



2022-2023 OSM WORK PLAN APPLICATION

This form will be used to assess the merits of the proposed work plan and its fit with the Oil Sands Monitoring (OSM) Program mandate and strategic priorities. Applicants must complete the form in its entirety. Applicants that fail to use this form and complete all sections in the timeframe will not be considered.

OSM Work Plan Submission Deadline: The deadline for submission of proposed work plans is October 5, 2021 at 4:30 PM Mountain Standard time.	October 5, 2021 4:30 PM MST
Decision Notification	Mid to Late January 2022

The OSM Program is governed by the Freedom of Information and Protection of Privacy Act (FOIP) and may be required to disclose information received under this Application, or other information delivered to the OSM Program in relation to a Project, when an access request is made by anyone in the public. Applicants are encouraged to familiarize themselves with FOIP. All work plans are public documents.

WORK PLAN COMPLETION

Please **Enable Macros** on the form when prompted.

The applicant is required to provide information in sufficient detail to allow the evaluation team to assess the work plan. Please follow the requirements/instructions carefully while at the same time being concise in substantiating the project's merits. The OSM Program is not responsible for the costs incurred by the applicant in the preparation and submission of any proposed work plan.

When working on this form, please maintain Macros compatibility by always saving your draft and your final submission as a **Microsoft Word Macro-Enabled Document**, failure to do so will result in loss of form functionality. This form was created using Microsoft word 2016 on a PC and may not have functionality on other versions of Microsoft on PC or MACS.

All work plans under the OSM Program require either a government lead or a government coordinator. This will ensure that the financial tables (for Alberta Environment and Parks & Environment and Climate Change Canada) are completed accurately for work plan consideration. **However, if an Indigenous community, environmental nongovernmental organization or any other external partner is completing a work plan proposal, they would only complete the grant or contract budget component of the **Human Resources & Financials Section** for their project. The government coordinator within Alberta Environment & Parks would be responsible for completing the remaining components of the Human Resources and Financial Section of this Work Plan Application, as they are responsible for contract and grant facilitation of successful submissions. All other sections outside of **Human Resources & Financials Section** of this work plan proposal are to be completed in full by all applicants.**

The OSM Program recognizes that majority of work planning submissions are a result of joint effort and monitoring expertise. Should the applicant wish to submit supplemental materials in addition to their application additional resources are available in the Work Planning Form and Distribution Package, accessible here: [Work Planning Form and Distribution Package](#)

Should you have any **questions** about completing this work planning form or uploading your final submission documents, please send all inquiries by email to: OSM.Info@gov.ab.ca.



WORK PLAN SUBMISSION

Upon completion of this application, please submit the appropriately named work plan (**Microsoft Word Macro-Enabled Document**) and all supporting documents to the link provided below. Failure to follow the naming convention provided may result in oversight of your application.

Please upload (by drag and dropping) the **WORK PLAN SUBMISSION & ALL SUPPORTING DOCUMENTS** here:

[WORK PLAN SUBMISSION LINK \(CTRL+CLICK HERE\)](#)

Please use the following file naming convention when submitting your **WORK PLAN**:

202223_wkpln_WorkPlanTitle_ProjectLeadLastNameFirstName

Example:

202223_wkpln_OilSandsResiduesinFishTissue_SmithJoe

If applicable, please use the following file naming convention when submitting your **supplementary or supporting files**. Please number them according to the guidance and examples provided:

202223_sup##_WorkPlanTitle_ProjectLeadLastNameFirstName

Examples:

202223_sup01_OilSandsResiduesinFishTissue_SmithJoe

202223_sup02_OilSandsResiduesinFishTissue_SmithJoe

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. .
. .

202223_sup10_OilSandsResiduesinFishTissue_SmithJoe

Do not resave your work plan or documents under any other naming conventions. If you need to make revisions and resubmit before the work planning deadline of October 5, 2021, **DO NOT** rename your submission. When resubmitting, simply resubmit with the exact naming convention so that it replaces the original submission. **DO NOT** add any additional components such as versioning or dates to the file naming convention. Please direct any questions regarding the submission or naming of submissions to OSM.Info@gov.ab.ca.



