed applicable legal requirements within the RSA to further mitigate and reduce risks associated with events that might give rise to accidental releases. Such measures include:

- Traffic management (no passing zones, speed restrictions, traffic simulations, etc)
- Vessel selection criteria through Rightship that considers the navigational safety of the operation
- Support for additional marine mapping along the Northern Shipping Route through the Canadian Hydrographic Society.
- Establishment of contract with spill response company for Tier 3 spills
- Other risk mitigating factors in place, consistent with TC's 2014 Review of Canada's Ship-Source Spill Preparedness and Response by the Tanker Safety Expert Panel recommendations include:
 - Improved AIS coverage of all vessels
 - Requiring vessels to obtain clearance from NORDREG

³³⁷ Public Hearing Transcript, November, 5, 2021, Vol. 20, p. 3721-3722.

- Hiring experienced ice navigators
- Requirement for all vessels to have onboard SOPEPs
- Conducting fuel spill modelling and risk assessments to inform emergency preparedness response plans (i.e. SSRP)

935. Baffinland has made a number of commitments to update its Spill at Sea Response Plan, including taking into account changes proposed by Transport Canada with respect to its Spill at Sea Response Plan, and appropriate changes to its response equipment (Commitment List ID #5-8). Additional updates will be made based on commitments to ECCC and the GN. These Intervenor have no outstanding technical issues.

7.2 Alternatives Analysis

7.2.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- Technical Supporting Document 1 – Alternatives Analysis, NIRB Registry No. 320552
- Baffinland’s Phase 2 Proposal Updated Information Package, filed January 7, 2020 NIRB Registry No. 327957
- Mary River Phase 2 Proposal – Rail Alignment Summary Report NIRB Registry Nos. 327148 and 3278149
- Alternatives Analysis Presentation, NIRB Registry No. 331370
- TSD 03 Phase 2 Workshop Report, NIRB Registry No. 320557
- TSD 04 Phase 2 Public Consultation Report, NIRB Registry No. 320558
- TSD 05 Mary River Inuit Knowledge Study Mapbook, NIRB Registry No. 320559
- Community Risk Assessment Workshop, NIRB Registry No. 327139-327149
- Additional Assessment Information, EA Workshop Package (Appendix D to Update Inuit Community engagement to April 22, 2020), NIRB Registry No. 329530
- NIRB Project Certificate No. 005, NIRB Registry No. 326517
- Disposition Table (Final Written Statement, Appendix A)
- Commitment List (Final Written Statement, Appendix B and C)

7.2.2 Summary of Assessment Conclusions.

936. Baffinland has contemplated different paths forward for growing the Mary River Project. As part of this consideration, Baffinland undertook a comprehensive alternatives assessment, examining alternatives for project development and contemplating options for project design that would be both technically and economically feasible, while still minimizing effects of the project on the environment and local communities.

937. Four performance criteria were applied in the assessment, including:
- technical feasibility, which was whether or not a given alternative will achieve the required outcome;
 - cost effectiveness considered the life cycle costs of an alternative. In some instances, the question is whether or not the alternative can be financially supported by the project.
 - Environmental acceptability is the third criteria, and this considered whether an alternative will have an unnecessarily large environmental footprint or cause unacceptable effects.
 - Community acceptability was the fourth criteria, and it was based on the feedback Baffinland received during community meetings, workshops, and Inuit knowledge studies and included a qualitative determining of the balance of perspectives that have been shared.
938. Each of the alternatives were qualitatively rated relative to these performance criteria Any alternatives that were not technically feasible or economically viable were not carried forward in the assessment for further examination.
939. Notwithstanding an acknowledgement that community perspectives are inherently diverse in nature, Baffinland's understanding of community acceptability was largely derived from the extensive public consultation and IQ study efforts Baffinland has undertaken. In addition to prior work, following completion of the alternatives analysis and the development of the final project design for Phase 2, Baffinland consulted extensively on the proposal to better understand local communities' concerns related to key aspects of the project. Through these consultation and engagement efforts, Baffinland has refined project management and mitigations with the aim of increasing community acceptability and to minimize potentially negative adverse effects of these project components on local land users.
940. When the price of iron ore dropped in 2014, Baffinland realized that alternatives to the originally proposed Steensby Project needed to be considered to ensure the viability of the project. Ultimately, this need informed the development of the Phase 2 Proposal.
941. The following alternatives to the project were considered: ceasing production altogether, maintaining the current production rate of 4.2 million tons per annum, advancing the improved Steensby Project to the south, or undertaking the Phase 2 Proposal. Implementing the Phase 2 Proposal is Baffinland's preferred alternative, and this option is superior for several reasons.
- Based on operational experience, Baffinland knows that the development of a railway is required to sustain higher production levels and to ensure economic viability of the project while offering a number of environmental benefits over road haulage.
 - Building on existing infrastructure through the Northern Transportation Corridor offers an opportunity to increase viability of the project with a lower initial capital expenditure than would be required for immediate development of the Steensby phase of the project.

- Minimizing expansion of the project footprint, both spatially in terms of new land that will need to be disturbed and temporally with limited icebreaking required to support the moderate extension of the shipping season.
- Lastly, and most importantly, the Phase 2 expansion allows Baffinland to continue unlocking the potential of the Mary River Project and delivering meaningful benefits to local communities and Nunavut for generations to come.

942. Several alternative means of carrying out the Phase 2 proposal were considered and include shipping route alternatives, shipping season periods, options for transporting ore from the mine to the port between road and rail, and railway routing.

7.2.2.1 Shipping Routes

943. In regard to the shipping route, Baffinland considered maintaining the current shipping route through Milne Inlet, Eclipse Sound, and Baffin Bay. It also considered the option of shipping through Navy Board Inlet. The Navy Board Inlet route was considered following feedback received during the 2015 and 2016 IQ collection workshops when some participants expressed that this option could potentially reduce interference with local hunters from Pond Inlet. However, since that time, community members and other Intervenorers have expressed concerns with using this shipping route, and therefore Baffinland did not carry it forward in the assessment and has only put forward the use of Eclipse Sound as a proposed shipping corridor.³³⁸

7.2.2.2 Shipping Season

944. Regarding the shipping season, Baffinland considered a number of shipping season options. The first was open water. This alternative appears to have more community support but seriously limits the economic viability of the project. The required tonnage cannot be delivered in this shorter season. This has implications on the cost effectiveness of the project, as well as the commercial impacts regarding the reliability of supply of ore to customers.

945. Eight-and-a-half month shipping was also looked at. This was the shipping season originally considered by Baffinland when the Phase 2 proposal was first proposed in late 2014. After hearing feedback from the community of Pond Inlet, Baffinland decided not to pursue this alternative. It was also not carried forward as there are greater technical challenges related to icebreaking and ice management, as well as trans-shipping activities and facilities and the required seasonal fuel storage at sea.

³³⁸ See letter from Baffinland to NIRB, September 20, 2019

946. Ultimately, Baffinland's preferred option was an extended season with icebreaking escort vessels. This would have involved shipping between the nominal dates of July 1st to November 15th, but always as ice conditions permit. However, Baffinland has made a further commitment to respond to concerns raised by the MHTO and the Hamlet of Pond Inlet, and Baffinland has now committed to reduce the proposed nominal shipping season dates such that Baffinland will not start shipping before July 15, and Baffinland will plan to close the shipping season at October 31 (only favourable ice conditions and consultation with Pond Inlet may extend this to no later than November 15).³³⁹
947. This option would be limited by the presence of land-fast ice and is not directly linked to these dates. Icebreaking vessels in this scenario will be required at the beginning and end of the season for escort. This option is technically feasible since icebreaking will only be required for a short amount of time, and fewer high ice-class vessels to transport ore will be needed compared to year-round shipping or eight-and-a-half month shipping.
948. For Baffinland, this option presents the best compromise between the needs of the project with the concerns raised by the communities. Baffinland has also committed to several mitigation and management measures that will limit the effects of this shipping window on local hunting activities and marine mammals, which are described above in the Marine Environment and Marine Mammals sections of this Final Written Statement.

