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NPC File No: 150556
NIRB File No: 24XN059

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10 June 2025

Re: Environment and Climate Change Canada Information Request Response to the Grise Fiord Community Harbour Nunavut Impact Review Board Public Comment Period (24XN059)

Dear Jessica and Francis,

1 Project Overview

The Government of Nunavut -Transportation and Infrastructure Nunavut (GN-TIN) is planning the design, construction and operation of the Grise Fiord Community Harbour (the Project). The Project is located in the community of Grise Fiord, which is approximately 1,100 km north of the Arctic Circle (76° 25.001'N, 82° 54.935'W, see Appendix A (Figure A-1). The community is located on the southern shore of Ellesmere Island in Jones Sound in the Qikiqtaaluk Region of Nunavut and conforms with the North Baffin Regional Land Use Plan (NBRLUP) (Nunavut Planning Commission (NPC, 2000)). While Grise Fiord

is within the NBRLUP, the Recommended Nunavut Land Use Plan (RNLUP) (NPC, 2023) will replace the NBRLUP once it is approved.

Worley Canada Services Ltd., operating as Worley Consulting, has been retained by the GN-TIN to support the detailed design of a community harbour in Grise Fiord, Nunavut. Dynamic Ocean Consulting Ltd. (Dynamic Ocean) is supporting Worley Consulting on the permitting requirements for the Project. The Grise Fiord Community Harbour was a component of an earlier feasibility study, completed by Fisheries and Oceans Canada (DFO) – Small Craft Harbour (SCH) in 2019.

The Project will improve safety and access to water, functionality of boating activities, and reduce the congestion and environmental risks associated with the current situation (see Section 1.3 of the Grise Fiord Project Specific Information Requirements [PSIR] Report for existing infrastructure (Dynamic Ocean & Worley Consulting, 2025b)).

The permanent components of the Project are described below and are depicted in the General Arrangement (see Appendix A (Figure A-1)):

- Two new breakwaters (to create a protected harbour).
- Boat launch ramp.
- Two small craft floating docks to support mooring of small craft vessels.
- Laydown area.
- Shoreline raised and graded to create a level driving surface.
- Navigational aids.
- Harbour lighting.

Temporary components required during construction include:

- Quarry (borrow pits).
- Haul road.
- Temporary work platforms (below the HWL to support land-based construction).

Construction activities will be inclusive of the activities described in Table 1-1, with the construction schedule described in Appendix B (Table B-1).

Table 1-1: Construction Activities Associated with the Community Harbour

| Community Harbour | Quarry (borrow pits) | Haul Road |
|---|------------------------|-------------------------------|
| Infill (laydown area, breakwater, boat launch ramp) | Drilling and blasting | Construction of new haul road |
| Installation of small craft floats | Crushing and screening | Upgrades to existing road |
| Dredging | Stockpiling | Transportation of rocks |
| Stockpiling | Operation of equipment | Operation of equipment |

| Community Harbour | Quarry (borrow pits) | Haul Road |
|--|----------------------|--------------------------------------|
| Operation of equipment | - | Installation of culverts (potential) |
| Installation of navigation aids and harbour lighting | - | - |

2 Information Request Response

2.1 Background

The Grise Fiord Community Harbour Nunavut Impact Review Board (NIRB) application was submitted on 4 April 2025 (NIRB, 2025b) with the application accepted as complete on 8 April 2025 (NIRB, 2025c). The screening assessment pursuant to Section 87 of the *Nunavut Planning and Project Assessment Act* was initiated. The NIRB requested interested parties to submit comments on the Project over a 21-day Public Comment Period, which initiated on 30 April 2025. The GN-TIN received a request from the NIRB on 23 May 2025 (NIRB, 2025a) (see list below) to respond to comment submissions (hereafter referred to as Information Request [IR]).

- Transport Canada (TC), 8 May 2025 (TC, 2025).
- Environment and Climate Change Canada (ECCC), 16 May 2025 (ECCC, 2025).
- Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), 21 May 2025 (CIRNAC, 2025).

2.2 Letter Intention

This letter supports the GN-TIN's response to ECCC. The ECCC IR is provided in Appendix C.

The Project acknowledges that ECCC is the Authorities Having Jurisdiction (AHJs) for pertinent legislation as below:

- *Fisheries Act* : Section 36 of the whereby deposition of deleterious substances is prohibited from any type of water frequented by fish, or in any place where deleterious substances could enter such waters.
- *Migratory Birds Convention Act* (1994) and associated Migratory Birds Regulations (2022) (in conjunction with the Canadian Wildlife Service) for the protection and conservation of migratory birds in Canada.

The Project's Construction Environmental Management Plan ([CEMP]; Dynamic Ocean & Worley Consulting, 2025a) details monitoring and mitigation measures to minimize negative effects due to accidental deposition of deleterious substances in the aquatic environment, and for the protection of marine and migratory birds.

2.3 Response

We appreciate ECCC taking the time to support the NIRB during the Public Comment Period and have provided our responses to the IR in Table 2-1.