WORK PLAN APPLICATION

PROJECT INFORMATION	
Project Title:	Métis Fish Health Assessment: Exploring Fish Health Indicators through a Métis Lens
Lead Applicant, Organization, or Community:	Métis Nation of Alberta
Work Plan Identifier Number: <i>If this is an on-going project please fill the identifier number for 20/21 fiscal by adjusting the last four digits: Example: D-1-2020 would become D-1-2022</i>	Click or tap here to enter text.
Project Region(s):	Oil Sands Region
Project Start Year: <i>First year funding under the OSM program was received for this project (if applicable)</i>	2021
Project End Year: <i>Last year funding under the OSM program is requested Example: 2022</i>	2023
Total 2022/23 Project Budget: <i>For the 2022/23 fiscal year</i>	\$143,691.00
Requested OSM Program Funding: <i>For the 2022/23 fiscal year</i>	\$143,691.00
Project Type:	Community Based Monitoring
Project Theme:	Surface Water
Anticipated Total Duration of Projects (Core and Focused Study (3 years))	Year 3
Current Year	Focused Study: Choose an item.
	Core Monitoring: Choose an item.

CONTACT INFORMATION	
Lead Applicant/ Principal Investigator: <i>Every work plan application requires one lead applicant. This lead is accountable for the entire work plan and all deliverables.</i>	James Glasier PhD
Job Title:	Fish and Wildlife Specialist
Organization:	Métis Nation of Alberta
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Phone:	780-455-2200
Email:	jglasier@metis.org

PROJECT SUMMARY

Should your application be successful, The OSM Program reserves the right to publish this work plan application. Please check the box below to acknowledge you have read and understand:

I acknowledge and understand

In the space below please provide a summary (300 words max) of the proposed project that includes a brief overview of the project drivers and objectives, the proposed approach/methodology, project deliverables, and how the project will deliver to the OSM Program objectives. The summary should be written in plain language.

The Métis Nation of Alberta (MNA) proposes to study fish health in waterbodies and waterways within the oil sands regions (OSR) using community-based research. Previous engagements with MNA citizens from the OSR (MNA Regions 1, 2, 5, and 6) highlighted key environmental concerns, including declines in fish populations, fish health, and water quality. To address citizen concerns, the MNA launched projects in 2021 focused on community monitoring of fish health, investigating Métis Traditional Knowledge (TK) regarding fish health through interviews with knowledge holders, and the development of a tool (rubric) to share Métis TK with citizens. Using both the TK fish health assessment rubric and western science assessment methods, citizens will be encouraged to act as Community Monitors by filling out data sheets when they harvest and submitting them to the MNA. All materials produced will be tested and reviewed at community ice fishing camps and through online engagements with MNA harvesters and Knowledge Holders. After citizens begin their monitoring activities, data submitted to the MNA will be analyzed and monitored for indications of poor fish health and detected declines in fish health for citizen monitored water bodies. A need for further investigation at the local level may be warranted if poor or declining fish health is detected in individual waterbodies or waterways. This project is important as it aims to address the concerns of MNA citizens regarding surface water features in the OSR, provides a mechanism for the transfer of TK within the MNA community, builds monitoring capacity within the MNA community, empowers citizens to monitor resources they rely on, allows the MNA to detect changes in fish health and identify areas for future monitoring. The MNA is seeking support to complete the development of the Métis TK fish assessment rubric and to continue their fish health community-based monitoring program during the 2021-2022 fiscal year.