7.2.2.3 Transport of Ore to Milne Port

949. Baffinland considered options of transport of 12 mtpa by truck using the existing Tote Road and also by rail. The option by rail has been identified as our preferred alternative. The construction and operation of a railway will provide Baffinland with a lower operating cost, as well as increased operational certainty, as road operations can be interrupted as a result of weather or maintenance and allows for increased public and wildlife safety by greatly reducing the number of transits along the Northern Transportation Corridor each day.
950. Another key factor that was considered in the analysis was community feedback and the results of Baffinland's environmental monitoring which show that dust generated from transporting ore by road was higher than initially predicted in the FEIS Addendum for the Early Revenue Phase. The development of the railway presents both a technically and economically feasible option that would eliminate an environmental concern that has continued to be raised by community members since the Early Revenue Phase operations began.

³³⁹BIMC Ltr to NIRB Re Conditional Support by Hamlet NIRB Registry No. 332819, BIM Phase 2 Disposition Table and Commitment List, Appendix A-C Commitment 239

7.2.2.4 Railway Route

951. During community meetings in early 2019, community members in Pond Inlet expressed concern regarding the proposed rail deviation. The deviation refers to the area where the railway departs from running parallel to the Tote Road at the Kilometre 67 hill. It is approximately 20 kilometres in length and, at the greatest extent, approximately 7 kilometres away from the Tote Road near Kanajjuk. The deviation is a technical requirement to build the railway. Unlike ore haul trucks, trains cannot safely navigate sharp corners or travel up and down steep hills.
952. As background, while Baffinland had originally proposed a particular deviation route in the FEIS Addendum known as “Route 1”, based on community feedback, Baffinland came to understand that communities had two preferred alternative alignments, “Route 2” and “Route 3.” Baffinland then investigated the feasibility of design for each of Route 2 and Route 3. The conclusion of that investigation is that, in addition to Route 1, Route 3 is feasible. Route 2, however, is not feasible as there are too many operational, maintenance and safety risks. In addition, this route presents a larger environmental footprint because of the requirement to blast and fill to make this route technically feasible through the local topography. For those reasons, it was not considered further by Baffinland. Baffinland cannot commit to a railway alignment that presents a safety risk.
953. For clarity: Baffinland has selected Route 3 as its preferred rail route. Based on community feedback, it is Baffinland's understanding that Route 3 would minimize interference with the travel route between Igloolik and Pond Inlet. Unlike Route 2, Route 3 does not present concerns for the safe operation and maintenance of the railway. At the November 2019 public hearing, and at the Technical Meeting held in September 2020, as well as in the ICA, Baffinland committed to moving forward with Route 3, including any unforeseen costs committing to this route may present. This was reconfirmed at the subsequent public hearings. A detailed description has been provided in the Rail Alignment Summary Report, October 15, 2019. Baffinland is of the view that Route 3 is a technically feasible alignment. Any further geotechnical studies will be to inform the design of the railway along the route. The results of these studies will be shared with interested Parties via submission to the NIRB.
954. As described in the Terrestrial Environment section of this Final Written Statement, Baffinland has committed to extensive mitigation measures to ensure the safe passage of land users and wildlife across the railway. Baffinland has also committed to the development of a safety protocol and communication plan and the construction of hunters cabins and snowmobile crossings along the selected alignment based on community feedback.

7.2.3 Conclusions and Recommendations of Baffinland to the Board

The Phase 2 proposal is necessary to ensure the sustained economic viability of the Project. Baffinland has given thoughtful consideration to the alternatives to the Project and to carrying out the Project. Baffinland has listened and responded to concerns raised by the communities through the process, adjusted the Project and developed mitigations specifically targeted at addressing the concerns raised, and we remain committed to

continuing to work with regulators and communities to ensure the environmental effects of the Phase 2 proposal are effectively managed.

7.3 Cumulative Effects

7.3.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 27 Cumulative and Transboundary Effects, NIRB Registry No. 320607
- Mary River Project – Phase - Supplement to Technical Supporting Document 27 - Cumulative Effects Assessment, NIRB Registry No. 325014
- Revised Addendum to Technical Supporting Document 27 - Cumulative Effects Assessment, NIRB Registry No. 326516
- Cumulative Effects Presentation, NIRB Registry No. 324100

7.3.2 Summary of Assessment Conclusions

955. The Cumulative and Transboundary Effects Assessment Technical Supporting Document 27 provides an assessment of cumulative and transboundary effects related to the Phase 2 Proposal.
956. As required under the Amended EIS Guidelines, Baffinland undertook a cumulative effects assessment, taking into account the following factors:
- A larger spatial boundary (RSA rather than LSA): to enable Baffinland to assess the project impacts in relation to other activities in the geographical region, and implies that spatial assessment boundaries may cross jurisdictional boundaries for a better understanding of additive and interactive pathways of different types of cumulative effects. Baffinland used the Nunavut Settlement Area as the appropriate boundary for the cumulative effects assessment;
 - A longer temporal scale: to enable Baffinland to consider all from the present time into the past and the reasonably foreseeable future for a more accurate analysis of variability and significant long-term effects. Baffinland used a temporal boundary for the cumulative effects assessment of 41 years, spanning from 2004 to 2044, which would be 5 years post-closure monitoring phase for Deposit No. 1;
 - Alternatives analysis: the explicit creation of alternative development scenarios and analysis of potential cumulative effects associated with each option. Baffinland considered three alternative development scenarios: (1) a future without the Phase 2 Proposal, (2) a future with the Phase 2 Proposal, and (3) potential future development at the Mary River Project;
 - Consideration of effects on VECs and VSECs: assessment of how the interaction of impacts from the various Project components and activities, from climate change and from other past, present and reasonably foreseeable projects, might impact in a cumulative fashion on selected VECs/VSEC; and

- Evaluation of significance: identifying and predicting the likelihood and significance of potential cumulative effects, including direct, indirect and residual impacts including consideration and determination of the significance of the cumulative effects.

957. Baffinland conducted the cumulative effects assessment taking into account and building upon the extensive baseline studies and assessments carried out since 2006 for the larger Approved Project. The cumulative effects assessment for the Phase 2 Proposal is closely linked to the FEIS and previous addendums. The cumulative effects assessment presented in the FEIS was revisited by updating the list of active and reasonably foreseeable projects and considering the temporal boundaries of the Phase 2 Proposal. The previous assessment of cumulative effects of components of the Project that are unaffected by the Phase 2 Proposal remain unchanged from the previous cumulative effects assessment presented in the FEIS.
958. The majority of biophysical cumulative effects identified are associated with the potential future development scenario and are not due to past, present or reasonably foreseeable projects or activities. Cumulative socio-economic effects are largely positive. Those socio-economic effects predicted to be adverse are generally associated with the potential future development scenario and are not due to past, present or reasonably foreseeable projects or activities.
959. Through the NIRB process Intervenor requested additional details and analyses of potential cumulative effects, which Baffinland agreed to provide. As an example, in August 2019 Baffinland filed the CEA Addendum, which specifically addressed comments relating to caribou, marine mammals, and visitor wilderness experience at Sirmilik National Park. In each case the additional analyses continued to support the findings of no significant effects.