Table 2-1: Environment and Climate Change Canada Information Requests

| ID No. | Topic | Question | Response |
|--------|-----------------------------|--|--|
| 1 | Disposal of dredge sediment | <p>Marine sediment dredging has been identified as a project activity in the Construction Environmental Management Plan. It is planned both during the construction, when approximately 35 000 to 40 000 m3 of sediment will be removed, and during operations when required maintenance includes <i>“Removal of creek-borne sediments captured in sedimentation stilling basin”</i> and <i>“Periodic removal of beach sediments accumulated in the sediment trap located on the south breakwater.”</i> During construction, dredged sediment will be placed inside a berm to be used as fill for the laydown area, though the volume that can be disposed of in this location was not specified. Mitigation measures in the Project Specific Information Report include <i>“Dredged sediment will be disposed of at an approved offsite facility.”</i> No details were found describing the approved offsite facility.</p> <p>ECCC has identified that saline seepage from the dredged sediment may potentially negatively affect freshwater resources if the sediment is disposed of inland. Additional contaminants may also accumulate in the harbour sediment once the facility is in use, in which case dredged sediment could require special handling.</p> <p>ECCC recommends the Proponent develop a plan for the testing and safe disposal of dredged sediment during construction and operations.</p> | <p>Acknowledged. This response has been divided into three categories to address a) differences between capital and maintenance dredging, b) processes that will be considered for sediment disposal, and c) PSIR Report clarifications.</p> <p><u>Capital versus Maintenance Dredging</u></p> <p>The Project is expected to require capital dredging during construction, and potentially maintenance dredging during the operational phase. The ECCC references to ‘maintenance’ activities required for the stilling basin and sediment trap, are a component of the operations phase for maintenance activities. Measures to manage environmental effects during the operations phase will be captured in the Operations Environmental Management Plan (OEMP). Consideration will be given to the maintenance requirements for potential dredging and for remove of beach and creek born sediments in the sediment trap and sediment stilling basin.</p> <p><u>Sediment Disposal Options During Construction</u></p> <p>As identified by ECCC, during construction dredging will be required and how the sediment disposal will be managed is expected to either be repurposed as a part of the community harbour infill or disposed of upland. Should</p> |

| ID No. | Topic | Question | Response |
|--------|--|--|--|
| | | | <p>upland disposal be selected, GN-TIN will engage with pertinent AHJs, such as GN Department of Environment (DoE) to confirm necessary compliance requirements. The Project Team is aware of the requirements and responsibilities to ensure that deleterious substances do not enter aquatic environments. Should there be concerns for aquatic resources, for surface freshwater or groundwater, Subject Matter Experts (SMEs) will be engaged to plan and design for appropriate disposal strategies.</p> <p><u>PSIR Report Clarifications</u></p> <p>The statement “<i>Dredged sediment will be disposed of at an approved offsite facility.</i>”, from Section 7.1.2.4 of the Project Specific Information Requirements (PSIR) Report (Dynamic Ocean & Worley Consulting, 2025b), was from a broader commitment as below, where the intention had been that debris, depending on what it was would be disposed of appropriately (upland, repurposed, facility). We acknowledge the use of the term dredged sediment, instead of debris may have led to misinterpretations of the commitment.</p> |
| 2 | Erosion and sedimentation control and monitoring | Proposed activities such as quarrying and dredging can lead to erosion and sedimentation impacting fresh and marine water quality. The Proponent proposes using sediment and erosion | Acknowledged. Both turbidity and Sediment and Erosion Control (SEC) were considered as effects that would |

| ID No. | Topic | Question | Response |
|--------|-------|---|--|
| | | <p>control (ESC) measures to mitigate degradation of the aquatic environment. The Environmental Monitor (EM) will monitor the effectiveness of ESC measures. There are inconsistencies between the documents on how and when monitoring will occur and measures will be implemented. The Project Specific Information Requirements Report states <i>“Turbidity monitoring will be implemented.”</i> The Construction Environmental Management Plan states <i>“Run-off will be visually monitored by the EM. If there is evidence of effects to the aquatic environment (freshwater, marine), appropriate perimeter controls will be applied to minimize or prevent sediment from entering the watercourse. Should sediment enter watercourses, turbidity monitoring will be undertaken as outlined in Section 5.5.5.”</i></p> <p>ECCC has identified that waiting until there is evidence of effects to the aquatic environment before installing ESC measure or initiating turbidity monitoring may potentially negatively affect water resources. Guidelines on turbidity monitoring are available, such as the Recommendations for the Management of Suspended Solids (SS) During Dredging Activities (MDDELCC & ECCC, 2016).</p> <p>ECCC recommends the Proponent include proactive erosion and sediment control and monitoring measures in their management plans.</p> | <p>require mitigation and monitoring measures during construction.</p> <p>In the PSIR Report (Dynamic Ocean & Worley Consulting, 2025b), turbidity monitoring is raised as a measure to manage for a) Marine Sediment and Water Quality (Section 7.1.1.9) and b) Fish and Marine Mammals (Section 7.1.2.5).</p> <p>In the CEMP (Dynamic Ocean & Worley Consulting, 2025a), Section 5.4.9 (Table 5-9, SEC2) has the measure as referenced. The CEMP does provide appropriate guidance for management of turbidity and SEC. The Contractor CEMP (CCEMP) will at a minimum meet the requirements of the CEMP, in addition to the conditions that are provided by AHJ.</p> <p>These commitments are not considered contradictory, but sequential. Turbidity monitoring is required, should ‘in-water’ activities result in a visual plume that exceeds a Compliance Monitoring Zone (CMZ), to confirm that turbidity thresholds do not exceed federal Canadian Council of Ministers of the Environment Water Quality Guidelines (CCME WQG) (CCME, 1999) for turbidity (further described in Section 5.5.5 of the CEMP (Dynamic Ocean & Worley Consulting, 2025a)).</p> <p>For ‘near water’ activities, the initial requirement for the EM will be to watch for and manage ‘run-off’. The first</p> |