1.0 Merits of the Work Plan

All work plans under the OSM Program must serve the mandate of the program by determining (1) if changes in indicators are occurring in the oil sands region and (2) if the changes are caused by oil sands development activities and (3) the contribution in the context of cumulative effects. In the space below please provide information on the following:

- Describe the key drivers for the project identifying linkages to the EEM framework particularly as it relates to surveillance, confirmation and limits of change (as per OC approved Key Questions).
- Explain the knowledge gap as it relates to the EEM framework that is being addressed along with the context and scope of the problem as well as the Source – pathway – Receptor Conceptual Models .
- Describe how the project meets the mandate of the OSM Program
- Discuss results of previous monitoring/studies/development and what has been achieved to date.

The proposed monitoring activities relate to the EEM framework by contributing to surveillance for the surface water category, focused on water and biological quality. The MNA's proposed monitoring activities are intended to collect data to be used as baseline conditions, from which subsequent years of data will be used to detect changes in fish health in surface water sources (waterbodies and waterways) throughout the OSR.

Within the OSM program, some projects examined fish health indicators from TK perspectives (Brunet et al., 2020; Hick and Scrimgeour, 2020), usually as a part of larger monitoring efforts. However, little has been done to examine fish health indicators specific to Métis citizens of Alberta. Métis citizens have a long-standing relationship with Alberta fisheries, ranging in utilization for subsistence to commercial fishing. The MNA proposes to continue a project which seeks to gather TK from Métis harvesters and Knowledge Holders and share it with the MNA community in an accessible format for which citizens can use to assess their harvests, providing utilization to enhance food security and monitoring of the resource.

The MNA launched a fish health monitoring pilot study in 2020, examining fish sampled from lakes across Alberta using a combination traditional means (gill nets) and modern harvesting techniques (rod and reel). Lakes were chosen to represent different MNA regions and harvesting areas. Fish caught via gill net were measured for species, length, weight, stomach contents, visually inspected for signs of poor health or abnormalities. The harvesters involved with this study were allowed to keep the lethally sampled fish to be used as food within their family units. The harvesters were then asked to fill out a palatability survey after eating fish. This project provided insight into the fish health of the sampled lakes and provided an opportunity for the MNA to develop and test fish health and palatability survey questions, which has been used to inform the MNA's recently launched (August 2021) fish health community monitoring program. The MNA also engaged MNA citizens via an online survey in 2020 which focused on fishing activities and fish health. The survey results provided further insight into the fish knowledge of MNA citizens and created a list of harvesters and Knowledge Holders who volunteered to engage with the MNA on future projects. This list has also been used to target communications and recruit community monitors for the MNA's fish health community monitor program.

The work the MNA intends to accomplish in 2021 includes four main objectives:

1. Develop and launch a community-based monitoring program which enables MNA citizens to report on fishing effort, concerns, fish health and the palatability of harvested fish.
2. Hold interviews with Métis Elders, Knowledge Holders, and harvesters regarding fish health to explore and record traditional fish health indicators used by Métis citizens.
3. Summarize the Métis traditional health indicator data and use it to develop a rubric the community can use to assess fish they catch, facilitating the transfer of knowledge.
4. Hold two ice fishing camps to test the fish health assessment rubric and to train/recruit more fish health community monitors, while also encouraging the passing of knowledge to youth and community.

The work the MNA proposes in this application intends to build and expand on the objectives noted above during the 2022-2023 fiscal year. Additional support will allow the MNA to continue to recruit fish health community monitors and collect data regarding fish populations, health, and palatability, which will contribute

to the development of waterbody/waterway specific baseline monitoring data. This support will also allow the MNA to collect feedback, refine, and re-test the Métis TK-focused fish health assessment rubric.

Past studies have shown that community knowledge can enhance fisheries management. Cold Lake First Nations conducted a study to explore local concerns regarding fish consumption safety and population health, including a cultural consensus study of community members and a multi-evidence-based approach to examining fish health and toxicology (Brunet et al. 2020). This study highlights the value of TK and local perspectives, as this knowledge was often found to be a better indicator of ecosystem state than knowledge from intermittent sampling using western science methods, filling in knowledge gaps not captured by ongoing scientific monitoring. Similarly, our proposed project will capture and make Métis TK and Métis perspectives available to contribute to fisheries management within the OSR.

