

## Appendix D

Capacity Building for Inuit Environmental Field Assistants –  
Summary of 2019 Program Results Memo



**Memo**

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**To** Oliver Curran and Alex Buchan (TMAC)

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**From** Nicole Bishop (ERM)

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**Cc:** Kent Gustavson (ERM), Nicola Lower (ERM), Greg Sharam (ERM)

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**Date** 17 April 2020

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**Subject** Capacity Building for Inuit Environmental Field Assistants – Summary of 2019 Program Results

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## 1. INTRODUCTION

TMAC's Capacity Building Program for Inuit Environmental Field Assistants was initiated in 2019. ERM developed and implemented this program for TMAC. Both TMAC and ERM are interested in supporting the development of Inuit Environmental Assistants with focused training during employment, to bridge the training gap and increase local capacity with practical coaching and experience in environmental field work. Ultimately, the significant value in the program is its ability to expose Inuit workers to a wide range of potential environmental career opportunities, and generate local technical expertise and leadership. Environmental compliance work that is required on-site at Hope Bay provides a great opportunity to develop and implement a coaching program focused on the interests and training needs of Inuit workers. Such a program would ideally lead to further Inuit employment and business opportunities, and expand the network of skilled resources in the Kitikmeot Region. Activities undertaken this inaugural year included: 1) program planning and development; 2) program implementation; 3) consolidation of 2019 program results; and 4) program planning for 2020.

### 1.1 Program Background

Coaching involves extending traditional training methods to include focus on an individual's needs and accomplishments, close observation, and impartial and non-judgmental feedback on performance. The program should be aligned with Inuit social values, supporting the development of *inuusiq* (life and living) and *isuma* (wisdom).

Although coaching opportunities are provided to environmental field assistants as part of 'on-the-job' training, it becomes more challenging to demonstrate and document that meaningful coaching has occurred. The approach in 2019 focused on establishing a framework for the program that was practical to implement, and allowed for individual development plans tailored to each of the Inuit environmental field assistants. The framework included a before and after benchmarking exercise, and regular progress updates that focused on the positive developments made. At the end of the program, a summary of skills gained and key achievements were documented and made available to the participants. This provides a record that can help provide context to the experience gained, for both the participants and for potential future employers.

## 1.2 Program Objectives

The objectives of the 2019 Capacity Building Program were defined as follows:

- Design a program framework to support capacity building for Inuit employees within the TMAC Environmental Affairs Department and ERM teams;
- Enhance the accountability of environmental monitoring through direct participation of local Inuit employees;
- Provide an avenue for continuation of life-long learning for recently hired graduates of the Nunavut Arctic College Environmental Technology Program offered in Cambridge Bay.
- Provide reporting metrics for TMAC to communicate to internal and external stakeholders; and
- Explore an ERM and/or TMAC partnership with other parties, such as the Kitikmeot Inuit Association (KIA) or the Nunavut Arctic College (NAC), which contributes to the creation of a pool of skilled resources in the Kitikmeot Region.

## 2. PROGRAM PLANNING AND DEVELOPMENT

In the early phases of the 2019 field season, ERM worked with TMAC's Environmental Affairs Department to identify the Inuit environmental field assistants to participate in the program, confirm field work schedule, and clarify roles and responsibilities for implementation of the 2019 Capacity Building Program.

Guidance documents and forms to support implementation of the program were developed, consisting of:

- Environmental Assistant Field Assistant Skills Coaching Review Guide, including forms for Identifying Skills Building Opportunities and Interests, Rotation Learning and Skills Development Plans, and End-of-Rotation Evaluations;
- Field Assistant Coaching Record, Guide for Completing Daily Field Notes; and
- Field Assistant Coaching Record, Daily Field Notes Form.

The developed program guidance documents and forms are provided in Attachment A. Enhancement and or streamlining of these documents can be considered for future years.

## 3. PROGRAM IMPLEMENTATION

A total of four Kitikmeot Inuit participated in the 2019 program:

- Andy Topilak
- Leanne Beaulieu
- Leroy Immingark
- Shannon Evetalegak

Each completed a total of three 2-week rotations (six weeks total) that consisted of:

- An introduction at the start of the season, including review of the Capacity Building Program objectives and design - What is the program? What does the fieldwork entail and where does it fit into the bigger Hope Bay Project picture? Why is it important? What is expected from program participants and what are the expected end results?
- Review of interests, existing skill sets, and field curriculum - What are your learning objectives/career aspirations? What do you want to gain from this experience? What experience, knowledge, and skills do you have to share? What do you need to make this experience a success?
- Participating as a valued team member within the TMAC on site environmental management team, conducting actual work in accordance with the TMAC environmental compliance monitoring program.
- Practical learning experiences tailored to each environmental field assistant's needs/skills and the work requirements on site. Field activities consisted of both work supervised/directed by technical Subject Matter Experts (SMEs)/ TMAC Environment Department staff and independent fieldwork for peer learning.
- Completion of daily Field Assistant Coaching Records to document field experience and technical skills developed.
- Completion of individual weekly or bi-weekly review of work, focused on discussion of the previous period's experiences, current interests, and upcoming field tasks.
- End-of-rotation summary and review of experiences.

#### 4. CONSOLIDATION OF 2019 PROGRAM RESULTS

On December 3, 2019, a one-day workshop was held in Cambridge Bay to review and consolidate the results of the 2019 program. During the workshop, the program objectives and measures of success were reviewed, as were the accomplishments including challenges faced, successes to be celebrated, and lessons learned. Following the 2019 program evaluation, second season program plans were discussed (see Section 5). The end-of-season workshop participants are listed in Table 1.

**Table 1. Program Evaluation Workshop Participants**

Name	Role
Oliver Curran	TMAC – VP Environmental Affairs
Alex Buchan	TMAC – VP Corporate Social Responsibility
Kyle Conway	TMAC – Environmental Superintendent
Shannon Evetalegak	TMAC – Environmental Field Assistant
Andy Topilak	TMAC – Environmental Field Assistant

Name	Role
Nicole Bishop	Project Manager (ERM)
Kent Gustavson	Meeting Facilitator (ERM)
Nicola Lower	Technical Advisor (ERM)

The first year of the program, although modest, realized significant success. Below is a summary of the results from the program evaluation discussion.

#### 4.1 Why Monitor

The workshop included a discussion on why monitoring is carried out. Why is it done? What do we expect to accomplish with monitoring? The purpose of monitoring includes the following:

- Compliance with the environmental approval, and Project Certificate and permit conditions.
- Demonstrate environmental compliance and stewardship to the KIA, Nunavut Impact Review Board (NIRB), Nunavut Water Board (NWB) and other parties.
- Maintain public trust and confidence in operations.
- Check for impacts ('early warning') for adaptive management.
- Minimize risks (environmental, political, economic).
- Maintain public reputation elsewhere in Canada and beyond (not just Nunavut).
- Support an adaptable approach to monitoring activities.
- Support evidence-based perception of the industry by the public (getting beyond values-based).
- Increase experience-based knowledge of the industry by community members.

The suggestion was made to include a discussion of why monitoring is carried out at the start of each rotation. This discussion should be led by the coach and be tailored to be discipline-specific.

#### 4.2 Confirming Program Objectives

In review of the 2019 Capacity Building Program objectives, the following were emphasized:

- Mentoring is an important part of capacity building.
- Engage more people meaningfully in the program, repeatable season-to-season, with a developed program framework that supports this.
- Work with the pipeline of Environmental Technology Program (ETP) students at Nunavut Arctic College (NAC), and develop a relationship with NAC to provide feedback to programming, and bridge the gap between training and job needs.

- Program to contribute to meeting Inuit Impact and Benefit Agreement (IIBA) objectives; and
- Coordinate with the KIA where applicable to leverage off of their initiatives.

The above points are to be incorporated within the program objectives that had been defined for 2019 (Section 1.2) for a revised set of objectives for the next program year.

### 4.3 Review of Measures of Success

The measures of success defined at the initiation of the 2019 Capacity Building Program included:

- Number of participants that finish the program;
- A year after implementation, TMAC has one Inuit environmental technician that has gone through the program;
- The on-the-job performance metrics for workers that participated in the program are higher than before the program;
- Retention and recruitment of Inuit environmental assistants has improved;
- *Inuit Qaujimaqatugangit* (IQ) is incorporated into the understanding of environmental conditions; and
- Feedback received and program adjusted for subsequent years.

During the evaluation workshop, these measures were reviewed. The following measures are to be incorporated within the 2019 program measures of success for a revised set for the next program year:

- Most or all of fieldwork done by Inuit Environmental Field Assistants and Environmental Technicians. Over time, work should be led by Inuit employees instead of SMEs/ consultants wherever possible.
- Proportion of work done independently by Inuit employees (compared to proportion under direct SME/ consultant supervision).
- Ongoing skills development.
- Identification of actions for the following year's program to support increased roles and responsibilities of Inuit employees.
- Career success demonstrated after working for TMAC.

#### **Success Story - Shannon Evetalegak and Leanne Beaulieu**

Shannon worked for two years as an environmental assistant for TMAC at the Hope Bay site. As part of the Capacity Building Program, Shannon was exposed to a number of different technical areas and Subject Matter Experts. Shannon was recently hired as an Administration Assistant for the Nunavut Impact Review Board, and states that her practical experience gained while at TMAC was invaluable in securing this position. Since working with TMAC in the summer of 2019, Leanne Beaulieu obtained a role as an Administrative Assistant with the Nunavut Water Board. Subsequent to this role Leanne obtained a position with SmartIce. TMAC is pleased that both these former employees have been able to gain meaningful employment with other environmental agencies.