| ID No. | Topic | Question | Response |
|--------|-------|----------|--|
| | | | <p>action, if there was concern for SEC, would be the installation of silt fences (term ‘<i>appropriate perimeter controls will be applied to minimize or prevent sediment from entering the watercourse</i>’). The second action, if there is concern for turbidity or a CCME WQG exceedance, would be turbidity monitoring implementation by the EM to prevent plume exceedance of the CMZ.</p> <p>We appreciate ECCC providing a BMP guidance document, however, a freshwater and highly turbid environment such as the St. Lawrence is not necessarily comparable. Turbidity management described for the Project is in alignment with similar projects undertaken Nunavut (e.g. Pond Inlet Small Craft Harbour (SCH) [NPC: 148423, NIRB: 17XN030], Iqaluit SCH [NPC: 149124, NIRB: 17XN022] and Kinngait Sealift Improvement Project [NPC: 150161, NIRB: 23XN070]). It was also designed based on BMPs for marine environments and the expertise of the GN-TIN’s SMEs. In these cases, the management of turbidity, through a combination of visual monitoring, establishment of an CMZ and compliance monitoring when required, were very successful. On review MDDELCC and ECCC (2016), it is our opinion that the measures proposed for SEC and turbidity monitoring are aligned with the intention of the guidance, to minimize negative effects to the environment. However, there are some practicalities of Arctic and marine environments, that do require BMPs more aligned with this Project.</p> |

| ID No. | Topic | Question | Response |
|--------|--|---|---|
| 3 | Nitrogen contaminations from quarried rock | <p>Rock from four proposed quarries will be used in the construction of the harbour where it has the potential to release contaminants. Acid rock drainage and metal leaching are acknowledged as potential contamination sources in the Project Specific Information Requirements Report and testing is underway to ensure this will not be a problem on site. Another potential contaminant of aggregates freshly produced using a drill and explosives is blast residue, specifically the nitrogen species: ammonia, nitrate and nitrite. These elements are soluble and could be released in the ocean if they are not washed out of the rock prior to placement in the water. ECCC has identified that residue from explosives has the potential to negatively affect the marine environment. ECCC recommends the Proponent manage blast residue on quarried rock used for the harbour construction.</p> | <p>Acknowledged. This response has been divided into two categories to address a) Acid Rock Drainage (ARD), b) blast residue</p> <p><u>Acid Rock Drainage (ARD)</u></p> <p>We appreciate ECCC's recognition of the measures in place to manage for Acid Rock Drainage (ARD). Certain sulphide minerals in bedrock can be problematic from an ARD perspective. Unstable sulphides can react when exposed to air causing acid generation and Metal Leaching (ML). If left in the natural state, sulphide minerals remain benign. Screening level ARD testing was performed on a representative sample, and the paste pH values recorded (9.03) indicate an initial basic or alkaline tendency.</p> <p>In general, samples with a Neutralization Potential Ratio (NPR) <1 can be considered as Potentially Acid Generating (PAG). The sample resulted in such low concentrations (<0.3 kg CaCO₃/T) of Acid Generating Potential (AP) that the laboratory could not provide an accurate NPR and is therefore not PAG.</p> <p>It should be noted that these results and summaries are only based on one sample. While the sample is considered to be representative of the overall rock type present, if additional rock types or variability in the rock are discovered at the site, and if visible sulphides are observed</p> |