This project meets the OSM program mandate by empowering Métis citizens to monitor and report on fish health as an indicator species, which may be used to detect changes in water quality, pollution, or other potential impacts from oilsands development activities. Monitoring activities will be directed at waterbodies and waterways within the OSR. While the community-based monitoring program proposed will not investigate the cause of the stressors directly, it will establish baseline data and detect changes in fish health over time. Ongoing community monitoring is expected to continue using the resources developed during this project beyond the two-year period, and the resources may contribute to future core and focused studies through the OSM program.

Literature Cited:

Brunet et al. 2020. Towards indigenous community-led monitoring of fish in the oil sands region of Canada: Lessons at the intersection of cultural consensus and fish science. *The Extractive Industries and Society* Volume 7, Issue 4, November 2020, 1319-1329.

Hicks, K., and Scrimgeour, G. 2020. Synthesis report of the enhanced monitoring program on the Lower Athabasca River 2019-2020. Government of Alberta, Ministry of Environment and Parks. ISBN 978-1-4601-4838-9. Available at: <https://open.alberta.ca/publications/9781460148389>.

2.0 Objectives of the Work Plan

List in point form the Objectives of the 2022/23 work plan below

1. Expand and improve the MNA's fish health community monitor program which allows MNA citizens harvesting in the OSR (MNA Regions 1, 2, 5, and 6) to share data regarding fishing activities, fish health, and fish palatability with the MNA.
 - a. Continue to expand monitoring to include more frequent observations of individual waterways and waterbodies and to collect data from waterways and water bodies which had not yet been reported on by community monitors. Increased observations and greater geographical coverage of community monitor activities will enhance the MNA's ability to detect changes or concerns across the OSR.
2. Continue to develop, distribute, and refine resources which enable Métis citizens to act as Community Monitors to assess and report on fish health for waterbodies and waterways in which they harvest.
 - a. Distribute the Métis fish health assessment rubric developed from (2021-2022) for citizen use, collect feedback, and refine as needed.
 - b. Update the community monitor report forms based on comments and feedback from citizens participating in the program.
 - c. Utilize community ice-fishing events and online engagements with MNA harvesters and Knowledge Holders to recruit community monitors, bring awareness to and the share fish health assessment rubric, and gather feedback from the community.
3. Build internal and community capacity to ensure the success of the MNA's community-based monitoring project.
 - a. Train MNA citizens to act as Community Monitors using a braided (TK/Western Science) approach to

assessing fish health.

b. Continue to train MNA staff members on software (ArcGIS, QSR Nvivo) to facilitate data management, analysis, and reporting of fish health data.

4. Facilitate the transmission and protection of TK within the Métis community

a. Hold two annual community ice fishing camps to provide in-person instruction on the use of the resources created through this project, during which MNA citizens can gather, experience fishing, and share their knowledge.

b. Record Métis TK regarding fish health from MNA harvesters and Knowledge Holders to create resources to be shared with MNA citizens.

c. Ensure the continued protection of generated data and shared TK through data entry into the MNA internal monitoring and TK Environment Systems Solutions (ESS) database.

5. Promote the fish health monitoring program among the MNA community through the production of media content, such as website posts, social media posts, and newsletter updates.

a. Inform/educate citizens and encourage citizen participation in the monitoring program through online and regional advertising and communication.

6. Report back to the community on the project progress and results through annual reporting, social media posts, and website content.