7.3.2.1 Caribou Habitat

960. The re-analysis of the Approved Project's (North and South Railway) potential impacts on habitat using the revised disturbance coefficients, as requested by the GN, resulted in not significant impacts to calving (-3.6%), growing (-1.6%) and winter (-1.8%) habitat in the North Baffin Caribou Range for the reasonable scenario. Incorporating existing disturbances such as municipalities, roads and helicopter overflights in the North Baffin Caribou Range slightly increases the potential impacts to calving (-4.1%), growing (-1.8%) and winter (-1.9%) habitat for the reasonable scenario.

7.3.2.2 Marine Mammal Disturbance

961. The effects of concurrent shipping activity in the RSA have the potential to interact with the effects of Phase 2 Proposal shipping along the Northern Shipping Route, resulting in cumulative effects associated with acoustic disturbances and vessels strikes. It is anticipated that, should multiple vessels transit through a given area, the cumulative noise field will increase spatially, however, given the physics of underwater sound, the cumulative sound level is not predicted to increase when multiple vessels are present in the same area. Therefore, in consideration of the relatively limited temporal and spatial scales of potential cumulative effects, it is not expected that marine mammals including species at risk would be affected at the population level.

7.3.2.3 Visitor Wilderness Experience (Sirmilik National Park)

962. Relative to the Project assessment, the cruise ship passengers and sea kayakers will experience less than 10% increase in shipping activity cumulatively, may hear about or experience some example of climate change, and will likely be aware of the National Marine Conservation Area and will be relatively accepting of regional research and monitoring programs associated with the protected area. The effects are confined to the short period summer period and the wilderness experience during late winter / spring would remain unchanged. For this reason, the cumulative effects to the wilderness experience are predicted to be not significant.

7.3.2.4 Spatial Scope

963. Baffinland has provided comprehensive responses to questions respecting the spatial scope of its cumulative effects assessment on multiple occasions (see for example response to ON 4, Response to Final Written Submission (October 2019). In that response, Baffinland explains how TSD 27 and the follow up memorandum dated August 23, 2019 “Mary River Project, Revised Addendum to Technical Supporting Document 27” explicitly take into consideration the temporal boundaries of the Phase 2 Proposal.
964. As Baffinland has confirmed repeatedly to Oceans North for many years, the Phase 2 Addendum CEA considers the following topics and concludes that the effect of the Project, taking into account both the North and South Railway as well as other past, present and reasonably foreseeable projects in the area, is likely to be not significant:
- Meteorology and climate including climate change;
 - Air quality
 - Vegetation
 - Migratory birds and habitat
 - Terrestrial wildlife and habitat
 - Water quality and quantity
 - Surface water quality

- Freshwater fish, fish habitat and biota
- Marine ice water and sediment quality
- Marine habitat and biota
- Marine mammals and
- Valued socioeconomic components.

965. This conclusion was further strengthened by the subsequent filings, which also build on a similar memo by Knight Piesold (KP) dated May 16, 2019.

966. A note with respect to spatial scope. Baffinland emphasizes that the standard methodology does not support the inclusion of shipping activities in the marine cumulative effects assessment that occur entirely outside the marine RSA for the Phase 2 Proposal. There is no overlap in space between shipping out of Milne Inlet and Steensby Inlet, and only one marine mammal (bowhead whale), that is known to transit between the two distinct areas.

7.3.3 Conclusions and Recommendations of Baffinland to the Board

Baffinland undertook a cumulative impact assessment for Phase 2 Shipping, which included taking into account approved, existing and reasonably foreseeable activities. This assessment was comprehensive and employed appropriate and standard methodology for cumulative effects which took into account human activities, natural stressors and climate change considerations.

In addition, the assessment was supplemented by way of a memorandum dated August 23, 2019 “Mary River Project, Revised Addendum to Technical Supporting Document 27.” This supplement describes how the Project’s main alternative development scenarios (a future without the Phase 2 Proposal, a future with the Phase 2 Proposal, and Potential future development at the Mary River Project) have been evaluated in accordance with Subsections 6.1 and 7.8 of the NIRB guidelines.

A comprehensive cumulative effects assessment has already been undertaken, using appropriate and accepted methodology, and no further cumulative effects assessment is required.

Baffinland’s cumulative effects assessment and addendum provide a thorough and complete understanding of the potential cumulative effects associated with the Phase 2 Proposal. Baffinland has committed to industry leading mitigation and monitoring plans that will address both project level effects and cumulative effects. Baffinland has also committed to continue to work with Parties on regional initiatives intended to enhance the state of scientific and traditional knowledge in the area, or improve planning and management at the federal and/or international level.

7.4 Transboundary Effects

7.4.1 Key Reference Documents

- EIS Main Body, October 2018, NIRB Registry No. 320619
- TSD 27 Cumulative and Transboundary Effects, NIRB Registry No. 320607

- ESPOO Report, NIRB Registry No. 334015
- ESPOO Response to Information Requests, NIRB Registry No. 334014
- Submission on Espoo Materials Submitted by Government of Canada on October 29, 2021, NIRB Registry No. 337331

7.4.2 Summary of Assessment Conclusions

967. Baffinland carried out a thorough assessment on potential transboundary effects for the Phase 2 Proposal. That assessment is contained in Technical Supporting Document 27 – Cumulative and Transboundary Effects.
968. Transboundary effects of the Phase 2 Proposal are predicted to be not significant. No meaningful adverse socio-economic effects are expected to occur outside of Nunavut, though positive transboundary effects are anticipated. The Project will employ workers based in southern Canada and will present business opportunities to businesses in southern Canada. The Project will also pay federal royalties (aggregate) and tax revenues will accrue to the federal and provincial governments through personal income taxes (including Nunavut's payroll tax), corporate taxes, fuel taxes and sales taxes.
969. In addition, Baffinland's transboundary effects assessment was supplemented through the provision of an Espoo Report, filed with the NIRB on March 3, 2021 (NIRB Registry No. 334015) and follow-up responses.
970. Baffinland's transboundary assessment was robust, in accordance with the Amended EIS Guidelines, and fulfilled all requirements of the Convention on Environmental Impact Assessment in a Transboundary Context.

7.4.2.1 Espoo Convention

971. Baffinland encourages the Board to review its cover letter and submissions to the Board on the Espoo Convention and Espoo Materials filed December 17, 2021, which provide further information and context to the following submissions.³⁴⁰ In addition, Baffinland requests that the Board give due consideration to the following further submissions respecting the Board's jurisdiction to consider transboundary effects and impose related terms and conditions in a Project Certificate.
972. First, there was no evidence tendered during the Phase 2 Proposal that any Project-related activities would result in a transboundary effect. No evidence was provided by any of the Parties, or Greenland or Denmark that the Phase 2 Proposal would likely result in a transboundary effect. In fact, it is worth noting that Baffinland has been operating the Mary River Project for 6 years, and Greenland and Denmark did not tender any studies or other evidence that the existing Project activities have, to date, caused a transboundary effect or any effect at all on valued ecosystemic or socio-economic components.

³⁴⁰ See NIRB Registry No. 337553 - 337554

973. Similarly, there was no evidence tendered that any of the Phase 2 Project related activities that occur outside the Designated Area, that is, Project-related shipping, would cause effects within the Designated Area.
974. While we understand the Government of Canada’s interpretation of s. 158 of NuPPAA (as outlined in its cover letter to its closing remarks) to provide that the Board and the responsible minister have “broad authority to assess and regulate activities carried out beyond the designated areas that have a connection to the designated area”, Baffinland questions the accuracy of this interpretation.
975. In any event, it is not necessary for the Board to consider terms and conditions to address transboundary effects, as there is no evidence that the Project will cause any.