| ID No. | Topic | Question | Response |
|--------|-------|----------|--|
| | | | <p>at a later date, then additional screening and testing may be required to assess the PAG.</p> <p><u>Blast Residue</u></p> <p>Effects due to blast residue have been considered, however, it is important to note that the material sources are borrow pits, not quarries. Thus, while there may be some blasting, a lot of material sourcing will be mechanical excavation. When blasting is required, the charges used are expected to be lower in intensity and volume, and therefore a reduced amount of explosive residue.</p> <p>If blasting is required, the material will not be immediately placed in the water. The material will first need to be processed, sorted and stockpiled. From the time when the material is blasted, processed, and finally placed, the material will be exposed on land in the months that historically have higher precipitation (Government of Canada, 2025).</p> <p>During this time the material will be exposed to precipitation (snow and rain), so it is anticipated that with the handling, combined with the expected precipitation, ANFO residue would be reduced.</p> <p>The Contractor will be required to have experience with blasting this type of material.</p> |

| ID No. | Topic | Question | Response |
|--------|--|---|--|
| | | | The receiving environment for the location of the Sealift site is the ocean and therefore dilution of any residue will occur and is not likely to result in deleterious substances in the marine environment. |
| 4 | Air emissions from project equipment and diesel exhaust fluids | <p>The Construction Environmental Management Plan includes standard statements of keeping equipment well maintained, to minimize idling, and using a combination of calcium chloride and water for dust suppression in accordance with Government of Nunavut guidelines. Given the duration and close proximity of the proposed work to residences, it is important for equipment to have clean engines to mitigate air emissions. Equipment brought in via sealift should be equipped with engines meeting Tier 4 emission standards, if possible. The work will primarily be performed during the open water season, thus engines meeting Tier 4 emission standards should not be subject to issues that may occur at colder (less than roughly -11C) temperatures. If conditions are cold near the beginning or end of the construction season, there are remedies available to prevent diesel exhaust fluids from freezing including incorporation of an engine warming up time at the beginning of a shift, and storage of DEF in heated facilities onsite. ECCC recommends the Proponent plan strategies for the prevention of diesel exhaust fluid from freezing when conditions in the project area reach colder (less than roughly -11C) temperatures.</p> | <p>Acknowledged. Compliance with the Tier 4 Emissions Standards will be followed where practical (ECCC, 2017). However, this will be a contractor led decision, and there are often logistical opportunities to maximize on equipment that is already in Grise Fiord or the territory. While the majority of construction is occurring in the open-water season, there is the potential for activities to occur in shoulder seasons. It would not be practical to have equipment that has seasonal limitations. Further to this, subsequent to the completion of the project, there is often opportunities for the Hamlet to purchase the contractors equipment.</p> <p>It is our opinion that the measures proposed in the equipment maintenance and monitoring requirements as outlined in Section 5.4.21, Table 5-23 (Equipment Operations and Maintenance) of the CEMP (Dynamic Ocean & Worley Consulting, 2025a), are appropriate to meet the intention of concerns surrounding air emissions. Equipment used for the Project will be in good working order and that repairs are completed in a timely manner to minimize emissions and diesel consumption.</p> |

3 Summary and Closing

We appreciate ECCC taking the time to participate in the NIRB's Public Comment Period and are available for further discussions if needed. If you require any clarification on our responses, or have further questions, please do not hesitate to contact Victoria Burdett-Coutts (victoria@dynamicocean.ca; 778-839-2372).

A handwritten signature in blue ink, appearing to read "Victoria Burdett-Coutts".