3.0 Scope

Evaluation of Scope Criteria (Information Box Only- No action required)

Your workplan will be evaluated against the criteria below. A successful workplan would:

- be in scope of the OSM Program (e.g., regional boundaries, specific to oil sands development, within boundaries of the Oil Sands Environmental Monitoring Program Regulation)
- integrate western science with Indigenous Community-Based Monitoring
- addresses the EEM framework particularly as it relates to surveillance, confirmation and limits of change as per approved Key Questions.

have an experimental design that addresses the Pressure/Stressor, Pathway/Exposure, Response continuum

- produce data/knowledge aligned with OSM Program requirements and is working with Service Alberta
- uses Standard Operating Procedures/ Best Management Practices/ Standard Methods including for Indigenous Community-Based Monitoring

3.1 Sub Theme

Please select from the dropdown menu below the theme(s) your monitoring work plan relates to:

Surface Water

3.2 Core Monitoring or Focused study

Please select from the dropdown menu below if the monitoring in the work plan is "core monitoring" and/or a "focused study". Core monitoring are long term monitoring programs that have been in operation for at least 3 years, have been previously designated by the OSM program as core, and will continue to operate into the future. Focused studies are short term projects 1-2 years that address a specific emerging issue. For the purposes of 2022/23 work planning all Community Based Monitoring Projects are Focused Studies.

Focused Study (includes Community-Based Monitoring)

3.3 Sub Theme Key Questions

Please select from the dropdown menus below the sub-theme(s) your monitoring work plan relates to and address the Key Questions:

3.3.1 Surface Water Theme

3.3.1.1. Sub Themes:

Biological

3.4.1.2 Surface Water Key Questions

Explain how your surface water monitoring program addresses the key questions below.

1. Are changes occurring in water quality, biological health (e.g., benthos, fish) and/or water quantity/flows, to what degree are changes attributable to oil sands activities, and what is the contribution in the context of cumulative effects?

Previous research on fish health within the OSR found that TK was often a better indicator of ecosystem state than intermittent sampling using western science methods, whereby TK could fill in knowledge gaps not captured by ongoing scientific monitoring. Harvesters have been found to observe declines in fish health, water quality, water quantity, and ice thickness throughout their lifetime, which can be used as indicators for the health of aquatic ecosystems. Changes detected from these TK indicators may result from the cumulative effects of environmental stressors related to oil sands activities. Therefore, investigating Métis TK related to fish health and establishing a community-based monitoring program, in which more Métis citizens will be trained to assess indicators and report to the MNA, may play an important role in detecting impacts of oil sands activities on waterbodies and waterways in the OSR.

2. Are changes in water quality and/or water quantity and/or biological health informing Indigenous key questions and concerns?

Métis have the inherent right to harvest, protected by section 35 of the constitution, and fishing is an important cultural tradition. Changes in abundance, health, or toxicity of fish can directly impact Métis health and well-being. Previous research by the MNA has shown that 63% of Métis environmental concerns within OSR MNA Regions are related to water and fish.

This monitoring project has been designed to collect fish health data from Métis Community Monitors to detect potential changes in fish populations, fish health, and palatability. Instances detected of reduced catch per unit effort and poor or declining fish health and palatability will be flagged for potential future focused study to investigate causes. Additionally, this project will help inform the Métis community about fish populations and fish health in the waterbodies and waterways from which they harvest through both citizen education and project reporting.

3. Are data produced following OSM Program requirements and provided into the OSM Program data management system?

All scientific data will be provided to the OSM data management system, however, the MNA reserves the right to withhold TK that is deemed sensitive by Métis Knowledge Holders, Elders, and harvesters.

4. Do methodologies use relevant Standard Operating Procedures/ Best Management Practices/ Standard Methods?

Western science methodologies taught to Métis Community Monitors will be similar to those conducted by other fish studies within the OSM program (McMaster et al. 2018; Brunet et al. 2020), which includes measuring fish weight, length, sex, and visual health. Sampling protocol materials developed will draw on the Manual of

Instructions – Fall Walleye Index Netting (Morgan, 2002) developed by the Percid Community Synthesis Diagnostics and Sampling Standards Working Group.
 There is currently no Standard Operating Procedure (SOP) established for the OSM program which relates to the work the MNA has proposed for this project. The MNA has been in discussions with the Facilitation Centre to develop an SOP to share with other OSM communities interested in pursuing similar projects.