#### 4.4 Program Evaluation Results and Opportunities

As discussed in the evaluation, the identified strengths and opportunities of the program include:

- The ability to deliver on the objectives.
- Not an administrative burden.
- Has an engaged team.
- No hierarchy within the team – Inuit workers, consultants, and TMAC supervisors all treated as equals.
- Complements other mentorship and career planning efforts at TMAC.
- Exposes participants to other sectors that support mining (i.e. environmental consultancy).
- Potential to influence education programming.

Opportunities for improvements to the program include:

- Earlier start in the year to engage participants and coaches.
- Increase level of coaching (including need to 'coach the coach'). Better engagement of SMEs as coaches and program advocates.
- Attract Inuit Environment Field Assistants to return the following year.
- Use the information provided through the program to better design and fit work roles for individuals (particularly for the following year).
- Include office-based work in Cambridge Bay as part of the program.
- Include participants in regulatory meetings to shadow SMEs and get experience of the Nunavut regulatory process.
- Resume-writing session at the end of season to consolidate and record key skills and achievements.
- Increase the prestige for the participants that have completed the program: provide a certificate, celebrate and publicize successes and achievements. Build momentum organically so that Inuit want to participate in the program.
- Improved end-of-season transition of participants to off-season work.
- Support for participants to deliver presentations in local schools, colleges, community events to highlight the program and expose others in the community to opportunities in the environmental/ mining industry,
- Networking opportunities to expose the participants to wider employment opportunities in the environmental sector (e.g., consulting, government).

These strengths and opportunities will be incorporated in revisions to the design of the Capacity Building Program.

## 5. PROGRAM PLANNING FOR 2020

The Capacity Building Program will be modified and adjusted based on the ideas presented in this report, to further improve the success of the program. Other ideas that will be incorporated into the program include:

- Prioritize documentation of measures of success, linked to TMAC's corporate objectives, to realize long-term program support.
- Initiate discussions with the Hunters and Trappers Organizations (HTOs) to explore opportunities to become directly involved in related work activities.
- Explore opportunities to involve Inuit participants and SMEs in community tours, and visits with youth to talk about work experiences and opportunities.
- Address the potential challenge that devolution brings to the availability of skilled Inuit workers (i.e., in 3-4 years, there will be a much greater local demand for Inuit workers in government and program management roles).
- Address the challenge of not enough regional NAC ETP graduates to provide the needed number of Inuit workers, and the need to expand the pool of Capacity Building Program participants to others in the community (e.g., active land users).
- Work towards the program becoming year-round, with continuity of participants throughout the year and over multiple years. Expand the program to include the reporting phase of the compliance program (office-based tasks and stakeholder meetings).
- Support the long-term vision that the program will ultimately contribute to the development of community-based monitoring and/or environmental compliance monitoring that is led by an Inuit-owned Kitikmeot-based business.

Work to further advance the Capacity Building Program will refine the program design, coaching methods and materials, expand participation, and train coaches that we anticipate will be part of the program for many years – helping to set up the Capacity Building Program for future success.

## **ATTACHMENT A PROGRAM GUIDANCE DOCUMENTS AND FORMS**

# Hope Bay Environmental Compliance Monitoring: Field Assistant Coaching Program

## Environmental Assistant Field Assistant Skills Coaching Review

### Guide for Completing Review

This review will be completed with Inuit Field Assistants and Program Leads from both ERM and TMAC. Subject Matter Experts (SME) will have access to this information to help establish an effective rotation plan and to complete relevant daily field forms.

#### Documentation of Past Experience and Current Interests

- Program Lead, working through the TMAC Environmental Superintendents, to send the Field Assistants **Table 1** to document past education and experience. Experience can be from life, education, or work. Field Assistants are to check each task/ responsibility where they have experience, and briefly describe the experience where relevant, and/or where they have particular interests.
- Field Assistants to provide completed **Table 1** to the TMAC Environmental Superintendent on-site prior to or at the start of the first rotation.

#### Program Introduction and Assessments

- Program Lead from ERM, with the TMAC Environmental Superintendent on-site, holds introductory meeting with the Field Assistants at the start of the first rotation of the field season.
- Program Lead discusses the Hope Bay Environmental Compliance Monitoring Program. Describe the objectives of the program and how they relate to the environmental commitments and environmental stewardship of the Project.
- Program Lead discusses the Field Assistant Coaching Program. Describe the objectives of the program:
  - a. Theoretical and practical training for Inuit field workers.
  - b. Support capacity-building in the TMAC/ERM Environment team.
  - c. Enhance accountability of environmental monitoring through local participation.
- Review key points of the Field Assistants' education and work experience as provided in **Table 1** by each Field Assistant (see Section A).
- Connect day-to-day experiences, knowledge, and education to skills building opportunities.
- **Identifying Skills Building Opportunities and Interests.** Program Lead will review and review/complete the "Interest" and "Notes" columns of **Table 1** with the Field Assistants.
  - a. Interest: expressions of interest in **Table 1** will help guide coaching opportunities and rotation development plans. No prior experience is required in order for a particular skill to be identified as an opportunity of interest.
  - b. Notes: provide additional information on experience (e.g., duration, equipment used, role). Identify if experience was gained for personal, education, or work activities.

- **Rotation Development Plans and Evaluations.** The Program Lead and Field Assistants, with the assistance of the TMAC Environmental Superintendents, will undertake a development planning and evaluation process for each rotation.
  - a. Prior to the start of each rotation, the TMAC Environmental Superintendent and SMEs will discuss with the Program Lead the discipline-specific tasks/roles that the Field Assistant may have the opportunity to take on during the rotation.
  - b. Program Lead will complete “Rotation Opportunities” columns of **Table 1** with Field Assistants using information from the TMAC Environmental Superintendent and SMEs and experience/interest of assistant. Check all roles/responsibilities that apply for each rotation.
  - c. Program Lead and Field Assistants, with the assistance of TMAC Environmental Superintendents, will work together to develop rotation plan, including goals, roles, and responsibilities for the rotation. A suggested set of questions, to guide the start-of-rotation discussion with the Field Assistants, is provided below. To maximize the content of the discussion, these questions are to be provided to the Field Assistants at least one day prior to the meeting.
  - d. Program Lead will explain daily coaching record forms and incorporate completion of field notes into rotation plan document. SMEs will ensure completion of daily coaching record forms in the field.
  - e. At the end of each rotation, Field Assistants will discuss new knowledge and experience with the Program Lead, with the participation of TMAC Environmental Superintendents. An end-of-rotation evaluation will be completed. Feedback will be solicited from SMEs on the Field Assistants’ progress prior to end-of-rotation discussions. A suggested set of questions, to guide the end-of-rotation discussion with the Field Assistants, is provided below. To maximize the content of the discussion, these questions are to be provided to the Field Assistants at least one day prior to the meeting.
  - f. Repeat for each rotation.
- At the end of Rotation 3, the Program Lead, TMAC Environmental Superintendents and Field Assistants will discuss plans for the future, opportunities, employee retention, etc. This will include a review of the field season, progress, and overall learning and skills development.
- At the end of the season, the Program Lead will ensure that the record of accomplishments for the season as provided in the Rotation Development Plans and Evaluations document is complete for all Field Assistants. This record is to be provided to the Field Assistants and TMAC upon completion.

### Start-of-Rotation Questions

The following is the suggested set of questions to guide the discussion between the Program Lead and the Field Assistants during the end-of-rotation meeting:

1. What specific tasks/roles do you expect you will have the opportunity to take on during the rotation? What is the plan?
2. What are you most interested in learning? What do you have the most questions about?
3. How has the experience been so far this year?
4. What have you learned – what stands out?



### End-of-Rotation Questions

The following is the suggested set of questions to guide the discussion between the Program Lead and the Field Assistants during the end-of-rotation meeting:

1. What were your responsibilities and task completed during the rotation?
2. What was new to you? What new experiences and knowledge did you gain?
3. What do you enjoy the most and why? How has this changed over the summer?
4. Any lessons learned (what could be done better next time, or what worked really well)?