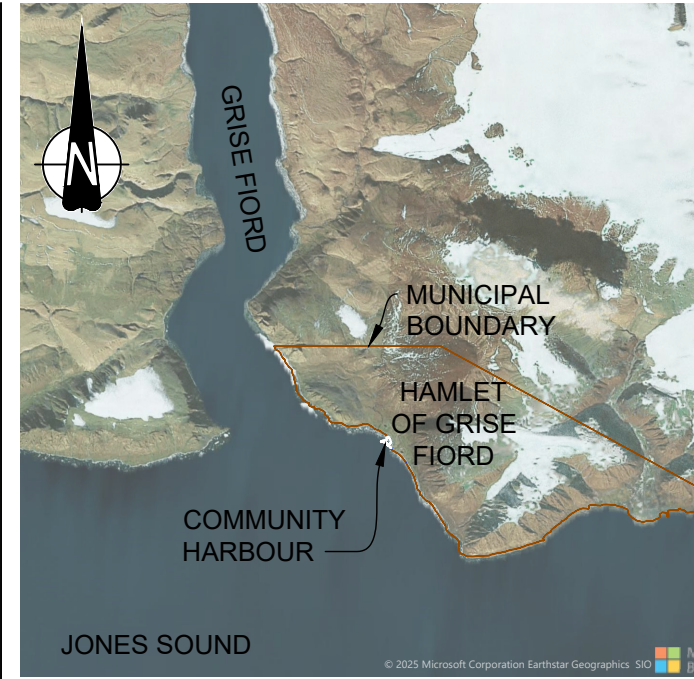
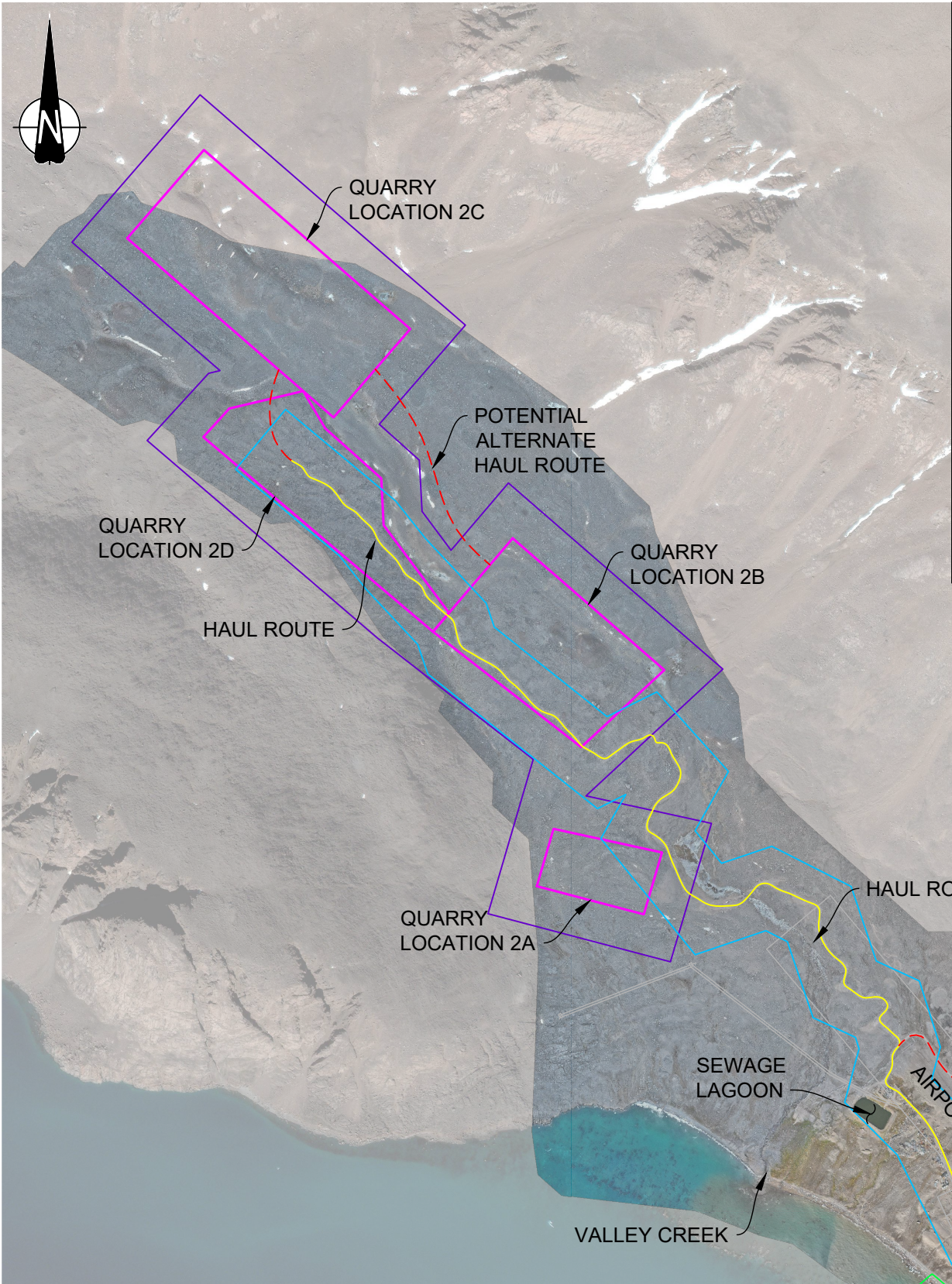
Victoria Burdett-Coutts, MSc., RPBio
Dynamic Ocean Consulting Ltd.
Senior Regulatory Professional

A handwritten signature in blue ink, appearing to read "Chris Meisl".