Literature Cited:

Brunet et al. 2020. Towards indigenous community-led monitoring of fish in the oil sands region of Canada: Lessons at the intersection of cultural consensus and fish science. *The Extractive Industries and Society* Volume 7, Issue 4, November 2020, 1319-1329.

Morgan, G.E. 2002. Manual of instructions — fall walleye index netting (FWIN). Percid community synthesis, diagnostics and sampling standards working group. Edited by Ontario Ministry of Natural Resources, Peterborough, pp. 20.

5. How does the monitoring identify integration amongst projects, themes or with communities?

Indigenous Knowledge, as defined by the Canadian Government’s Tri-council Policy Statement for Ethical Research Involving Humans (Chapter 9, pg. 113) (also cited in this document in section 13.0) is defined as being knowledge held by the Aboriginal peoples, specific to place, rooted in multi-generational experiences, and determined by the communities’ land, environment, region, culture, and language. While there are ongoing fish health projects being conducted within the OSM program to investigate fish health, there are many Indigenous communities within the OSM areas; each with their own TK. Aside from work being conducted by the MNA related to this project during the current (2021-2022) fiscal year, Métis fish health indicators have not yet been explored for the collective MNA community (MNA regions 1, 2, 5, and 6), and thus their knowledge and perspectives cannot be considered and incorporated into fisheries management. This proposed project seeks to rectify this situation by continuing to develop a fish health assessment rubric based on Métis TK and develop materials to support Community Monitors in monitoring fish populations and fish health in the OSR.

The tools and methodologies developed through this project may also contribute to core monitoring studies of the OSM program. Métis perspectives and TK explored through this project may share commonalities with other Indigenous communities within the OSR, creating an opportunity to share TK-based fish health assessment data across communities to contribute to a comprehensive dataset for monitoring. Additionally, the employment of consistent western scientific methods, such as those described in the Manual of Instructions – Fall Walleye Index Netting (Morgan, 2002), in community monitor reports would also allow for the development of a comprehensive dataset across all OSR communities, regardless of potential differences in TK indicators. The MNA has engaged in discussions with the Facilitation Centre regarding the development of a SOP describing this project’s methods for the OSM program.

Literature Cited:

Morgan, G.E. 2002. Manual of instructions — fall walleye index netting (FWIN). Percid community synthesis, diagnostics and sampling standards working group. Edited by Ontario Ministry of Natural Resources, Peterborough, pp. 20.

6. 7.6. Where does the monitoring fit on the conceptual model within the EEM framework for the theme area and relative to the conceptual model for the OSM Program theme area? How will this work advance understanding transition towards of the conceptual model EEM framework?

The monitoring intended to occur from the proposed project fits into the EEM framework by contributing to surveillance for the surface water category, focused on water and biological quality. Our monitoring work is

intended to collect data to be used as baseline conditions and to detect changes in fish populations, health, and palatability in surface water sources throughout the OSR. This work will advance understanding transition towards the conceptual model of the EEM framework by providing further insight into Culturally Relevant Indicators for assessing fish health from Métis perspectives. As previously noted (See 5.), each Indigenous community has unique TK. Culturally relevant indicators and receptors considered within the conceptual model should not be limited to communities who have previously engaged in work related to fish health.

7. Is the work plan contributing to Programmatic State of Environment Reporting?

This monitoring project will directly compliment other OSM fish monitoring projects (McMaster et al. 2018; Brunet et al. 2020) by investigating TK perspectives on fish populations, health, and palatability, and continuing to develop and implement the MNA's community monitoring program. Detections of poor catch per unit effort, fish health, and fish palatability through monitoring activities may be relevant to other OSM fish health/water quality related programs. Using resources and methodologies developed through this program, the process for setting up other OSM Community Monitor programs would be expedited.

Literature Cited:

Brunet et al. 2020. Towards indigenous community-led monitoring of fish in the oil sands region of Canada: Lessons at the intersection of cultural consensus and fish science. *The Extractive Industries and Society* Volume 7, Issue 4, November 2020, 1319-1329.