7.5 Environmental Working Groups

976. Some Intervenor have expressed concern during the Phase 2 process about the current functionality of the environmental working groups established under the Project Certificate. Baffinland has taken these concerns seriously and has worked hard to address them. As an example, we have provided summaries to Working Group members and to NIRB on multiple occasions and through various forums to demonstrate how Baffinland has received and responded to MEWG and TEWG recommendations throughout the years. A few key examples include:
- adding a drone component into the Bruce Head Monitoring Program,
 - conducting aerial surveys throughout all phases of the shipping season and
 - doubling survey effort for the Height-of-Land monitoring program.
977. The list above and the repeated submissions to the NIRB are evidence of Baffinland’s commitment to the functionality of the Working Group, respect for the constructive discussions that are had there, and that advice from the Working Group has been heard and integrated into the project. In contrast, the members of the Working Group that have criticized its efficacy have presented no evidence to the Board to substantiate their statements on this topic referenced at the footnote. Further, as was raised by Baffinland during the January 2021 Hearing session, some of the same members that have criticized functionality of the Working Group, continue to advocate for the establishment of additional working groups (i.e. request from QIA for the establishment of a Freshwater Environmental Working Group). This suggests members do in fact see the value of these Working Groups.

978. As the NIRB has previously been made aware, from time to time Baffinland has struggled to reconcile recommendations from the Working Groups that do not properly appreciate or weight health and safety concerns and limitations or operational constraints. Costs or logistics of implementing recommendations are rarely taken into account, despite this reasonably needing to be a consideration when weighing the value of a proposed program or activity. In many cases, despite Baffinland's efforts to specifically and clearly communicate these considerations to the Working Groups, members continue to advocate for research studies that are not feasible (i.e. using divers for biofouling monitoring on ore carriers, or collecting dust at far sites in winter months). Additionally, participants have made recommendations that offer minimal scientific value or enhancement of understanding of the potential effects of the Mary River Project at very significant cost. For example, in 2019 the QIA technical representative requested Baffinland investigate how fox mortality numbers across years compare with data on population cycles and prey availability. Baffinland identified in response to the QIA that assessing predator/prey relationships between generally understudied species is far outside the scope of Project effects monitoring. In all cases, it is important to distinguish between initiatives that may be of personal interest or curiosity to individual Working Group members, and those that have a reasonable link to the Mary River Project's activities.
979. Some Intervenors have suggested that going forward, the working groups should shift from acting in an advisory capacity to become an "oversight" function, and that decisions at the working group should be made by "consensus". In the manner proposed by the Working Groups, "by consensus", means Baffinland should be required to adopt any measure that all members of the working group agree on, irrespective of the rationale for not moving it forward that may be provided by Baffinland. Baffinland has several concerns with this approach.
980. The NIRB should give close consideration to the experience and composition of the members of the Working Group who are seeking a greater oversight role. Some Working Group members have expertise conducting research on the marine or terrestrial environments or have intimate knowledge of the area, while others do not have that expertise. Some participate solely in their capacity as a government regulator or as an interested Party. However, to Baffinland's knowledge none of the other participants have significant experience operating industrial projects, particularly in the complex and challenging Arctic. While recommendations brought forward within these Working Groups must be subject to appropriate consideration and discussions taking into consideration IQ and western science, they must also be weighed against the practical operationalization of the recommendation along with a fulsome cost benefit analysis, which no other party is suited to do outside of Baffinland. To be clear, Baffinland accepts that some Working Group members wish to see a process inserted into the Terms of Reference to generate and record consensus-based recommendations and this has been reflected in the most recent drafts, however, Baffinland must stress the need to retain ultimate authority to reject recommendations that don't meet reasonable criteria for implementation.

981. Overall, Baffinland remains of the opinion that establishing the Working Groups as a body that is empowered to “direct” rather than “advise” will exacerbate tension within the Groups, and reduce the opportunity for candid discussion on the operating environment and relevant scientific information. Clarity on the mandate of the Working Groups is essential to ensure they fulfil their intended role of enhancing Baffinland’s monitoring programs. Baffinland also notes that many of the members that participate in the Working Groups also represent regulatory bodies that have the ability to issue directions to Baffinland in accordance with their jurisdiction, mandate or issued permits. As has always been the intention of the Working Groups, they should not duplicate or fetter regulatory obligations, and rather remain focused on the enhancement of Baffinland’s monitoring programs and providing advice on best practices or new research they are aware of to inform the ongoing development and implementation of Baffinland’s comprehensive EMS.
982. Throughout the hearing, the NIRB has also heard suggestions that the membership of the Working Groups should be increased. Baffinland has always been, and will remain open to working with individuals and groups who are impacted by the Mary River Project, or have an interest in the Project. To that end, Baffinland has committed to resourcing the establishment of a number of new structures to facilitate this (i.e. the Inuit Committee, third-party Dust Audit Committee, etc), but the Working Groups are not the appropriate forum for all parties. Increasing the number of attendees, observers and members in the working groups risks reducing functionality and diluting their primary purposes.
983. In its most recent draft Terms of Reference (ToR) for the Working Groups³⁴¹ Baffinland presented a reasonable path forward that would result in meaningful changes to the Groups current structure, operational schedule, and ability to influence the Project. It is expected that this should improve Members’ expectations, communication within the Group and outcomes. Baffinland also highlights Terms and Conditions in Appendix E to this submission and Commitments in Appendixes B and C to this submission, which reflects this new approach to the Working Groups.
984. Included within the most recent ToR, Baffinland has also suggested strengthening the Working Groups consensus based recommendation development process. Should there be a recommendation that is agreed amongst all voting members of the working group except for Baffinland, the Working Group would follow the processes described at Section 7 of the Draft ToR, ultimately seeking direction from NIRB if a resolution cannot be found amongst members.

985. Included in Attachment 1 of Baffinland's March 2021 Written Responses was a model showing how the Inuit Committee and the Working Groups could complement one another should Phase 2 be approved.³⁴² This proposed integrated relationship would allow for an improved flow of information with Inuit and technical experts, which Baffinland hopes will reduce the sometimes conflicting advice Baffinland has been presented with. For example, while Working Group members have consistently recommended Baffinland undertake additional underwater acoustic monitoring and aerial surveys, Inuit community representatives have expressed hesitations with these programs running on an annual basis. Although Baffinland has attempted to bridge this gap between Working Group recommendations and community preferences, the model proposed by Baffinland will facilitate direct engagement between these Parties, which is expected to better resolve these discrepancies.
986. Most importantly, under this revised model, the Working Groups and the Inuit Committee would practically function as an advisory body to the NIRB, not just Baffinland. NIRB would at all times continue to maintain its monitoring oversight role for the Project, and that role under the Nunavut Agreement should continue to be respected and not be delegated to any third party.
987. We acknowledge the TOR are still draft and we appreciate the feedback we have received to date. It is challenging and unfortunate that there has not been better engagement from participants on this initiative to date, however, Baffinland is confident they can be agreed to and finalized within a reasonable time frame and will report back to the NIRB once a consensus with the Working Groups have been reached. This will include a new ToR for the committed to Freshwater Environment Working Group (FEWG).