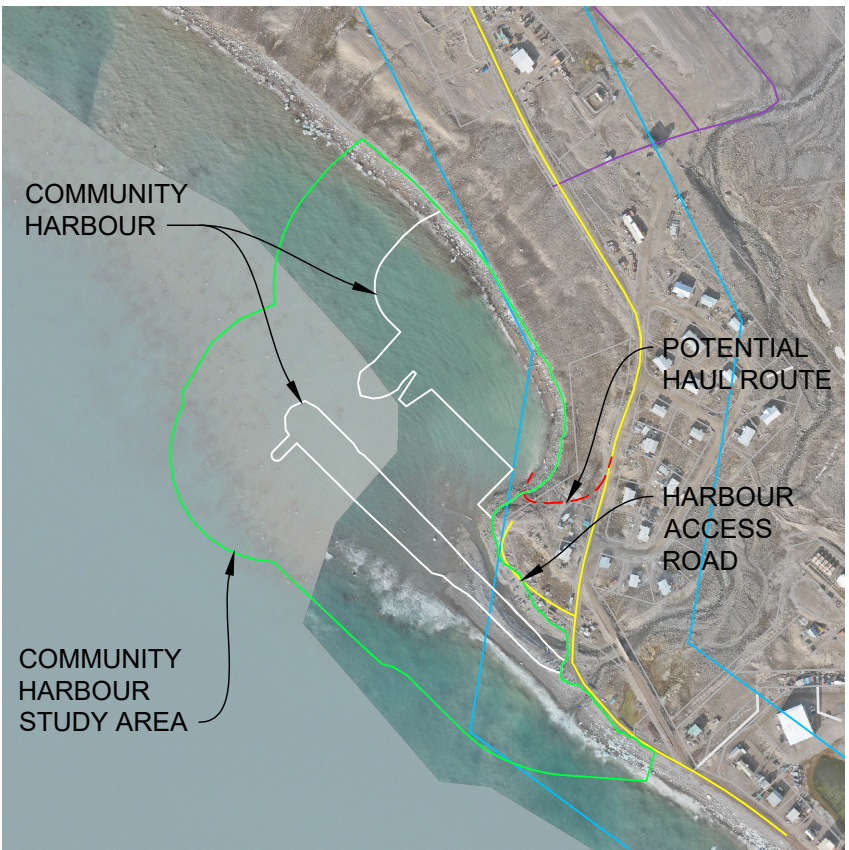
Chris Meisl, PEng.
Worley Canada Services Ltd.
Project Manager

Appendix A: Supporting Figures & Drawings

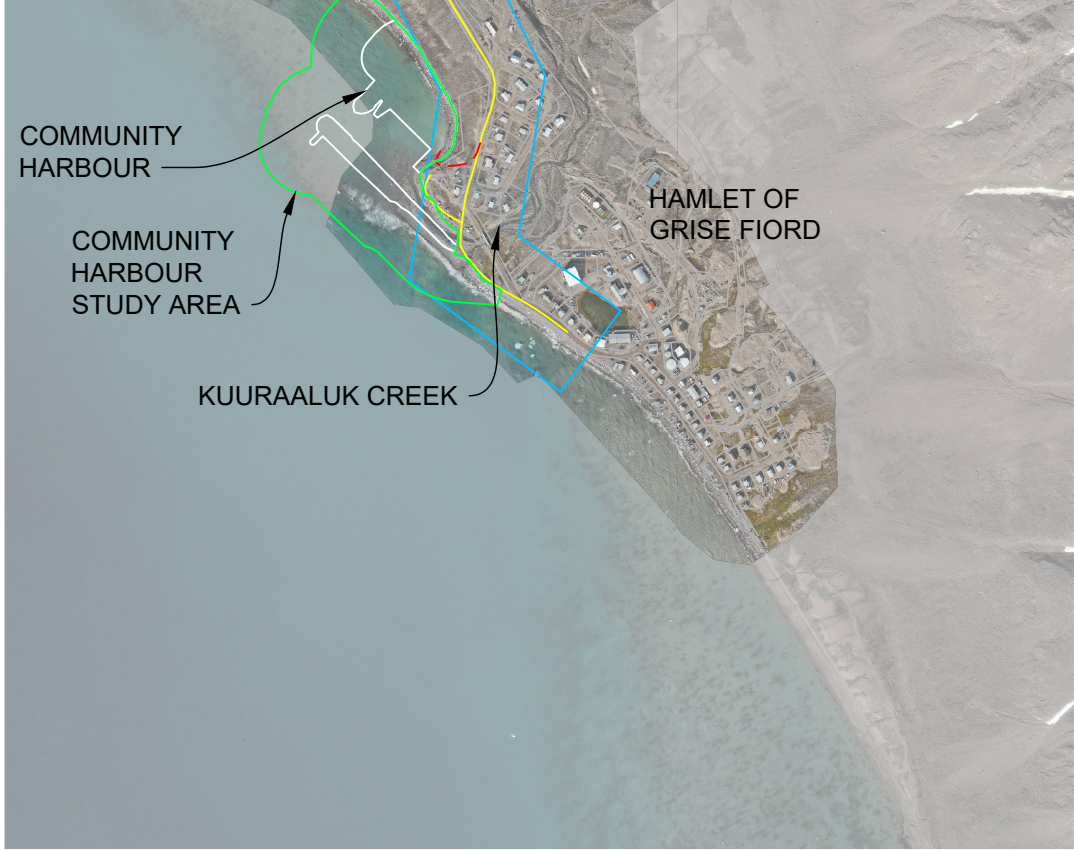




KEY PLAN
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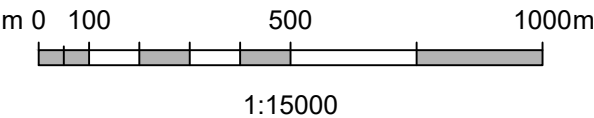
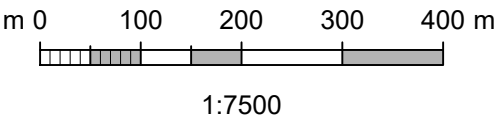
INSET PLAN
1:7500