**Table 1: Identifying Skills Building Opportunities and Interests**

Name: \_\_\_\_\_

Roles/Responsibilities	Baseline Experience	Interest (Y/N)	Notes	Rotation Opportunities			Experience (0 – 5)*	
				1	2	3	End of Rotation 2	End of Rotation 3
<b>Field Technician – General</b>								
Assist with field sample collection (any discipline)								
Photo data collection and management								
GPS data collection and management								
Take field notes								
Organize daily field notes and reports								
Label field samples								
Prepare samples for analysis or shipment to laboratory								
Organize field equipment								
Maintain field equipment								
Health and Safety planning and tailgate meetings								
<b>Data Management</b>								
Review daily field notes and data collected for completeness and accuracy								
Record field data in a database								
Enter field reports into a database system								



Roles/Responsibilities	Baseline Experience	Interest (Y/N)	Notes	Rotation Opportunities			Experience (0 – 5)*	
				1	2	3	End of Rotation 2	End of Rotation 3
Maintain electronic database system								
Data verification								
Field and technical reporting								
Regulatory reporting								
Permitting applications								
<b>Health and Safety</b>								
General site rules								
Hazard assessment								
Record safety observations								
Monitor PPE								
Fill in daily field safety paperwork								
Fill in daily vehicle safety form								
Inform field team of safety updates								
Lead daily tailgate meeting								
Liaise with Program Management, to inform of daily field activities								
Fill in incident report forms								
Heat and stress prevention								
Cold weather safety								
Boating safety								
Wildlife awareness								
Safe helicopter procedures								



Roles/Responsibilities	Baseline Experience	Interest (Y/N)	Notes	Rotation Opportunities			Experience (0 – 5)*	
				1	2	3	End of Rotation 2	End of Rotation 3
<b>Field Technician – Technical</b>								
<b><i>Aquatics</i></b>								
Stream sampling – water quality								
Lake sampling – physical limnology (YSI, calibration, measurements, secchi)								
Water quality sampling – GO-FLO, metal clean techniques								
Water quality – sample processing, chain of custody								
Phytoplankton sampling – sampling, filtering chlorophyll a								
Periphyton plates – installation and collection, preservation								
Benthos sampling – Eckman, Ponar, sample handling, preservation								
<b><i>Fisheries</i></b>								
Stream fish habitat assessments								
Lake fish habitat assessments – shoreline surveys								
Lake fish habitat assessments – hydroacoustic surveys (bathymetry, bottom type)								
Electrofishing surveys								
Minnow trap sampling								
Gillnet sampling								



Roles/Responsibilities	Baseline Experience	Interest (Y/N)	Notes	Rotation Opportunities			Experience (0 – 5)*	
				1	2	3	End of Rotation 2	End of Rotation 3
Installation and maintenance of fish fence								
Fish species identification								
Fish handling and biological data collection								
Fish tagging								
Installation, maintenance, data download for fish tagging system								
<b>Hydrology</b>								
Hydrology station installation/ setup								
Hydrology station data download								
Discharge/ flow measurements								
Stream morphology measurements								
Water level surveys/ bathymetry measurements								
Hydrology station demobilization/ winterization								
<b>Wildlife</b>								
Aerial surveys for birds of prey nests								
Aerial surveys for waterfowl								
Ground surveys for waterfowl, songbirds, and birds of prey								
Bird species identification								



Roles/Responsibilities	Baseline Experience	Interest (Y/N)	Notes	Rotation Opportunities			Experience (0 – 5)*	
				1	2	3	End of Rotation 2	End of Rotation 3
Pre-clearing surveys for birds								
Monitoring pit walls for bird of prey nest building								
Constructing and/or maintaining remote camera stands								
Downloading photos from remote cameras								
Identifying wildlife from remote camera data								
Mammal species identification								
Aerial surveys for mammal dens								
Aerial surveys to identify caribou movement corridors								
Collecting mammal hair from hair snag stations								
Pre-clearing surveys for active mammal dens								
Snow track surveys								
Height of land surveys for large mammals								
Navigating a transect line on the ground using a compass and GPS								
Large mammal behaviour monitoring								
<b>Archaeology</b>								



Roles/Responsibilities	Baseline Experience	Interest (Y/N)	Notes	Rotation Opportunities			Experience (0 – 5)*	
				1	2	3	End of Rotation 2	End of Rotation 3
Identifying artifacts (points, flakes/waste material from tool production, worked bone, etc.)								
Identifying features (fire pits, cache pits, stone circles/tent rings, inuksuit, etc.)								
Ground surveys to identify archaeological sites or areas of archaeological potential								
Aerial surveys to identify archaeological sites or areas of archaeological potential								
Measurement of archaeological features using tape and compass to be recorded and mapped								
Preparing detailed site maps recording artifacts, features, and landforms								
Subsurface testing (shovel testing and excavations) and screening soil for artifacts								
Setting up/laying out excavation units								
<b>Regulatory and Community Relations</b>								
Engage with Elders and other knowledge holders								
Attend community and stakeholder meetings								
Assist with meeting coordination								



Roles/Responsibilities	Baseline Experience	Interest (Y/N)	Notes	Rotation Opportunities			Experience (0 – 5)*	
				1	2	3	End of Rotation 2	End of Rotation 3
Assist with taking meeting notes								
Support team members in community and regulatory meetings								
<b>Other</b>								

\*Experience: 0 = no experience; 3 = some experience; 5 = very experienced



## Rotation Development Plans and Evaluations

### Baseline Evaluation and Interests

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**Rotation 1**

**Name:**

**Rotation Start Date:**

**Rotation End Date:**

**Rotation 2: Learning and Skills Development Plan**

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**Rotation 2: End of Rotation Evaluation**

**Knowledge and Experience Gained**

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*Week 1 of rotation:*

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*Week 2 of rotation:*

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**Plan: What Worked, What Did Not Work**

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**Rotation 2**

**Name:**

**Rotation Start Date:**

**Rotation End Date:**

**Rotation 3: Learning and Skills Development Plan**

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**Rotation 3: End of Rotation Evaluation**

**Knowledge and Experience Gained**

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*Week 2 of rotation:*

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**Plan: What Worked, What Did Not Work**

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**Rotation 3**

**Name:**

**Rotation Start Date:**                      **Rotation End Date:**

**Rotation 4: Learning and Skills Development Plan**

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**Rotation 4: End of Rotation Evaluation**

**Knowledge and Experience Gained**

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*Week 2 of rotation:*

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**Plan: What Worked, What Did Not Work**

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**ATTACHMENT B DAILY FIELD FORM GUIDANCE AND FIELD NOTES**



# Hope Bay Environmental Compliance Monitoring

## Field Assistant Coaching Record

### Guide for Completing Daily Field Notes

#### Health and Safety

Record weather and any other safety considerations applicable to the field activities planned (e.g., wildlife observed recently in work area). Note any incidents or near misses that happened on site that should be communicated to TMAC (these should be communicated through the proper channels - not only on this form). Please also include lessons learned; changes made to the program to accommodate health and safety considerations (for example, weather or wildlife), and recommendations for safely conducting future field surveys.

#### Daily Summary

Summarize tasks completed and progress toward overall rotation goals, changes to program made on the ground, any tasks that were not completed as planned and reasons for changes. For down days with no field activities conducted, note this and the reason (e.g., bad weather).

#### Field Activities

Complete Field Activities table. Record activities, such as organizing field equipment, collecting field samples, taking field measurements, downloading data, etc. Activities may be described as individual tasks or as technical survey types. Describe any equipment used and the field data collected (e.g., data type, forms used, digital data, etc.). Where applicable, include corresponding photo numbers and GPS coordinates. If photo and GPS information is recorded on other field forms associated with the activity or survey, indicate where information can be found.

#### Lessons Learned/Recommendations/Follow-up Actions

At the end of each day, please record any key behaviours or actions that positively influenced the daily activities, and/or any recommendations for future programs or follow-up actions required.



Field Lead: \_\_\_\_\_

Field Assistant: \_\_\_\_\_

Field Program: \_\_\_\_\_

Date: \_\_\_\_\_

**Field Activities**

Site	Activity or Technical Survey	Equipment Used	Field Data Collected	Photos (Camera ID and Photo Numbers)	Location (UTM)