7.6 Baffinland's response to the QIA and MHTO's Submissions regarding Crown Consultation

7.6.1 Overview

988. Some Intervenors, such as the QIA and the MHTO have taken the position that before the NIRB can issue its recommendation to the responsible federal Ministers (the **Responsible Ministers**), it must first assess and find that Crown's consultation in respect of the Phase 2 Proposal has been adequate.³⁴³ As an adjunct to this argument, the QIA suggests that consent – potentially in the form of an IIBA – is a precondition to the NIRB making a positive recommendation to the Responsible Ministers on the Phase 2 Proposal.
989. Baffinland's response, in summary, is as follows:

³⁴² See Baffinland's Written Comments of September 10, 2021, at pages 51-52, NIRB Registry No. 336778.

³⁴³ See, in particular, QIA, Final Written Submission (**QIA FWS**), page 37; MHTO, Final Written Submissions (**MHTO FWS**), page 109 at para 558, page 121 at paras 619-620.

- NTI (on behalf of Nunavut Inuit) and the federal government have agreed via the Nunavut Agreement that the decision-makers in respect of projects like the Phase 2 Proposal are the Responsible Ministers,³⁴⁴ not the QIA or the MHTO.
- As the final decision-makers on the Phase 2 Proposal, the Responsible Ministers have the legal responsibility for assessing the adequacy of Crown consultation. Any assessment of Crown consultation by the NIRB at this stage of the approval process would be premature, in the wrong forum, absent the necessary statutory jurisdiction, and by the incorrect decision-maker. The NIRB should decline to entertain any arguments on the adequacy of Crown consultation.
- The NIRB's mandate is to consider whether the Phase 2 Proposal enhances the well-being of all residents and communities in the area, taking into account the interests of other Canadians. The NIRB's regulatory proceeding, and in particular the hearing process, enables it to make an informed recommendation. The QIA and the MHTO are but two of several Inuit voices that informed the environmental assessment process.
- Both the QIA and the MHTO actively participated in the regulatory process and had their views on the Phase 2 Proposal considered as part of the Project review.
- There is no requirement at law that an IIBA be agreed to prior to the NIRB making its recommendation to the Responsible Ministers. The NIRB itself rejected such an argument in past similar proceedings finding instead that an IIBA is not a pre-condition to its recommendation.
- In relation to the Phase 2 Project there is, in any event, an IIBA agreed to for the Mary River Project, and under the ICA (which is stated at Section 8.2 to be an Addendum to the IIBA per Article 26 of the NA), Baffinland and the QIA have agreed to consequential amendments to the IIBA relating to all aspects including employment, training, business opportunities, monitoring, adaptive management, and financial and royalty payments.

Baffinland addresses each of these points in detail below.

7.6.2 The Responsible Ministers are the decision-makers that decide whether the Phase 2 Proposal proceeds

990. Under the *NuPPAA*, the Responsible Ministers decide whether to approve a project proposal. The decision-making process is set out in *NuPPAA* is as follows:

- After conducting its review, the NIRB issues a written report to the "responsible Minister" (*NuPPAA* s. 104).
- The "responsible Minister" is the federal Minister or Ministers with "the jurisdictional responsibility for authorizing a project to proceed" (see *NuPPAA* ss. 73 and 149, emphasis added).

³⁴⁴ *Nunavut Planning and Project Assessment Act (NuPPAA)*, ss. 73, 104, and 104.

- The NIRB's report to the Responsible Ministers must set out the NIRB's "determination" as to whether the project should or should not proceed and any terms and conditions the NIRB recommends should apply (*NuPPAA* s. 104).
- The NIRB's "determination" is not actually determinative, though, because after receiving the NIRB's report, and regardless of whether the NIRB "determines" the project should or should not proceed, the Responsible Ministers "must" agree with or reject the NIRB's determination (*NuPPAA* ss. 106-107).
- The Responsible Ministers also "must" accept or reject the terms and conditions recommend by the NIRB (*NuPPAA* ss. 105, 107-108).
- Finally, if, and only if, the Responsible Ministers decide the project should proceed, the NIRB "must" issue a project certificate with the terms and conditions chosen by the Responsible Ministers (*NuPPAA* ss. 110-111).

991. The QIA argues that its consent is required for the Project to proceed. This is not supported by the Nunavut Agreement or *NuPPAA*.

992. The Nunavut Agreement expressly provides for the project approval process in Nunavut, including the creation of the NIRB, the NIRB's review of project proposals, and the final decision by the federal Minister.³⁴⁵ The *NuPPAA* was enacted for the express purpose of setting out in a statute the land management regime provided for in the Nunavut Agreement (see the *NuPPAA* preamble). Neither the Nunavut Agreement nor *NuPPAA* says that QIA consent is required before the federal Minister(s) can approve a project.

993. The QIA's reliance on the Supreme Court's decision in *Tsilhqot'in Nation v. British Columbia* (*Tsilhqot'in*)³⁴⁶ is misplaced and ignores the land use and environmental assessment decision making process under the Nunavut Agreement. *Tsilhqot'in* dealt with the requirements for governments and others seeking to lands following a declaration of Aboriginal title. It did not deal with a modern day land claims agreement such as the Nunavut Agreement, wherein the parties settled the issue of title in a comprehensive, legally binding agreement. To apply the reasoning in *Tsilhqot'in* to the within case is to disregard that, pursuant to the Nunavut Agreement, the Responsible Ministers are the final decision makers on project proposals.

³⁴⁵ NLCA, Article 12.

³⁴⁶ *Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44 [*Tsilhqot'in*].

7.6.3 The Responsible Ministers, not NIRB, determine the adequacy of consultation and, where necessary, accommodation

994. The duty to consult and accommodate arises when the Crown contemplates conduct that might adversely affect an Aboriginal right.³⁴⁷ The Crown conduct in question here is the Responsible Ministers potential approval of the Phase 2 Proposal.³⁴⁸ As the Supreme Court explained in *Beckman v. Little Salmon/Carmacks First Nation (Beckman)*, it is the Crown's final decision-maker who must determine if the duty to consult has been met.³⁴⁹
995. The QIA and MHTO both rely heavily on *Clyde River (Hamlet) v. Petroleum Geo-Services Inc. (Clyde River)*³⁵⁰ for the proposition that the NIRB must assess the adequacy of consultation. With respect, their reliance on *Clyde River* is misplaced. The Supreme Court of Canada's holding in *Clyde River* was clear and explicit that the duty to assess arose because the National Energy Board (NEB) was the final decision-maker. As the Court explained:

*If the Crown's duty to consult has been triggered, a decision maker may only proceed to approve a project if Crown consultation is adequate. Although in many cases the Crown will be able to rely on the NEB's processes as meeting the duty to consult, because the NEB is the final decision maker, the key question is whether the duty is fulfilled prior to project approval.*³⁵¹

[Emphasis added.]

996. The NIRB is not the final decision maker here. The *Clyde River* case, and other cases relied on by the QIA and the MHTO including *Gitxaala Nation v. Canada (Gitxaala)*³⁵² and *Tsleil-Waututh Nation v. Canada (Attorney General) (TWN)*³⁵³, all dealt with a final decision-maker.³⁵⁴ Such a scenario is clearly distinguishable from the within scenario as the NIRB is not the final decision-maker.

³⁴⁷ *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73 at para 35 [*Haida*].

³⁴⁸ See *Clyde River* at para 39, where the Crown conduct in question was the final decision of the National Energy Board.

³⁴⁹ *Beckman* at para 84.

³⁵⁰ See, for example, QIA FWS at pages 36-37; MHTO FWS, page 111 at paras 566-567, page 121 at para 619.