PLAN
1:15000

LEGEND

- HAUL ROAD ON EXISTING ROAD/TRACK
- ALTERNATE/ADDITIONAL HAUL ROUTE
- COMMUNITY STUDY AREA
- QUARRIES STUDY AREA
- EXISTING ROAD STUDY AREA
- STOCKPILE/LAYDOWN AREA
- QUARRY



GOVERNMENT OF NUNAVUT
GRISE FIORD COMMUNITY
HARBOUR DEVELOPMENT

PROJECT COMPONENTS
(QUARRY, HAUL ROAD, COMMUNITY HARBOUR)



Date: 03-APR-25 Drawn by: JLC Edited by: JLC App'd by: CM



Worley Project Number

317086-54170

DRG No

Figure A-1

REV

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This drawing is prepared for the use of the contractual customer of Worley Canada Services Ltd. and Worley Canada Services Ltd. assumes no liability to any other party for any representations contained in this drawing.

Appendix B: Supporting Tables



Table B-1: Anticipated Schedule for the Project

| Task | Timeline |
|---|---|
| Pre-Construction | |
| • Permitting, baseline surveys and consultations. | Aug-24 to Apr-26 |
| • Schematic design. | Jun-24 to Aug-25 |
| • Geotechnical investigations. | Spring 2025 |
| • Detailed design and construction documents preparation. | Summer 2025 to Dec-25 |
| • Permitting complete. | Mar-26 |
| • Construction contract tender period. | Winter 2025 / Spring 2026 |
| • Award of construction contract. | Spring 2026 |
| Construction | |
| <ul style="list-style-type: none"> • Mobilization of equipment and supplies. • Set up construction camp and equipment maintenance facilities, as required. • Prepare quarry (borrow pits) and commence blasting for aggregate production and stockpile pads. • Set up crusher and complete test runs. | 2026 Construction season (Jun-26 to Oct-26) |
| <ul style="list-style-type: none"> • Prepare quarry (borrow pits) and commence blasting for aggregate production and stockpile pads. • Aggregate production. • Commence placement of breakwater core. • Dredging and onshore disposal. | 2027 Construction season (Jun-27 to Oct-27) |
| <ul style="list-style-type: none"> • Aggregate production. • Breakwater core and armour placement. • Dredging and onshore disposal. • Partial demobilization. | 2028 Construction season (Jun-28 to Oct-28) |
| <ul style="list-style-type: none"> • Complete breakwater armour surfacing. • Electrical installations. • Community Harbour floats, including installation and removal demonstration. • Final grading and compaction. • Remainder of demobilization. | 2029 Construction season (Jun-29 to Oct-29) |
| Operations | |
| • Community harbour operations. | Spring 2030 |

Appendix C: Information Requests



Environmental Protection Operations Directorate
Prairie & Northern Region
5019 52nd Street, 4th Floor
P.O. Box 2310
Yellowknife, NT X1A 2P7

ECCC File: 6200 000 017/005
NIRB File No: 126135/24XN059



May 16, 2025

via email at: info@nirb.ca

Cassel Kapolak
Manager, Public Registry
Nunavut Impact Review Board
29 Mitik Street
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Dear Cassel Kapolak and NIRB:

**RE: 126135/24XN059 – Government of Nunavut – Grise Fiord Community Harbour
Project– Proposal Reviewed**

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Impact Review Board (NIRB) by the Government of Nunavut regarding the above-mentioned proposal.

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate, including climate change, air quality, water quality, biodiversity, environmental emergencies preparedness and responses. This work includes reviewing proponent characterization of environmental effects and proposed mitigation measures. We provide advice to decision-makers regarding a proponent's characterization of environmental effects, the efficacy of their proposed mitigation activities, and may suggest additional mitigation measures. Any comments received from ECCC in this context does not relieve the proponent of its obligations to respect all applicable federal legislation.

The following comments are provided:

1. Topic: Disposal of dredged sediment

References:

- Grise Fiord – Community Harbour, Construction Environmental Management Plan (Dynamic Ocean Consulting Ltd.; March 30, 2025)
 - Table 3-2: Planned Project Construction Activities
 - Section 3.8: Maintenance



- Grise Fiord – Community Harbour, Project Specific Information Requirements Report (Dynamic Ocean Consulting Ltd.; March 26, 2025)
 - Section 7.1.2.4: Fish Habitat (including Marine Vegetation)

Comment

Marine sediment dredging has been identified as a project activity in the Construction Environmental Management Plan. It is planned both during the construction, when approximately 35 000 to 40 000 m³ of sediment will be removed, and during operations when required maintenance includes “*Removal of creek-borne sediments captured in sedimentation stilling basin*” and “*Periodic removal of beach sediments accumulated in the sediment trap located on the south breakwater.*” During construction, dredged sediment will be placed inside a berm to be used as fill for the laydown area, though the volume that can be disposed of in this location was not specified. Mitigation measures in the Project Specific Information Report include “*Dredged sediment will be disposed of at an approved offsite facility.*” No details were found describing the approved offsite facility.