# Appendix E

## Status Update with Project Certificate Commitments



## Appendix E. Status Update with Project Certificate Commitments

### APPENDIX E-1. STATUS UPDATE WITH PROJECT CERTIFICATE COMMITMENTS – PHASE 2 FH COMMITMENTS

Agency	NIRB Commitment ID	Commitment	2019 Status
KIA	KIA-FEIS-03	TMAC will speak with the KIA prior to the hearings to come to agreement as to where sedge samples can be collected for baseline purposes. Based on a meeting on April 30, 2018 it was agreed to collect a baseline of 30 samples at Boston and 30 samples at the TIA and additional samples at reference sites. TMAC will produce a sampling plan for review by the KIA prior to construction.	Completed in collaboration with input from the KIA. See the 2018 Wildlife Mitigation and Monitoring Report submitted March 28 2019, Sections 5.2.1 and 5.3.1.
KIA	KIA-FEIS-07	TMAC will abide by occupational health and safety regulations, and provide our workers with a safe work environment, including work camp accommodation areas.	The health and safety of TMAC workers is overseen by the <i>Mines Safety Act</i> and enforced by the Mines Inspector as required. TMAC have an existing Health and Safety Management Plan. The purpose of this plan is to outline Health Safety Management and systems adopted by TMAC and to provide the framework for their implementation. The TMAC Management Team is committed to providing a healthy and safe working environment for all personnel. This fundamental belief is reflected in its requirement for continuous improvement pertaining to health and safety performance.
KIA	KIA-NIRB-09	TMAC commits to conduct vegetation monitoring if the results of dust fall monitoring indicate that there is the potential for effects on tundra vegetation beyond that predicted in the PDA.	No action required at this time.
KIA	KIA-NIRB-10	TMAC commits to including a section in the Wildlife Mitigation and Monitoring Plan (WMMP) on invasive plant species detection and management, and report in the annual compliance report.	The WMMP Plan (December 2019) provides an overview of invasive plant species management and reporting.
KIA	KIA-FEIS-11	TMAC will quantify road traffic as a number of vehicle passes per day throughout a year on the two main segments of the road (Doris to Madrid and Madrid to Boston) and report annually in the WMMP compliance report (i.e., as per response to GN-20).	Monitoring for traffic is included in the WMMP Plan (December 2019) and reported the WMMP Report (2019).
KIA	KIA-FEIS-11	TMAC will consider the traffic levels, observed effects to large mammals, and reflect on adaptive management options in consultation with the IEAC.	To be considered in the future as operational plans at Madrid and or Boston develop.
KIA	KIA-FEIS-12	TMAC commits to conducting additional migration surveys at the proposed wind turbine pad locations prior to construction (for baseline purposes), and during the appropriate survey time period to meet ECCC (2017) guidance and to capture peak migratory activity for raptors, waterbirds, and upland birds.	No turbines will be constructed in 2020.
KIA	KIA-FEIS-12	TMAC commits to designing the transmission line to meet the Edison Institute guidelines for reducing bird mortalities and line strikes.	Noted.
KIA	KIA-FEIS-13	TMAC commits to using the habitat maps that use Terrestrial Ecosystem Mapping for wildlife management purposes and when reporting habitat loss in the annual WMMP report.	The use of Terrestrial Ecosystem maps to report Habitat Loss is included in the WMMP Plan (December 2019) and reported in the WMMP Report (2019).
KIA	KIA-FEIS-14	TMAC will work with DFO, the KIA, and Inuit Environmental Advisory Committee to identify candidate offsetting options with a preference for developing a community-based offsetting program located near Cambridge Bay.	Consultation commenced in 2018 and continued in 2019 with field work being conducted after perspectives and input were gained from the KIA and IEAC. Results of the 2019 field program were reviewed with the IEAC in December 2019.
KIA	KIA-FEIS-14	TMAC will undertake field surveys in summer 2018 to ground-truth preliminary offsetting site options, and refine objectives, constraints, and opportunities associated with each site. These activities will contribute to preliminary gain calculations in support of the development of a Fisheries Offsetting Plan.	Surveys commenced in 2018 and continued in 2019 with field work being conducted after perspectives and input were gained from the KIA and IEAC. Results of the 2019 field program were reviewed with the IEAC in December 2019.
KIA	KIA-FEIS-15	TMAC will apply adaptive management processes during monitoring. Should a high groundwater sensitivity case result in habitat losses that exceed those predicted for the base case, TMAC would apply an offsetting plan (as required by DFO) that is commensurate with these losses.	Offsetting will be accomplished as required by DFO.
KIA	KIA-FEIS-17	TMAC has re-considered applying an SSWQO for arsenic at this early juncture of the Madrid-Boston Project. Instead, it will monitor potential changes to arsenic in the Project lakes through the AEMP.	Arsenic is included as one of the water quality parameters to be monitored in the approved Hope Bay Project: Aquatic Effects Monitoring Plan (the Plan; TMAC 2018). As stated in the Plan (Table 4.4-1), the CCME arsenic guideline of 0.005 mg/L will be used as a water quality benchmark for effects monitoring.
KIA	KIA-NIRB-19	TMAC agrees to add free cyanide which has a CCME water quality guideline of 0.005 mg/L and total cyanide to the AEMP parameter suite for Aimaokatalok Lake and Reference Lake B.	As stated in the approved Hope Bay Project: Aquatic Effects Monitoring Plan (Section 3.2-2; TMAC 2018), total and free cyanide will be monitored in Aimaokatalok Lake and Reference Lake B.
DFO	DFO-3.1.1	TMAC will develop and provide watercourse and site-specific engineering plans to Fisheries and Oceans Canada (DFO), supported by measured or modelled stream flow data prior to construction.	This is on-going as required.

Agency	NIRB Commitment ID	Commitment	2019 Status
DFO	DFO-3.1.1	TMAC will work with DFO, the KIA, and the Inuit Environmental Advisory Committee during the regulatory phase to develop a construction plan for watercourse crossings that will include mitigation measures to reduce impacts to fish and fish habitat during construction.	This is on-going as required.
DFO	DFO-3.1.1	TMAC will work with DFO and abide by any monitoring and reporting requirements of the authorization if and when granted.	Noted.
DFO	DFO-3.1.2	TMAC will monitor water levels and flows in fish bearing lakes and streams that are predicted to be potentially impacted by the Project during mining.	Conducted as part of the approved Hope Bay Project: Aquatic Effects Monitoring Plan (TMAC 2018).
DFO	DFO-3.1.3	TMAC will work with DFO, the KIA, and the Inuit Environmental Advisory Committee during the regulatory phase to gain consensus on acceptable construction monitoring and reporting for freshwater pipeline infrastructure that will include the mitigation measures to be implemented to reduce impacts to fish and fish habitat during construction. TMAC anticipates that these requirements would be included in an authorization from DFO issued prior to construction.	Freshwater pipeline infrastructure as it relates to the Madrid-Boston Project is not yet scheduled.
DFO	DFO-3.2.1	Should the Phase 2 Hope Bay Project be approved, during the regulatory phase TMAC will work with DFO-FPP, KIA, and IEAC to develop and finalize a marine offsetting plan which is acceptable to all parties, and complies with the Fisheries Protection Policy Statement (2013) and the Fisheries Productivity Policy: A Proponent's Guide to Offsetting (November 2013). Representative fish species of each trophic level and their habitat utilization will be analyzed to ensure that all potential residual serious harm to fish and fish habitat that are part of or support commercial, recreational or Aboriginal fisheries as a result of the project are accounted for and adequately offset.	Noted. In consultation with DFO a marine and/or freshwater offset will be achieved. This will be achieved in consultation with KIA and IEAC.
DFO	DFO-3.2.2	As part of the WMMP, TMAC will be preparing maps and descriptions of key bird habitats such as large marine bird colonies and Prince Leopold Island for supply vessel operators. TMAC commits to updating the guidance package for vessel operators to include information on sensitive marine mammal habitats in the Northwest Passage, as described in FEIS Figures 11.2.1 and 11.2.2, and Table 11.2.1. This information will be updated to include data published since the FEIS or provided by DFO [DFO has indicated to TMAC that this commitment does not fully address DFO-3.2.2].	See Hope Bay Project Shipping Management Plan (TMAC, 2020).
DFO	DFO-3.2.2	TMAC also commits to discussing mitigation measures for marine mammals in the Northwest Passage that are common to all vessels in Arctic waters, or as provided in a DFO guidance document for Arctic waters. All mitigation is contingent on vessel safety [DFO has indicated to TMAC that this commitment does not fully address DFO-3.2.2].	Noted.
ECCC	ECCC-4.1.1	TMAC commits that new incinerators will be tested within 6 months of installation. A representative stack test on existing incinerators will be conducted after a significant change to site activities with the potential to change the waste stream or every 3 years, whatever is more frequent.	See Hope Bay Air Quality Management Plan (April 2019), Section 3.4. For most recent results see Appendix F of Q1-Q3 2019 Atmospheric Compliance Monitoring Program Report (Nunami Stantec, 2020).
ECCC	ECCC-4.1.1	In the event TMAC has emission exceedances related to incineration, TMAC will investigate to determine the possible source(s) and potential impacts of the exceedances and adaptive management options will be assessed and applied based on the identified contributing factors.	See Hope Bay Air Quality Management Plan (April 2019), Section 5.0. For current actions see Appendix F of Q1-Q3 2019 Atmospheric Compliance Monitoring Program Report (Nunami Stantec, 2020).
ECCC	ECCC-4.1.3	TMAC commits to implementing continuous NO <sub>2</sub> monitoring during peak construction and during a time in operations that designates lead up to and during peak operations. Monitoring results will be compared to the Canadian Ambient Air Quality Standards (CAAQS). The results of the monitoring program will be included in the air quality portion of the Nunavut Impact Review Board Annual Report. The monitoring plan will be adjusted based on the results and effectiveness of adaptive management with consideration given to the CAAQS. In the event that emissions increase due to a change in operations, TMAC commits to additional NO <sub>2</sub> monitoring.	See Hope Bay Air Quality Management Plan (April 2019), Section 3.3 and B4.
ECCC	ECCC-4.1.4	TMAC commits to update the Air Quality Management plans to provide description of process undertaken to achieve 75% dust management efficiency.	See Hope Bay Air Quality Management Plan (April 2019), Section 2.2.
ECCC	ECCC-4.2.1	TMAC agrees to include a section in the 2018 WMMP listing the species at risk, and relevant mitigation.	A section listing mitigation for species at risk is included in the WMMP Plan (December 2019).
ECCC	ECCC-4.2.2	TMAC agrees to add the post-construction monitoring for the proposed wind turbine to the existing discussions with ECCC and interested parties on site-wide bird monitoring.	This will be done if and when wind turbines are constructed.
ECCC	ECCC-4.2.2	TMAC agrees to investigate and discuss preventative operational mitigation measures for wind turbines during periods of poor visibility at peak bird migration periods.	This will be done if and when wind turbines are constructed.
ECCC	ECCC-4.2.2	TMAC agrees to submit data sets to the centralized bird/bat monitoring database known as the "Wind Energy, Bird and Bat Monitoring Database".	This will be done if and when wind turbines are constructed.