³⁵¹ *Clyde River*, para 39.

³⁵² *Gitxaala Nation v. Canada*, 2016 FCA 187 [*Gitxaala*].

³⁵³ *Tsleil-Waututh Nation v. Canada (Attorney General)*, 2018 FCA 153 [*TWN*].

³⁵⁴ The final decision-maker in question was the National Energy Board in *Clyde River* and the Governor in Council in *Gitxaala* and *TWN*.

997. The QIA and the MHTO both repeatedly point out that the Crown is relying on the NIRB's process. While true, reliance on the NIRB's report and recommendation does not change that the Responsible Ministers make the final decision. In both *Gitxaala* and *TWN*, the Federal Court of Appeal expressly refused to review the reports of the environmental assessment bodies in question on the basis that those decisions were not determinative.³⁵⁵ NIRB's role is to produce a report and make a non-binding recommendation to the Responsible Minister. This is not dissimilar to the environmental assessment reports rejected for review by the Federal Court of Appeal in *Gitxaala* and *TWN*.
998. In addition to not being the final decision-maker, the NIRB also lacks the necessary statutory jurisdiction to make an assessment on the adequacy of consultation. As stated by the Supreme Court of Canada in *Rio Tinto Alcan Inc. v. Carrier Sekani Tribal Council*³⁵⁶ (**Rio Tinto**):

[55] The duty on a tribunal to consider consultation and the scope of that inquiry depends on the mandate conferred by the legislation that creates the tribunal. Tribunals are confined to the powers conferred on them by their constituent legislation: R. v. Conway, 2010 SCC 22, [2010] 1 S.C.R. 765. It follows that the role of particular tribunals in relation to consultation depends on the duties and powers the legislature has conferred on it.

[56] The legislature may choose to delegate to a tribunal the Crown's duty to consult. As noted in Haida Nation, it is open to governments to set up regulatory schemes to address the procedural requirements of consultation at different stages of the decision-making process with respect to a resource.

[57] Alternatively, the legislature may choose to confine a tribunal's power to determinations of whether adequate consultation has taken place, as a condition of its statutory decision-making process. In this case, the tribunal is not itself engaged in the consultation. Rather, it is reviewing whether the Crown has discharged its duty to consult with a given First Nation about potential adverse impacts on their Aboriginal interest relevant to the decision at hand.

[58] Tribunals considering resource issues touching on Aboriginal interests may have neither of these duties, one of these duties, or both depending on what responsibilities the legislature has conferred on them. Both the powers of the tribunal to consider questions of law and the remedial powers granted it by the legislature are relevant considerations in determining the contours of that tribunal's jurisdiction: Conway. As such, they are also relevant to determining whether a particular tribunal has a duty to consult, a duty to consider consultation, or no duty at all.

³⁵⁵ See *Gitxaala* at paras 122-127; *TWN* at paras 175-202.

³⁵⁶ *Rio Tinto Alcan Inc. v. Carrier Sekani Tribal Council*, 2010 SCC 43.

999. The Nunavut Agreement and *NuPPAA* include detailed lists of the factors that NIRB must consider in its review and determination. The list of factors does not include a determination on the consultation process.
1000. It is notable that neither the Nunavut Agreement nor *NuPPAA* grants the NIRB jurisdiction to decide questions of law.³⁵⁷ Instead, *NuPPAA* states that the NIRB may refer a question of law to Nunavut Court of Justice (see s. 221).
1001. It is also worth noting that the NIRB as an Institution of Public Government established by the Nunavut Agreement, is fundamentally different in many ways as compared to the NEB. Its membership is made up of nominees from DIOs and RIOs as well as government, and for the Phase 2 Proposal the majority of Panel members are Inuit. As set out in the “Procedure and Evidence” section of the Final Written Statement above, NIRB has held a robust process with numerous opportunities for written and oral presentation. Many documents were made available in Inuktitut. Inuit groups participated fully in the Phase 2 NIRB process which gave particular care and attention to Inuit oral traditions, and many participants were able to access significant funding from the federal government, as described in the “Procedure and Evidence” section of the Final Written Statement above.

7.6.4 Crown consultation does not end with the NIRB process

1002. The Supreme Court of Canada’s finding in *Beckman* that it is the final decision-maker who must bring consultation to an end and weigh up the respective interests is logical given consultation and accommodation may continue to the final decision point. The Responsible Ministers have provided notice of this. Their representatives have confirmed in writing that “the Board’s assessment process, and associated proceedings, are relied upon to assist the Crown in discharging its duty to consult” (emphasis added).³⁵⁸ However, as the Federal Court of Appeal explained in *TWN*, “[w]hen the Crown relies on a regulatory or environmental assessment process to fulfil the duty to consult, such reliance is not delegation of the Crown’s ultimate responsibility to ensure consultation is adequate.”³⁵⁹ This reflects what the Crown has told the NIRB in this review:

*The Board’s final report and recommendations, along with Canada’s tracking of concerns and potential solutions, provides federal decision-makers with information to assess the adequacy of Crown consultation prior to making Ministerial decisions.*³⁶⁰

³⁵⁷ Note that in *Clyde River*, the National Energy Board had “broad powers to hear and determine all relevant matters of fact and law” (para 37).

³⁵⁸ Letter from Lisa Dyer, Northern Project Management Office, dated and filed January 8, 2021, NIRB Registry No. 332458.

³⁵⁹ *TWN* para 493.

³⁶⁰ Letter from Lisa Dyer, Northern Project Management Office, dated and filed January 8, 2021, NIRB Registry No. 332458.

1003. Given that consultation and accommodation may continue after the NIRB's report, it would be premature for the NIRB to assess its adequacy. The Crown has already expressed in writing its intent to continue the consultation process following the issuance of NIRB's report:

After the Board's review process has concluded, the Government of Canada sends a follow-up letter to Inuit and other Indigenous groups, in order to seek any further views on the Board's final report and recommendations as well as any outstanding concerns that may still exist. Responses to this letter help to inform the Government of Canada as to whether consultation and potential accommodation of any impacts on rights is sufficient prior to the making of a final Ministerial decision.³⁶¹

1004. As the final decision-maker on the Phase 2 Proposal, the Responsible Ministers have the legal responsibility for assessing the adequacy of Crown consultation. The Crown has confirmed that consultation is ongoing and will continue following the issuance of NIRB's report. Given this, any assessment of Crown consultation by the NIRB at this stage of the approval process would be premature, in the wrong forum, absent the necessary statutory jurisdiction, and by the incorrect decision-maker. The NIRB should decline to entertain any arguments on the adequacy of Crown consultation.

7.6.5 The NIRB's mandate is to determine whether the Phase 2 Proposal enhances the wellbeing of all Inuit

1005. The NIRB must conduct its review and issue its report according to the mandate set out in *NuPPAA*. Ultimately, the NIRB is charged with preparing a report for the Responsible Ministers presenting its assessment of the project and the potential ecosystemic and socio-economic impacts on the wellbeing of all Inuit (see *NuPPAA* s. 104(a)). The NIRB's "determination" as to whether or not the project should proceed must be based on that assessment (see *NuPPAA* s. 104(b)). And the assessment, in turn, must be based on the considerations set out in *NuPPAA*. The Act specifically enumerates numerous environmental and socio-economic factors the NIRB must take into account (see *NuPPAA* ss. 90, 103).

1006. Both the QIA and the MHTO actively participated in the regulatory process and their views on the Phase 2 Proposal will be considered as part of the decision regarding the recommendation to the Responsible Ministers.