ECCC has identified that saline seepage from the dredged sediment may potentially negatively affect freshwater resources if the sediment is disposed of inland. Additional contaminants may also accumulate in the harbour sediment once the facility is in use, in which case dredged sediment could require special handling.

ECCC Recommendation

ECCC recommends the Proponent develop a plan for the testing and safe disposal of dredged sediment during construction and operations.

2. Topic: Erosion and sedimentation control and monitoring

References:

- Grise Fiord – Community Harbour, Construction Environmental Management Plan (Dynamic Ocean Consulting Ltd.; March 30, 2025)
 - Table 5-8: Sediment and Water Quality
 - Table 5-9: Sediment and Erosion Control
- Grise Fiord – Community Harbour, Project Specific Information Requirements Report (Dynamic Ocean Consulting Ltd.; March 26, 2025)
 - Section 7.1.2.5.3: Water and Sediment Quality Degradation
- Recommendations for the Management of Suspended Solids (SS) During Dredging Activities (Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques and Environment and Climate Change Canada, December 2016)
 - Section 4.3: SS monitoring during dredging work

Comment

Proposed activities such as quarrying and dredging can lead to erosion and sedimentation impacting fresh and marine water quality. The Proponent proposes using sediment and

erosion control (ESC) measures to mitigate degradation of the aquatic environment. The Environmental Monitor (EM) will monitor the effectiveness of ESC measures. There are inconsistencies between the documents on how and when monitoring will occur and measures will be implemented. The Project Specific Information Requirements Report states *“Turbidity monitoring will be implemented.”* The Construction Environmental Management Plan states *“Run-off will be visually monitored by the EM. If there is evidence of effects to the aquatic environment (freshwater, marine), appropriate perimeter controls will be applied to minimize or prevent sediment from entering the watercourse. Should sediment enter watercourses, turbidity monitoring will be undertaken as outlined in Section 5.5.5.”*

ECCC has identified that waiting until there is evidence of effects to the aquatic environment before installing ESC measure or initiating turbidity monitoring may potentially negatively affect water resources. Guidelines on turbidity monitoring are available, such as the Recommendations for the Management of Suspended Solids (SS) During Dredging Activities (MDDELCC & ECCC, 2016).

ECCC Recommendation

ECCC recommends the Proponent include proactive erosion and sediment control and monitoring measures in their management plans.

3. Topic: Nitrogen contaminants from quarried rock

Reference:

- Grise Fiord – Community Harbour, Project Specific Information Requirements Report (Dynamic Ocean Consulting Ltd.; March 26, 2025)
 - Section 6.3.2 Geological Site Conditions

Comment

Rock from four proposed quarries will be used in the construction of the harbour where it has the potential to release contaminants. Acid rock drainage and metal leaching are acknowledged as potential contamination sources in the Project Specific Information Requirements Report and testing is underway to ensure this will not be a problem on site. Another potential contaminant of aggregates freshly produced using a drill and explosives is blast residue, specifically the nitrogen species: ammonia, nitrate and nitrite. These elements are soluble and could be released in the ocean if they are not washed out of the rock prior to placement in the water.

ECCC has identified that residue from explosives has the potential to negatively affect the marine environment.

ECCC Recommendation

ECCC recommends the Proponent manage blast residue on quarried rock used for the harbour construction.

4. Topic: Air emissions from project equipment and diesel exhaust fluids

Reference:

- Grise Fiord – Community Harbour, Construction Environmental Management Plan (Dynamic Ocean Consulting Ltd.; March 30, 2025)

Comment

The Construction Environmental Management Plan includes standard statements of keeping equipment well maintained, to minimize idling, and using a combination of calcium chloride and water for dust suppression in accordance with Government of Nunavut guidelines. Given the duration and close proximity of the proposed work to residences, it is important for equipment to have clean engines to mitigate air emissions. Equipment brought in via sealift should be equipped with engines meeting Tier 4 emission standards, if possible. The work will primarily be performed during the open water season, thus engines meeting Tier 4 emission standards should not be subject to issues that may occur at colder (less than roughly -11C) temperatures. If conditions are cold near the beginning or end of the construction season, there are remedies available to prevent diesel exhaust fluids from freezing including incorporation of an engine warming up time at the beginning of a shift, and storage of DEF in heated facilities onsite.

ECCC Recommendation

ECCC recommends the Proponent plan strategies for the prevention of diesel exhaust fluid from freezing when conditions in the project area reach colder (less than roughly -11C) temperatures.

If you need more information, please contact Jessica Kassar at (867)-222-2036 or Jessica.Kassar@ec.gc.ca.

Sincerely,

Jessica Kassar
Environmental Assessment Officer

cc: Eva Walker, Head, Environmental Assessment North (NT and NU)

Appendix D:References



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