Agency	NIRB Commitment ID	Commitment	2019 Status
ECCC	ECCC-4.2.3	<p>TMAC commits to updating the WMMP Plan to include more detail on the existing monitoring and mitigation for waterbirds in the TIA, including:</p> <ol style="list-style-type: none"> <li>1. TMAC will conduct a baseline survey for waterbirds and shorebirds at the TIA, in consultation with ECCC, to characterize the bird community and use of the TIA.</li> <li>2. TMAC will monitor water quality in the TIA on a regular basis during operations of the Project as per our existing water licence requirements.</li> <li>3. If the baseline survey indicates that birds are using the TIA, TMAC will conduct a toxicological risk assessment in consultation with ECCC.</li> <li>4. If that risk assessment indicates that there is a reasonable risk to birds due to living in the TIA above baseline conditions then TMAC will monitor for ongoing bird usage of the TIA by birds and will engage with the IEAC and ECCC on methods for deterrence of waterbirds.</li> </ol>	Additional baseline surveys for waterbirds and shorebirds at the TIA occurred in 2018 and the results can be found in the 2018 WMMP compliance report Section 3.6 Waterbirds and Shorebirds. The commitments were included in the WMMP Plan (December 2019).
ECCC	ECCC-4.2.4	TMAC is open to having dialog with ECCC on collaboration for common eiders in the Bathurst and Elu Inlets Key Marine Habitat Sites.	Noted.
ECCC	ECCC-4.3.6	TMAC has re-considered its position of adopting a copper SSWQO for the Madrid-Boston Project, and will instead monitor potential changes to copper in the Project lakes through the AEMP.	Copper is included as one of the water quality parameters to be monitored in the approved Hope Bay Project: Aquatic Effects Monitoring Plan (the Plan; TMAC 2018). As stated in the Plan (Table 4.4-1), the CCME hardness-dependent copper guideline will be used as a water quality benchmark for effects monitoring.
ECCC	ECCC-4.3.7	TMAC has re-considered applying an SSWQO for arsenic at this early juncture of the Madrid-Boston Project. Instead, it will monitor potential changes to arsenic in the Project lakes through the AEMP.	Arsenic is included as one of the water quality parameters to be monitored in the approved Hope Bay Project: Aquatic Effects Monitoring Plan (the Plan; TMAC 2018). As stated in the Plan (Table 4.4-1), the CCME arsenic guideline of 0.005 mg/L will be used as a water quality benchmark for effects monitoring.
ECCC	ECCC-4.3.10	TMAC will update the Madrid-Boston AEMP with an Aquatic Response Framework similar to the approach taken for the Doris AEMP. The updated AEMP will be provided to the interested parties prior to the May Final Hearing in Cambridge Bay.	The approved Hope Bay Project: Aquatic Effects Monitoring Plan (TMAC 2018) includes a Response Framework (Section 4) similar to the approach taken for the Doris AEMP.
ECCC	ECCC-4.3.10	TMAC will improve the harmonization between the AEMP and MMER programs in the updated Madrid-Boston AEMP.	The approved Hope Bay Project: Aquatic Effects Monitoring Plan (TMAC 2018) harmonizes the AEMP and MMER programs by incorporating all sampling programs under one cover.
ECCC	ECCC-4.3.10	TMAC will update the Madrid-Boston AEMP with an Aquatic Response Framework with environmental thresholds that trigger further mitigation/information collecting similar to the approach taken for the Doris AEMP.	Similar to the approach taken for the Doris AEMP, the approved Hope Bay Project: Aquatic Effects Monitoring Plan (TMAC 2018) includes a Response Framework (Section 4) that provides environmental thresholds or conditions that must be met for the exceedance of a low action level. If these thresholds are exceeded, further management action would be triggered.
ECCC	ECCC-4.3.11	TMAC will develop an Environmental Management Plan (EMP) prior to the initiation of cargo dock construction activities. The EMP will include, though not exclusively, mitigation measures for managing total suspended solids and turbidity, monitoring procedures detailing sampling locations and frequency, as well as proposed limits and trigger values, in order to satisfy all applicable requirements during construction activities.	The cargo dock was not constructed in 2019 and is not planned to be constructed in 2020.
ECCC	ECCC-4.3.12	TMAC maintains that the updating of predictive models will be used as adaptive management to refine closure requirements or substantial changes to the Project design. TMAC will update near-field mixing modelling and water quality predictions in the receiving environment of Roberts Bay if substantial changes are predicted to the effluent water quality following the re-calibration of the broader Project predictive models. The specific details for the site-wide predictive model re-calibration frequency will be determined in the water licensing stage.	The site-wide water and load balance model was not re-calibrated in 2019; therefore near-field mixing modelling and water quality predictions in the receiving environment of Roberts Bay were not updated.
GN	GN-03	TMAC will continue to support sexual health awareness and education by providing workers access to sexual health information throughout the life of the Project.	This is in place and functioning through TMAC's on-site Physician Assistants.
GN	GN-03	The Proponent shall ensure that all reportable diseases are reported as per the existing regulations. Further the Proponent will develop capacity to reduce public health related diseases that are demonstrated to be linked to camp populations when data is presented to the Proponent regarding regional increases in related diseases.	TMAC maintains communications with the Government of Nunavut Kitikmeot Public Health Officials regarding reportable diseases. To date, there have been no public health related diseases that are demonstrated to be linked to camp populations. In 2019, no reportable diseases were reported at Hope Bay pursuant to the <i>Public Health Act</i> , Reporting and Disease Control Regulations.
GN	GN-03	TMAC will continue to inform workers of the range of health services available on-site throughout the life of the Project.	This is in place and initially done via the site orientation and then on a continuing basis throughout the year during safety presentations.
GN	GN-03	The Proponent shall, on a regular and on-going basis, participate in discussions and dialogue with the GN Department of Health in connection with Project activities, policies, or Project-induced public health issues which may have effect on health and social services facilities, programs and services.	Discussions with Health officials were ongoing in 2019. These included; coordination and liaison with Kitikmeot Health Centers on employee fitness for work examinations and certificates, an introduction and explanation of TMAC's intent to enter into a contract with an online medical service provider (Dialogue) as an employee benefit for Kitikmeot Health Officials, discussions of substance abuse treatment options, treatment progress and fitness for work for TMAC employees with the Department of Family Services and Hamlet of Cambridge Bay Wellness Department.

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GN	GN-04	The Proponent will communicate to the GN available information on major changes to Project-related tax and in the case that any major change occurs, or as needed. This communication will not preclude either party from contacting the other to request an updated estimate of territorial taxes.	No major changes to Project-related tax payments have occurred to date. TMAC continues to annually report payments to the Government of Nunavut and others as part of Government of Canada <i>Extractive Sector Transparency Measures Act</i> compliance: <a href="https://www.nrcan.gc.ca/our-natural-resources/minerals-mining/mining-resources/extractive-sector-transparency-m/links-estma-reports/18198">https://www.nrcan.gc.ca/our-natural-resources/minerals-mining/mining-resources/extractive-sector-transparency-m/links-estma-reports/18198</a> .
GN	GN-05	The Proponent will periodically review the Community Involvement Plan (CIP) and, as required, shall update the CIP to ensure that it reflects current and relevant stakeholders, as well as effective communication and engagement methods with stakeholders throughout the life of the Project.	Noted. No update required at this time.
GN	GN-06	The Proponent continues to be an active member in the Hope Bay Socio-Economic Working Group. Invited members of this Working Group shall include the Proponent, the Government of Nunavut, Indigenous and Northern Affairs Canada, and the Kitikmeot Inuit Association. Working Group members may invite new participants to participate, on an as-needed basis. The central focus of the Hope Bay Socio-Economic Working Group shall be on collaborating to ensure that the Hope Bay Socio-Economic Monitoring Plan provides for appropriate Project-specific socio-economic effects monitoring as required throughout the life of the Project. The Hope Bay Socio-Economic Monitoring Plan shall apply to the Project as described in the FEIS. The Proponent, reflecting the input of the Hope Bay Socio-Economic Working Group, shall produce an annual Hope Bay Socio-Economic Monitoring Plan report.	Noted. An updated SEMP is planned to be submitted for review to the Hope Bay Socio-Economic Monitoring Working Group in May of 2020. Finalizing the report will take place once comments from regulators are received.
GN	GN-06	Within one (1) year of the issuance of a Project Certificate, the Proponent shall submit an updated Hope Bay Socio-Economic Monitoring Plan (SEMP) to the Hope Bay Socio-Economic Working Group for review. The SEMP shall identify updates, changes, and any amendments made to the Terms of Reference for the Hope Bay Socio-Economic Working Group. Updates to the SEMP shall reflect the changing circumstances as outlined in the Hope Bay Final Environmental Impact Statement and Final Hearing Report. Any changes as agreed to by the Hope Bay Socio-Economic Working Group shall be submitted to the Nunavut Impact Review Board.	An updated SEMP is planned to be submitted for review to the Hope Bay Socio-Economic Monitoring Working Group in May of 2020. Finalizing the report will take place once comments from regulators are received.
GN	GN-07 & GN-11	The Proponent shall reach out to third parties to deliver financial management programs such as financial literacy, financial planning, and personal budgeting. TMAC will approach Nunavut Housing Corporation and GN Department of Family Services (or other GN departments as appropriate) to solicit input and/or participate in the delivery of programming to Project workers.	TMAC continued to evaluate options for the delivery of financial management programs to Hope Bay workers in 2019, given the lack of interest in taking advantage of previous course offerings.
GN	GN-07	The Proponent will track statistics regarding the delivery of the financial management programming. The Proponent will share relevant data concerning the implementation and success of training and education programs during the Kitikmeot SEMC annual meeting, so long as these data are consistent with and not limited by obligations under the Hope Bay IIBA.	Delivery of financial management programming is included as an indicator in the updated Hope Bay Project SEMP. Specific metrics to be tracked are: 1. Number of workers who attended financial management training. 2. Number of Inuit workers who attended financial management training. Data was reporting in the 2018 SEMP report and discussed with the Hope Bay SEM Working Group and the Kitikmeot Socio-Economic Monitoring Committee. This will be the continued practice going forward.
GN	GN-08	The Proponent is strongly encouraged to submit staff schedule forecasts to the Nunavut Impact Review Board and to the Government of Nunavut six (6) months prior to each phase of the Project (construction, operations, closure). Staff schedule forecasts should be inclusive of: • Title and number of positions required by department or work area; • Potential start dates; • The level of education required (with reference to the specific positions); and • Whether on-the-job or other forms of training and certification will be required (with reference to specific positions).	TMAC has provided and will continue on an annual basis to provide the GN Department of Family Services with a detailed listing of positions required. This information includes: position title, number of positions (by title), employment type (seasonal or permanent), education requirements, qualification requirements, and whether or not the training/education is available in Nunavut. The latest version of this listing was developed in August 2019, and delivered to Government of Nunavut officials the same month, and then provided to community level workers such as High School Principals, teachers and Adult Educators in October 2019. TMAC is a full participant in the Mining North Works initiative of the NWT/Nunavut Chamber of Mines. This initiative is meant to provide the Nunavut public with information on mining jobs, qualifications, role models, careers and training. TMAC information is integrated into Mining North Works paper publications and online materials: <a href="http://miningnorthworks.com/">http://miningnorthworks.com/</a> . Mining North Works publications have been made available to all Kitikmeot high schools and Community Learning Centers.
GN	GN-08	In order to ensure alignment with necessary skill-sets needed to work at the Project, the Proponent will consult the Government of Nunavut's Career Development Division during the development of staff schedule forecasts. A new schedule shall be submitted following any significant deviation from original predictions.	TMAC has provided and will continue on an annual basis to provide the GN Department of Family Services with a detailed listing of positions required. This information includes: position title, number of positions (by title), employment type (seasonal or permanent), education requirements, qualification requirements, and whether or not the training/education is available in Nunavut. In particular in November 2019, TMAC representatives met with the Government of Nunavut Family Services Director of Career Development and his staff in order to discuss GN mine training initiatives, and Hope Bay training priorities. During this meeting, Hope Bay labour force data was shared with the GN. On a quarterly basis, TMAC has participated in 2019 in the Kitikmeot Inuit Association Employment and Training Stakeholder Working Group where Hope Bay labour force data and trends are shared. It is common for representatives of various applicable GN departments to also participate in this Stakeholder Working Group and receive these updates.