7.6.6 Completion of an IIBA is not a pre-condition to the issuance of NIRB's report

1007. The QIA appears to suggest that an IIBA must be concluded prior to the NIRB making its recommendation to the Responsible Ministers. Baffinland submits that there is no support for such a requirement in the NA, *NuPPAA*, or at law generally.

³⁶¹ Letter from Lisa Dyer, Northern Project Management Office, dated and filed January 8, 2021, NIRB Registry No. 332458.

1008. It is clear from the provisions of the NA and of *NuPPAA* that an IIBA follows a NIRB report and a Ministerial approval. Section 140 of *NuPPAA* for instance, specifies as follows:

Inuit Impact and Benefit Agreements

140 Any Inuit Impact and Benefit Agreement entered into by a proponent and the designated Inuit organization under Article 26 of the Agreement must be consistent with the terms and conditions set out in an original or amended project certificate.

1009. In fact, in past proceedings, the NIRB, when faced with a request to defer its ruling pending the conclusion of an IIBA, declined to do so. Instead, the NIRB proceeded with its ruling absent an IIBA. Final agreement on the terms of an IIBA is not a pre-condition to a NIRB report.

1010. In any event, it is also noted that the ICA is an Addendum to the IIBA (see s. 8.2, ICA).

8 DRAFT PROJECT CERTIFICATE TERMS AND CONDITIONS

8.1 Final Baffinland Version Draft Revised Project Certificate No. 005 for Phase 2

1011. Baffinland Iron Mines Corporation (Baffinland) is pleased to provide the Nunavut Impact Review Board (NIRB) with its updated comments and suggested revisions to Project Certificate No. 005 for the Mary River Project (the Project). Baffinland respects that the final wording of Project Certificate No. 005 will be determined by the NIRB. This document replaces the previous version of this document which was shared with NIRB in April 2021. However, in some instances the NIRB is referred back to the original wording presented in the April 2021 copy.
1012. Generally, the following approach was taken to outline suggested revisions to current terms and conditions where Baffinland has identified an opportunity to clarify the requirements of Project Certificate No. 005 or where the objectives of the term and condition have previously been met:
1. If a suggested revision to an existing term and conditions is proposed, a description of the associated revision has been provided.
 2. Where any suggested revisions to remove a term and condition has been made, a rationale to support the recommended change has been provided.
 3. Where appropriate, the proposed edits and or new terms and conditions also reflect commitments that were made by Baffinland to interveners to resolve or address certain technical issues during the NIRB Phase 2 reconsideration process.
1013. The April 2021 version of this document has been updated with two columns to summarize and respond to comments from the Government of Nunavut, Government of Canada and the QIA in their Final Written Statements. Baffinland has responded to comments from these other Parties in the far right column in *red italicized text*.
1014. In their comments on the Project Certificate, and at other times throughout this review, some participants have suggested that even if Phase 2 does not proceed, the Board should take this opportunity to institute amendments to the current Project Certificate to the Minister in relation to the Approved Project. The NIRB should reject this suggestion on grounds of procedural fairness. If Phase 2 is not approved, NIRB should not revise the Project Certificate for the Approved Project. This was not the focus of the Phase 2 process. Baffinland's commitments were made in the context and associated risks of the Phase 2 reconsideration and the vast majority are contingent on Phase 2 approval. Revising the current Project Certificate in relation to the current project without Phase 2 approval would require a separate new process with proper notice to all parties.
1015. Baffinland also notes that QIA suggested several new terms and conditions in their submission, not all of which relate to previously agreed commitments to NIRB or provisions in the Inuit Certainty Agreement (ICA). Baffinland has addressed all new terms and conditions, including those recommended by Baffinland, at the end of the document.

1016. Baffinland has the following general comments for NIRB's consideration:

- While parties might present slightly different wording with the same meaning, Baffinland is generally in alignment with the majority of suggestions of GC and QIA, with some exceptions which Baffinland has provided commentary on.
- As set out in the attached, for those items Baffinland has concerns about the clarity, enforceability or impact on viability arising from proposed language and Baffinland suggests Baffinland's wording in those cases should be preferred.
- Baffinland encourages the NIRB to give careful consideration to the development of overly prescriptive Terms and Conditions. Baffinland notes the final wording of the TC must be clear and enforceable, and allow for adaptability within the Project (e.g. based on monitoring results, new technologies, etc.) over time.
- Baffinland also notes that the Project Certificate need not instruct what adaptive management measures be taken, or the process for implementing these. In light of Baffinland's extensive commitments, it is suggested that all that is required is a Term and Condition which ensures that Baffinland has a robust adaptive management plan in place, and that consultation with regulators, the Inuit Committee and relevant Working Groups on this Plan will occur.
- Baffinland also notes that as the Inuit Stewardship Plan should be the product and driven by the Inuit Committee it is not appropriate for Terms and Conditions to identify what ought to be a priority for them. This would disempower Inuit from establishing their own priorities with respect to environment and social oversight of the Project.
- The Board should be cautious in making amendments to conditions that may have the effect of creating additional and unnecessary processes that can be used to result in delays.
- The Board must also draft terms and conditions that are entirely within Baffinland's control. Otherwise, it is possible for Baffinland to be deemed "out of compliance" based on the actions or inactions of third parties.
- Baffinland suggests the NIRB defer to revisions by Parties with expertise (including Baffinland) and regulatory oversight on the subject matter.
- Baffinland also notes that the Terms and Conditions should in no way result in Baffinland assuming responsibilities of government. For example, stock assessment and management is and remains the responsibility of relevant departments such as DFO and GN. Although Baffinland will continue to work with these Parties to share information that may support their efforts to fulfill their mandate, Terms and Conditions should not suggest Baffinland ought to absorb that responsibility as well.
- Baffinland believes there is benefit to consolidating obligations on related topics into less overall TCs, this will make the PC much more operational and accessible. Baffinland encourages NIRB to take this into consideration in its drafting.
- The QIA has made suggestions that all raw data collected for the Project should be distributed, and it should be recognized that all data collected by Baffinland is the property of Inuit. Baffinland cannot

agree that all data collected through its programs is owned by a third party. The results are shared in accordance with NIRB requirements. Baffinland's reporting is extensive and provides transparent and detailed information on all data collected for the Project. However, the requirement to make publicly available all raw data would not only result in a massive cost/effort for Baffinland, in some cases, Baffinland may be prohibited from sharing it due to other commercial or legal obligations. For the reasons set out above, provision of all raw data is not practical nor useful. Baffinland is open to case-by-case requests.

- The QIA has suggested in several areas that Baffinland is to provide funding, which is not appropriate for inclusion in the Project Certificate. Rest assured there is ample funding for QIA to carry out their obligations related to environmental monitoring and management through a fixed annual implementation budget of \$8 million per year (\$9 million for first three years following project approval) for the life of the Project, as negotiated in the Inuit Certainty Agreement.

1017. Baffinland appreciated the time and effort put forward by Interveners in reviewing and responding to Baffinland's previous iterations of this document. Baffinland has carried out its own meaningful review of submissions from Interveners and is confident in the NIRB's ability to consider the information presented as appropriate for integration into a final amended Project Certificate 005 that considers the Phase 2 Proposal.

9 TIMING

Baffinland respects that the Phase 2 Proposal review has been complex and lengthy and includes a significant volume of information for NIRB to consider in making its decision. The Board and its staff have been dedicated and diligent in carrying out their obligations under the Nunavut Agreement during this Phase 2 process.