McMaster et al. 2018. Aquatic ecosystem health assessment of the Athabasca River mainstem and tributaries using fish health and fish and invertebrate toxicological testing. *Oil Sands Monitoring Program Technical Report Series No. 1.8*, pp. 76.



3.3.2 Groundwater Theme

3.3.2.1 Sub Themes:

Choose an item.

3.3.2.2 Groundwater Key Questions

Explain how your groundwater monitoring program addresses the key questions below.

1. Are changes occurring in groundwater quality and/or quantity, to what degree are changes attributable to oil sands activities, are changes affecting other ecosystems, and what is the contribution in the context of cumulative effects?

Click or tap here to enter text.

2. Are changes in groundwater quality and/or quantity informing Indigenous key questions and concerns Indigenous concerns and health?

Click or tap here to enter text.

3. Are data produced following OSM Program requirements and provided into the OSM Program data management system?

Click or tap here to enter text.

4. Do methodologies use relevant Standard Operating Procedures/ Best Management Practices/ Standard Methods?

Click or tap here to enter text.

5. How does the monitoring identify integration amongst projects, themes or with communities?

Click or tap here to enter text.

6. Where does the monitoring fit within the EEM framework and relative to the theme area? How will this work advance transition towards the EEM framework?

Click or tap here to enter text.

7. Where does the monitoring fit on the conceptual model for the theme area and relative to the conceptual model for the OSM Program? How will this work advance understanding of the conceptual model?

Click or tap here to enter text.

8. Is the work plan contributing to Programmatic State of Environment Reporting?

Click or tap here to enter text.

3.3.3 Wetlands Theme

3.3.3.1 Sub Themes:

Choose an item.

3.3.3.2 Wetland - Key Questions

Explain how your wetland monitoring program addresses the key questions below.

1. Are changes occurring in wetlands due to contaminants and hydrological processes, to what degree are changes attributable to oil sands activities, and what is the contribution in the context of cumulative effects?

Click or tap here to enter text.

2. Are changes in wetlands informing Indigenous key questions and concerns?

Click or tap here to enter text.

3. Are data produced following OSM Program requirements and provided into the OSM Program data management system?

Click or tap here to enter text.

4. Do methodologies use relevant Standard Operating Procedures/ Best Management Practices/ Standard Methods?

Click or tap here to enter text.

5. How does the monitoring identify integration amongst projects, themes or with communities?

Click or tap here to enter text.

6. Where does the monitoring fit within the EEM framework and relative to the theme area? How will this work advance transition towards the EEM framework?

Click or tap here to enter text.

7. Where does the monitoring fit on the conceptual model for the theme area and relative to the conceptual model for the OSM Program? How will this work advance understanding of the conceptual model?

Click or tap here to enter text.

8. Is the work plan contributing to Programmatic State of Environment Reporting?

Click or tap here to enter text.



3.3.4 Air Theme

3.3.4.1 Sub Themes:

Choose an item.

3.3.4.2 Air & Deposition - Key Questions

Explain how your air & deposition monitoring program addresses the key questions below.

1. Are changes occurring in air quality, to what degree are changes attributable to oil sands emissions, and what is the contribution in the context of cumulative effects?

Click or tap here to enter text.

2. Are changes informing Indigenous key questions and concerns?

Click or tap here to enter text.

3. Are data produced following OSM Program requirements and provided into the OSM Program data management system?

Click or tap here to enter text.

4. Do methodologies use relevant Standard Operating Procedures/ Best Management Practices/ Standard Methods?

Click or tap here to enter text.

5. How does the monitoring identify integration amongst projects, themes or with communities?

Click or tap here to enter text.

6. Where does the monitoring fit within the EEM framework and relative to the theme area? How will this work advance transition towards the EEM framework?

Click or tap here to enter text.