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GN	GN-08	The Proponent's Human Resources shall make best efforts to collaborate with the Government of Nunavut's Career Development Officer, Regional Manager of Career Development, and Director of Career Development. Semi-annual calls, at minimum, should be initiated by the Proponent with these Government of Nunavut representatives regarding: <ul style="list-style-type: none"> <li>Employee recruitment and retention issues.</li> <li>Internal and/or partnered training and development of employees.</li> <li>Long-term labour market plans to facilitate training in communities.</li> </ul>	Noted. TMAC remains open to communications with the Government of Nunavut's two Kitikmeot based Career Development Officers, the Regional Manager of Career Development, and Director of Career Development. Regional Family Services officials are also on an email distribution of Nunavut project stakeholders and have received regular project updates in 2019 and also been provided the opportunity to share information on their programs and services.
GN	GN-09	The Proponent commits to ongoing discussion with the GN Department of Family Services and other stakeholders regarding training opportunities and requirements to fill the skills-gap of the Kitikmeot workforce.	In 2019, TMAC conducted a negotiation session with the Kitikmeot Inuit Association and the Government of Nunavut towards a 3 party Memorandum of Understanding (MOU) that would commit the parties to work together on a quarterly basis, towards priority issues such as employment and training. It is anticipated that this MOU will be concluded and in operation in 2020. Meetings and discussions undertaken under the MOU would include the Departments of Education, Family Services and Nunavut Arctic College amongst others.
GN	GN-10	If the Government of Nunavut and the Nunavut Housing Corporation develop an anonymous voluntary housing survey, the Proponent shall make the survey available to Nunavummiut site personnel and the Proponent will return any completed surveys to the Government of Nunavut.	Noted. TMAC remains committed to administering a housing status survey to its Nunavummiut employees, should one be developed. TMAC responded to a draft Nunavut Housing Corporation survey of mine workers that was being proposed to be delivered to Baffinland and Agnico-Eagle employees, and eventually at Hope Bay in May 2019. No feedback was received from survey comments.
GN	GN-11	The Proponent will support the communication to Project workers of education, training materials, and programs (i.e. homeownership) developed by the Nunavut Housing Corporation that focuses on enhancing employee understanding and access to housing options in the Project LSA. The Proponent shall reach out to third parties to deliver financial management programs such as financial literacy, financial planning, and personal budgeting. TMAC will approach Nunavut Housing Corporation and GN Department of Family Services (or other GN departments as appropriate) to solicit input and/or participate in the delivery of programming to Project workers.	TMAC continues to re-evaluate the approach to delivery of the financial management program for 2019 to encourage participation by its workers in the future given the previous lack of interest.
GN	GN-13	TMAC has already compared updated modelling results against the CCME CAAQS. The GN suggested commitment is not required. If the GN accepts the NO <sub>2</sub> CAAQS, TMAC will implement a program of continuous NO <sub>2</sub> monitoring to ensure adequate follow up of the proposed mitigation to meet the hourly average CAAQS for NO <sub>2</sub> .	Noted.
GN	GN-14	a. TMAC will conduct noise measurements during quarry blasts at 2.8 and 4 km to confirm predictions. b. TMAC will confirm that the overpressure value of 96 L <sub>peak</sub> dBZ will not be exceeded at 2,800 m from the location of the blast. c. TMAC will conduct a behaviour monitoring program during blasts if caribou are observed beyond 2.8 km to evaluate how caribou respond to blasts. d. TMAC will include methods in WMMP to determine potential calving ground overlap with the Project.	This was included in the WMMP Plan (December 2019).
GN	GN-15	TMAC commits to an update of the Non-hazardous Waste Management Plan to include appropriate layout drawings of landfill facilities once Issue for Construction designs have been prepared, and 60 days prior to operation of the proposed landfill.	Landfill is not yet constructed.
GN	GN-16	TMAC commits to an update of the Hazardous Waste Management Plan to: <ul style="list-style-type: none"> <li>Remove reference to disposal of hazardous waste within the Doris Tailings Impoundment Area.</li> <li>Remove reference to disposal of bottom ash generated from open burning and incineration in the underground mines.</li> </ul> TMAC also clarifies that disposal of hydrocarbon contaminated material and plastic bags from prepackaged explosives containers within the underground mines is currently an approved practice under the existing Doris License and TMAC does not intend to change this. This disposal strategy will therefore remain in the Hazardous Waste Management Plan.	See Hope Bay Project Hazardous Waste Management Plan (March, 2020).
GN	GN-17	The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include rare plant mitigation and an annual summary of potential habitat loss when construction occurs in new areas.	Mitigation for rare plants is included in the revised WMMP Plan (December 2019) and loss of special landscape features that may support rare species was reported in the WMMP Report (2019).
GN	GN-18(i)	The Proponent shall conduct analyses of collar data to quantify the zone-of-influence of Project components on caribou and Project effects on caribou movements during the operating phase of the Project. The study area for these analyses shall encompass the existing Doris North mining operation, Madrid North and South sites, Boston site and all connecting roads. The Proponent shall collect such additional caribou collar data, over and above those made available to the Proponent by the Government of Nunavut, as are necessary to operationalize this term and condition with reasonable statistical power. This may be achieved through collaboration with the GN or other parties.	This analysis was completed and is included in the WMMP Report (2019).