As Baffinland has consistently stated throughout the Phase 2 reconsideration and review, a timely decision on Phase 2 is essential to the ongoing operations of the Mary River Project. It is a reality that if the Mary River Mine is to continue to operate into the future, Phase 2 is urgently needed and cannot be further delayed. Due to the lead times for logistical planning and short Arctic construction season, the delay in closing the public record in December 2021 as originally scheduled has already caused significant harm to Baffinland, and will continue to have very serious consequences for the Project from an investment and planning perspective well into 2022 and 2023.

Baffinland encourages the Board to issue its recommendation report to the Minister by March 10, 2022 (assuming the record closes on January 24, 2022) in accordance with NuPPAA timelines. In the event of a positive recommendation and Ministerial decision, this timing could enable Baffinland to mitigate some of the impacts caused by the unexpected further delay in closing the record following the November 2021 hearing and would help put Inuit in the earliest possible position of receiving the considerable benefits that Phase 2 has to offer, if it is to proceed.

10 REQUEST FOR APPROVAL OF THE PROJECT

1018. Baffinland has put forward its very best Project to the Board in the Phase 2 Proposal.
1019. Phase 2 of the Mary River Project will provide tremendous benefits to Inuit, the Impacted Communities, Nunavummiut, Nunavut and Canada generally. But Baffinland understands that Phase 2 must be done in a way that is inclusive and respectful. Expansion of the Mary River Project cannot come at the expense of the environment, and Inuit must be active participants in all aspects of the Project. Baffinland believes it has put forward a project proposal for Phase 2 that ensures this balance is met.
1020. We are grateful for all of the knowledge that has been shared with us both inside and outside the NIRB process. We are very proud of the work our team has done, in particular since the public hearing began in November 2019, to improve the project, expand the benefits, and to support and enhance the framework for project planning, monitoring, and adaptive management to achieve environmental and social sustainability as well.
1021. The Board can move forward with the confidence that Baffinland's assessment was subject to a rigorous technical review with the involvement of subject matter experts from territorial and governmental agencies on key topics such as caribou, marine mammals, climate change, water resources, and the terrestrial and marine environment.
1022. Baffinland is pleased that the Government of Nunavut has confirmed in its Final Written Statement that all technical issues have been resolved.
1023. Baffinland is also pleased to have worked diligently with the Government of Canada to find an agreeable path forward for each of the 133 final written submissions and additional comments submitted through the review process, except in one singular instance (namely, the request for a term and condition to require Baffinland to use lighter distillate for shipping along the Northern shipping route within the Arctic areas of the Canadian Exclusive Economic Zone). On this issue, Baffinland has given the NIRB detailed and comprehensive evidence and rationale as to why this is not a reasonable or feasible request, and proposed a reasonable compromise path forward in our commitment to use lighter distillate fuel for shipping along the Northern Shipping Route for areas within the Nunavut Settlement Area, should Phase 2 be approved.
1024. Baffinland appreciates the many expressions of support and positive feedback we have heard from our employees and contractors, individual Inuit, groups and communities throughout the region. We are proud of the opportunity we have to learn from and support our Inuit employees and Inuit employees of our contractors in building the careers that they wish to pursue. There is no success at Mary River without the success of our Inuit colleagues and their families. We are also looking forward to working with the next generation of Inuit youth currently in the education system and to continue to support the development of the Qikiqtani Region and Nunavut.

1025. Baffinland has listened to all Inuit participating in this process and impacted by the Project, and has made important Project changes and commitments in response.
1026. We are excited by the prospect of moving forward together with Inuit to implement the precedent setting commitments and structures that have been developed during the NIRB process. However, implementation of the Phase 2 commitments and structures will require a significant financial investment. Implementation of the majority of these will require a level of financial support that is only available to Baffinland if Phase 2 is allowed to proceed.
1027. The Early Revenue Phase was envisioned as a “starter” mine, and it should be understood that the operation is now well past the end of its intended mine life. The Steensby portion of the approved Mary River Project is simply not available to Baffinland at this time and on the basis of the Early Revenue Phase only. Phase 2 is the key to unlocking the benefits that were promised to Inuit when the 18mtpa Mary River Project was first approved by NIRB ten years ago, and simply not achievable with the 4.2 mtpa Early Revenue Phase that was actually constructed. Phase 2 would see the benefits promised by the original project expand even further through the financial agreements under the ICA, the commitments described in the Commitment List, and the development of a new QIA community benefits management structure. We have been transparent with the Board with respect to the serious consequences for the future operations if it is ultimately determined that Phase 2 will not proceed. The Phase 2 Proposal is Mary River’s future.
1028. Baffinland appreciates the responsibility and privilege it has to operate on Inuit owned lands, and strives to implement Inuit values in its operations every day. The Mary River Project has the long-term ability to change Nunavut lives for the better. We believe there is overwhelming evidence before the NIRB that Phase 2 will create economic prosperity while protecting the environment and building stronger communities.
1029. In closing, we respectfully ask the NIRB to give great weight to the words of the Inuit employees of Baffinland that participated in this process.

“I would tell NIRB to keep working, and keep going at it, because they’re very important. They’re a very important aspect to mining, right? It’s keeping mining at a higher standard. What I would tell them is to keep us employees, Inuit employees, people from across the country, to keep us in mind, because this is helping a lot of people in more than one ways. Keep the people in mind. Keep the environmental aspect of it in mind, of course, absolutely. But at the end of the day, I’ll say it again, it’s food on the table. It’s, it’s your rent money at the end of the month, you know? It’s a lifestyle. It’s having a healthy, comfortable life.”

“Like, when we talk about over 300 Inuit working at the mine, let’s just picture that for one second because sometimes it’s hard to picture it. You look at this room. Madam Chair said that this room can only hold up to a hundred people. There’s a lot of people in this room. You times the number of people in this room by three. So three of these rooms plus a quarter of another,

that's how many beautiful Inuit work at the mine. We need to celebrate that and understand that.

Like, that's -- so when we keep saying that it's harvesting or mining, a lot of those 325 Inuit are harvesters and hunters as well, and they don't believe it's one or the other. If they did, they wouldn't work there. I wouldn't work there. I wouldn't work here.

So to the question, how would I feel? I know that I would have a lot of questions. I would want to be part of the discussions. I would want to know what benefits there are. And I'm not talking about dollar figures as well. I'm talking about all the other benefits associated with mining, but I won't go there right now. But I also would want to be a part of the solutions. ...

I think that there's a lot of fear and a lot of doubt that this could happen perhaps and -- because it's never happened elsewhere. It's never -- we can't point to anywhere this has worked or this is happening. I can understand that. Inuit have never been given this much control. All I could ask is that if you understand completely how, you know, and the reason why we want to do this, then maybe, you know, there's a place where we can come to an understanding that the reason why we're doing this is because we fully believe that it's possible.

We might not get it right away. It might take a little bit of tweaking here and there with the Inuit committees, but it's going to be -- if it's put in our project certificate. If it's a term or condition. If it's something negotiated with the Qikiqtani Inuit Association, then we will be legally obliged. We will have to implement it.

And the last point about trust. Again, it's hard. I get it. If all else fails, if you don't believe what we say, then it's going to be all in what we do. We'll have to show you. What the difference is with the Phase 2 is we're going to have to show you together. This is something that we do together."

1030. Baffinland is confident that:

- The Project will enhance the current and future well-being of Inuit;
- Baffinland's commitments will avoid or mitigate environmental or socio-economic effects;
- Baffinland's commitments optimize the benefits of the Project to Inuit and the communities.

1031. Baffinland seeks a recommendation to the Minister(s) to allow the Phase 2 Proposal to proceed, subject to reasonable terms and conditions.