Agency	NIRB Commitment ID	Commitment	2019 Status
GN	GN-18(ii)	The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following: <ul style="list-style-type: none"> <li>The Project's effects on caribou movements will be monitored at a local scale using behavioral observations from height-of-land surveys and a snow track study.</li> <li>The design of these monitoring programs will be developed in consultation with the Government of Nunavut and the Inuit Environmental Advisory Committee, will use methods supported by peer reviewed literature and will consider statistical power.</li> <li>The snow track study will be designed to estimate or index the permeability of Project roads to caribou. These programs may be discontinued after definitive results are obtained or if statistical power cannot be achieved by means of reasonable sampling design and effort, as determined by NIRB.</li> </ul>	Behaviour observations and snow track surveys were included in the revised WMMP Plan (December 2019).
GN	GN-19	Following construction, the Proponent shall undertake a survey to create a geospatial model of the final structural attributes including height and slope, of the Project's roads along the length of each road segment. The data from this survey should be used to generate maps showing road heights and shoulder slopes for inclusion in the annual report. This model should also be made available for all interveners for further assessment of potential road effects and for wildlife effects monitoring.	The AWR has not been constructed.
GN	GN-19	The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following: Periodically during the Project, analyses of caribou road crossing behaviour will be conducted to examine crossing locations in relation to wildlife crossing structures. These analyses will use available data from collars, snow track surveys, and height-of-land monitoring. Results will be presented in annual reports.	This was included in the revised WMMP Plan (December 2019).
GN	GN-19	The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following: TMAC will implement a program to monitor and report snow bank heights along Project roads. This program will allow estimation of mean height and variance at a series of designated monitoring locations that are representative of snow conditions along the roads. This program will continue until operational snow management is characterized.	This was included in the revised WMMP Plan (December 2019).
GN	GN-19	The power transmission line remains an outstanding issue between TMAC and the Government of Nunavut	This has been resolved as per Term and Condition 25 of Project Certificate No. 009
GN	GN-20	The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following: A traffic monitoring and reporting program will be implemented to accurately estimate the rates and composition of all traffic using each of the Project's road segments (as identified in FEIS Vol. 3, Table 4.5-1) annually and seasonally. This information shall be used for comparison with the traffic rates predicted in the FEIS and to support Project monitoring for wildlife effects.	This was included in the revised WMMP Plan (December 2019).
GN	GN-20	The peak traffic rates as presented in table 4.5-1 in FEIS Vol. 3 (or those identified by the Proponent, during the Project's NIRB review) shall be established as Project monitoring thresholds. If the annual or seasonal traffic rates estimated from Project monitoring exceed the established thresholds by greater than 25% in two consecutive monitoring periods, TMAC shall conduct a revised assessment of the potential impacts of this excess traffic on wildlife. The monitoring data, analysis of effects shall be submitted in the annual WMMP compliance report for NIRB consideration.	This was included in the revised WMMP Plan (December 2019).
GN	GN-21	The Proponent shall conduct analyses of collar data to quantify the zone-of-influence of Project components on caribou and Project effects on caribou movements during the operating phase of the Project. The study area for these analyses shall encompass the existing Doris North mining operation, Madrid North and South sites, Boston site and all connecting roads. The Proponent shall collect such additional caribou collar data, over and above those made available to the Proponent by the Government of Nunavut, as are necessary to operationalize this term and condition with reasonable statistical power. This may be achieved through collaboration with the GN or other parties.	This is part of the WMMP.
GN	GN-22	The caribou-protection measure of a 1.5 km setback remains an outstanding issue between TMAC and the Government of Nunavut.	This item was resolved with Project Certificate No. 009 term and condition 22 "In collaboration with the Government of Nunavut, the Proponent shall specify within its Wildlife Mitigation and Monitoring Plan specific mitigation measures, trigger distances, and group size thresholds for the protection of caribou and muskox in proximity to project activities (e.g., blasting, heavy truck traffic, and aircraft)." The information relevant to this commitment was included in the revised WMMP Plan (December 2019).

Agency	NIRB Commitment ID	Commitment	2019 Status
GN	GN-23	<p>The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following:</p> <p>Prior to construction activities during denning season, surveys will be conducted to locate active big game dens within 1 km of the Project. Survey design will be informed by maps of high quality denning habitat that were included within the FEIS.</p> <p>If an active big game den is located within 1 km of construction activities, construction activities shall not begin until a den-site protection plan is developed in consultation with a Government of Nunavut Regional Manager of Wildlife. The plan will consider a 1 km no blasting or drilling buffer, 750 m for operation of heavy equipment, and 250 m for light vehicle traffic. Exceptions to these minimums may be implemented as part of a den-specific management plan and may require a permit from the Government of Nunavut under sections 74 of the Nunavut <i>Wildlife Act</i>.</p> <p>During construction and operations, regular ground-based observations will be conducted regularly during the denning season to identify active big game den sites within 1 km of the Project that may require mitigation.</p> <p>All active big game dens within 1 km shall have a den-specific management plan, developed in consultation with the GN Department of Environment (FEIS Annex Vol.8-3, s.2.4, Table 2.4-1).</p> <p>A den-specific management plan for big game may include mitigation measures such as increased monitoring (to assess responses to disturbance and den success), speed limit reductions and posting of signs in proximity to the den, driver notifications, and avoidance during denning or den emergence.</p>	This was included in the revised WMMP Plan (December 2019).
GN	GN-24(i)	<p>The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following:</p> <p>Should construction of new areas occur in the raptor breeding period, TMAC will conduct a pre-construction survey of potential cliff-nesting habitat within 2 km of the Proposed Phase 2 development prior to construction to ensure sites have been accounted for from previous surveys.</p>	This was included in the revised WMMP Plan (December 2019).
GN	GN-24(ii)	<p>The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following:</p> <p>a. If an active cliff nest is located within 1 km of planned construction activities, construction activities shall not begin until 1) a nest-site protection plan is developed in consultation with the Regional Manager of Wildlife (Government of Nunavut, Department of Environment). The plan will consider a 1 km no blasting or drilling buffer, 750 m for operation of heavy equipment, and 250 m for light vehicle traffic. Exceptions to these minimums may be implemented as part of a nest-specific management plan and may require a permit from the Government of Nunavut under sections 72 and 74 of the Nunavut <i>Wildlife Act</i>.</p> <p>b. Where a raptor builds a nest on project infrastructure such as a service building, the recommended cessation of construction activities within a no-disturbance buffer does not apply but development of a nest-specific management plan is recommended.</p>	This was included in the revised WMMP Plan (December 2019).
GN	GN-24(iii)	<p>The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following:</p> <p>a. If an active cliff nest is located within 1 km of planned construction activities, construction activities shall not begin until 1) a nest-site protection plan is developed in consultation with the Regional Manager of Wildlife (Government of Nunavut, Department of Environment). The plan will consider a 1 km no blasting or drilling buffer, 750 m for operation of heavy equipment, and 250 m for light vehicle traffic. Exceptions to these minimums may be implemented as part of a nest-specific management plan and may require a permit from the Government of Nunavut under sections 72 and 74 of the Nunavut <i>Wildlife Act</i>.</p> <p>b. Where a raptor builds a nest on project infrastructure such as a service building, the recommended cessation of construction activities within a no-disturbance buffer does not apply but development of a nest-specific management plan is recommended.</p>	This was included in the revised WMMP Plan (December 2019).
GN	GN-24(iv)	<p>The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following:</p> <p>Throughout the life of the Project, all potential nest sites within 1 km of project activities will have a nest-specific management plan, developed in consultation with the GN Department of Environment.</p>	This was included in the revised WMMP Plan (December 2019).
GN	GN-25(i)	<p>The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following:</p> <p>Fixed-wing landings/take-offs at Project airstrips will be recorded. These data will be reported in the annual WMMP compliance report. The reported information will be used to verify EIS predictions regarding flight frequency.</p>	This was included in the revised WMMP Plan (December 2019).

Agency	NIRB Commitment ID	Commitment	2019 Status
GN	GN-25(ii)	The Wildlife Mitigation and Monitoring Plan (WMMP) will be revised to include the following: Helicopter flight logs will be collected and will be reported in the annual WMMP compliance report. The reported information will be used to: 1. Verify the accuracy of EIS predictions about the frequency and distribution of helicopter traffic. 2. Verify assumptions about helicopter traffic that were made in the noise modeling study. 3. Facilitate other Project effects monitoring programs such as wildlife ZOI and movement studies.	This was included in the revised WMMP Plan (December 2019).
GN	GN-25(iii)	The Project's Wildlife Mitigation and Monitoring Plan shall be revised to clarify the following: That the 600m horizontal avoidance buffer for operation of helicopters near caribou also applies to helicopters on the ground such that engine starts and takeoffs of helicopters will be suspended when caribou are observed within the buffer distance, subject to the operational safety discretion of the pilot.	This was included in the revised WMMP Plan (December 2019).
GN	GN-26	The WMMP will be revised to clarify that driver rules used for caribou (as detailed in the WMMP; Figure 2.2-1 Driver Mitigation for Caribou) will be applied to muskoxen.	This was included in the revised WMMP Plan (December 2019).
HC	HC-4.1.4	NO <sub>2</sub> mitigation: Wind power generation may be pursued, which would be expected to reduce NO <sub>x</sub> emissions due to reduced power plant operation.	This is not a commitment.
HC	HC-4.1.4	NO <sub>2</sub> mitigation: Consideration of taller stacks at the Madrid North and Boston power plants to promote greater dispersion.	Noted.
HC	HC-4.1.4	NO <sub>2</sub> mitigation: Consideration for additional NO <sub>x</sub> emissions reductions during detailed Project design. These may include energy efficiency methodologies, allowances in design for inclusion of future control technologies in power plant design, etc.	Noted.
TC	TC-4.1.1	TMAC will comply with the regulations under Subpart 7 (307.01) of the Canadian Aviation Regulations (CARs).	Noted.
INAC	INAC-FC#3	TMAC will install and use silt curtains during in-water construction of the cargo dock as stipulated in FEIS volume 5, Section 10.5.3.2 unless directed otherwise by DFO during the regulatory phase.	Cargo dock will not be constructed in 2019.
INAC	INAC-FC#5	TMAC will, as part of the next formal update to the project closure and reclamation plan, post issuance of the Water Licenses, include pertinent information and recommendations from Newmont and KIA's active revegetation trials at Hope Bay. This site specific information will inform how revegetation can be applied, as appropriate, at closure.	Noted. The next version of this plan is expected in 2023.
INAC	INAC-FC#7	TMAC shall collaborate with the Hope Bay Socio-Economic Working Group (SEWG) to ensure that the Hope Bay Socio-Economic Monitoring Program provides for appropriate Project-specific socio-economic effects monitoring of the potential effect of competition for labour. Specific indicator(s) will be developed as agreed to by the SEWG, and considering the input of the Kitikmeot Socio-Economic Monitoring Committee, to track and report on the extent to which Project-related competition for labour may impact Kitikmeot communities. Activities related to monitoring and development of mitigation, including use and disclosure of information and data, will adhere to the SEWG Terms of Reference.	An updated SEMP is planned to be submitted for review to the Hope Bay Socio-Economic Monitoring Working Group in May of 2020. Finalizing the report will take place once comments from regulators are received.
INAC	INAC-FC#8	TMAC shall collaborate with the Hope Bay Socio-Economic Working Group (SEWG) to ensure that the Hope Bay Socio-Economic Monitoring Program provides for appropriate Project-specific socio-economic effects monitoring of Project procurement of local and regional businesses and competition for access to local and regional businesses by existing customers. Specific indicator(s) will be developed as agreed to by the SEWG, and considering the input of the Kitikmeot Socio-Economic Monitoring Committee, to track and report on the extent to which the Project procures from Kitikmeot businesses and the extent to which existing customers are unable to access goods and services, consistent with the provisions of the Hope Bay Inuit Impact and Benefit Agreement (IIBA). Activities related to monitoring and development of mitigation, including use and disclosure of information and data, will adhere to the SEWG Terms of Reference.	An updated SEMP is planned to be submitted for review to the Hope Bay Socio-Economic Monitoring Working Group in May of 2020. Finalizing the report will take place once comments from regulators are received.

APPENDIX E-2. STATUS UPDATE WITH PROJECT CERTIFICATE COMMITMENTS – 2016 COMMITMENTS

GN Comment Number	Original GN Proposed Recommendation	TMAC Response	GN & TMAC Proposed Commitment	2019 Status Update
2 (Technical Comments)	GN needs reassurance that details of training and education program implementation will be made publically available.	Subject to approval by the KIA, to share relevant data (quantitative and qualitative) concerning the implementation and success of training and education programs, with other socio-economic monitoring initiatives including the DNSEMC.	Subject to approval by the KIA, the Proponent commits to share relevant data (quantitative and qualitative) concerning the implementation and success of training and education programs, with other socio-economic monitoring initiatives including the DNSEMC.	See updated SEMP is planned to be submitted for review to the Hope Bay Socio-Economic Monitoring Working Group in May of 2020.
7 (Technical Comments)	Add to the terms of reference: 7) The DNSEMC, in collaboration with the K-SEMC, will begin socio-economic planning no less than two years before the expected date of final closure. Planning will detail specific measures that may mitigate, at least to some extent, the potential for negative effects as a result of Project closure. 8) In the event of premature (temporary or final) closure of the Project, the DNSEMC will continue all socio-economic monitoring responsibilities and agree on appropriate measures, to ensure that the impacts of premature closure are managed as best as possible.	Added mitigation in the form of a conceptual Workforce Transition Strategy that would be implemented at Project Closure. The Strategy will be provided to the NIRB as part of the Human Resource Strategy (synonymous with the Human Resource Plan and Wellness Strategy) and may be revisited from time to time during the Project to review and revised on an as needed basis. In collaboration with the K-SEMC, begin socio-economic planning no less than two years before the expected date of final closure. Planning will detail specific measures that may mitigate, at least to some extent, the potential for negative effects as a result of Project closure. In collaboration with the K-SEMC, in the event of premature (temporary or final) closure of the Project, continue all socio-economic monitoring responsibilities for no less than three (3) years following premature closure and agree on appropriate measures, to ensure that the impacts of premature closure are managed to the greatest reasonable extent.	The Proponent commits to added mitigation in the form of a conceptual Workforce Transition Strategy that would be implemented at Project Closure. The Strategy will be provided to the NIRB as part of the Human Resource Strategy (synonymous with the Human Resource Plan and Wellness Strategy) and may be revisited from time to time during the Project to review and revised on an as needed basis. In collaboration with the K-SEMC, the Proponent will begin socio-economic planning no less than two years before the expected date of final closure. Planning will detail specific measures that may mitigate, at least to some extent, the potential for negative effects as a result of Project closure. In collaboration with the K-SEMC, in the event of premature (temporary or final) closure of the Project, the Proponent will continue all socio-economic monitoring responsibilities for no less than three (3) years following premature closure and agree on appropriate measures, to ensure that the impacts of premature closure are managed to the greatest reasonable extent.	Final closure not expected to occur in 2020.
8 (Technical Comments)	Add to the terms of reference: 6) The monitoring program and this Terms of Reference shall apply to any project phase or development granted pursuant to Article 12, Part 8 of the Nunavut Land Claims Agreement and any additional Project Certificate Terms and Conditions established as a result.	Agrees that Project activities associated with the Doris Amendment will be subject to the existing Doris North Socio-Economic Monitoring Program (SEMP).Intends to continue the Doris North SEMP as one program, considering all Project activities, and complementing existing monitoring and reporting. The monitoring program and this Terms of Reference shall apply to any project phase or development granted pursuant to Article 12, Part 8 of the Nunavut Land Claims Agreement and any additional Project Certificate Terms and Conditions established as a result.	The Proponent agrees that Project activities associated with the Doris Amendment will be subject to the existing Doris North Socio-Economic Monitoring Program (SEMP).The Proponent intends to continue the Doris North SEMP as one program, considering all Project activities, and complementing existing monitoring and reporting. The monitoring program and this Terms of Reference shall apply to any project phase or development granted pursuant to Article 12, Part 8 of the Nunavut Land Claims Agreement and any additional Project Certificate Terms and Conditions established as a result.	Noted.
2	The Proponent shall commit to communicate to the Government of Nunavut (GN) major decisions which may impact territorial tax revenues and respond to requests for information and input from GN finance officials regarding taxes. This will involve developing a protocol with the GN's Department of Finance that sees the parties convene on a pre-planned, periodic basis to exchange such relevant financial information as can be disclosed. The meetings should occur at the technical level and their timing should coincide with the Proponent's budgeting cycle including the annual budget (Q4 of each year) and the five-year life of mine planning cycle (Q3 of each year). The protocol will establish who is to be involved, when meetings will take place, and what topics will be discussed. The planned meetings will not preclude either party from contacting the other as necessary.	TMAC does not agree with the recommendations or proposed commitment as currently stated. The sharing of any Project information with the GN, such as business operations and financial information, must be mindful of and consistent with all regulatory requirements and legal obligations. Because of this, TMAC is restricted on the content and timing of the release of information to the GN. This includes, for example, details on tax payments from financial forecasts. TMAC is not prepared to make a specific commitment at this time regarding the type, content and timing of the business information that it will be able to share with the GN. TMAC is prepared to work cooperatively with the GN, outside of the NIRB process, regarding the sharing of Project information, to the extent possible, to assist governments in the preparation of their fiscal outlooks and tax forecasts.	The Proponent is prepared to communicate with the GN, outside of the NIRB process, regarding the sharing of Project information, to the extent possible, to assist governments in the preparation of their annual fiscal outlooks and tax forecasts.	See updated SEMP is planned to be submitted for review to the Hope Bay Socio-Economic Monitoring Working Group in May of 2020.

GN Comment Number	Original GN Proposed Recommendation	TMAC Response	GN & TMAC Proposed Commitment	2019 Status Update
3	<p>The Proponent commits to collaborate with Department of Education headquarters staff on any initiatives relating to youth employment in their Human Resources Plan, and other programs that may relate to education in order to identify common points of interest and action, strategic planning that would help integrate the activity into the existing education program, and communication and delivery plans.</p> <p>A formal Memorandum of Understanding is not currently being considered for development, but both parties should remain open to the possibility of entering into one.</p>	<p>TMAC agrees to communicate with the Department of Education headquarters staff on any planned initiatives relating to youth employment in their Human Resources Plan, and other programs that may relate to education, in order to identify common points of interest and action that would help integrate the Proponent's activities into the existing education program, and communication and delivery plans.</p> <p>Further, any communication or collaboration between TMAC and the Department of Education is to be consistent with the commitments contained in the 2015 Hope Bay Inuit Impact and Benefit Agreement (IIBA), including those commitments related to training and education, and recognize that, as defined by the IIBA, training and educational support is a shared responsibility between TMAC and the KIA.</p>	<p>To the extent such communications would be consistent with and would not contravene the 2015 Hope Bay Inuit Impact and Benefit Agreement (IIBA) the Proponent agrees to communicate with the Department of Education headquarters staff on initiatives relating to youth employment in their Human Resources Plan, and other programs that may relate to education, in order to assist the Department of Education to identify common points of interest and action that would help integrate the Proponent's activities into the existing Department of Education program, and communication and delivery plans.</p>	<p>See updated SEMP is planned to be submitted for review to the Hope Bay Socio-Economic Monitoring Working Group in May of 2020.</p>