7. Where does the monitoring fit on the conceptual model for the theme area and relative to the conceptual model for the OSM Program? How will this work advance understanding of the conceptual model?

Click or tap here to enter text.

8. Is the work plan contributing to Programmatic State of Environment Reporting? (Answer Box)

Click or tap here to enter text.



3.3.5 Terrestrial Biology Theme

3.3.5.1 Sub Themes:

Choose an item.

3.3.5.2 Terrestrial Biology - Key Questions

Explain how your terrestrial biological monitoring program addresses the key questions below.

1. Are changes occurring in terrestrial ecosystems due to contaminants and landscape alteration, to what degree are changes attributable to oil sands activities, and what is the contribution in the context of cumulative effects?

Click or tap here to enter text.

2. Are changes in terrestrial ecosystems informing Indigenous key questions and concerns?

Click or tap here to enter text.

3. Are data produced following OSM Program requirements and provided into the OSM Program data management system?

Click or tap here to enter text.

4. Do methodologies use relevant Standard Operating Procedures/ Best Management Practices/ Standard Methods?

Click or tap here to enter text.

5. How does the monitoring identify integration amongst projects, themes or with communities?

Click or tap here to enter text.

6. Where does the monitoring fit within the EEM framework and relative to the theme area? How will this work advance transition towards the EEM framework?

Click or tap here to enter text.

7. Where does the monitoring fit on the conceptual model for the theme area and relative to the conceptual model for the OSM Program? How will this work advance understanding of the conceptual model?

Click or tap here to enter text.

8. Is the work plan contributing to Programmatic State of Environment Reporting?

Click or tap here to enter text.



3.3.6 Cross-Cutting Across Theme Areas

3.3.6.1 Sub Themes:

Choose an item.

If "Other" was selected from the drop down list above please describe below:

Click or tap here to enter text.

3.3.6.2 Cross-Cutting - Key Questions

Explain how your cross-cutting monitoring program addresses the key questions below.

1. Is data produced following OSM Program requirements and provided into the OSM Program data management system?

Click or tap here to enter text.

2. Do methodologies use relevant Standard Operating Procedures/ Best Management Practices/ Standard Methods?

Click or tap here to enter text.

3. How does the monitoring identify integration amongst projects, themes or with communities?

Click or tap here to enter text.

4. Where does the monitoring fit within the EEM framework and relative to the theme area? How will this work advance transition towards the EEM framework?

Click or tap here to enter text.

5. Where does the monitoring fit on the conceptual model for the theme area and relative to the conceptual model for the OSM Program? How will this work advance understanding of the conceptual model?

Click or tap here to enter text.

6. Is the work plan contributing to Programmatic State of Environment Reporting?

Click or tap here to enter text.

4.0 Mitigation

Evaluation of Mitigation Criteria (Information Box Only- No action required)

Your workplan will be evaluated against the criteria below. A successful workplan would potentially inform:

- efficacy of an existing regulation or policy
- an EPEA approval condition
- a regional framework (i.e., LARP)
- an emerging issue

Explain how your monitoring program informs management, policy and regulatory compliance. As relevant give consideration for the EEM framework and the approved Key Questions.

Previous engagements held by the MNA in 2018 found that 63% of all environmental and climate change concerns within OSR MNA Regions were related to declines in fish abundance, fish health, and water quality. Métis are recognized as an Aboriginal people of Canada in section 35 (2) of the Constitution Act, 1982. Hunting, fishing, and trapping have been important to Métis peoples' way of life throughout history and remains important to the culture today. Their Aboriginal right to hunt and fish for food is protected under section 35 of the Constitution Act, 1982. Métis in Alberta continue to exercise their right by harvesting fish for subsistence (food) purposes. The Government of Alberta supported the protection and sustainability of these harvesting rights for eligible Métis citizens through the establishment of a Métis Harvesting Policy in 2018. As such, ongoing monitoring of fish health in Alberta is important for ensuring food security for Alberta Métis. Declines in fish abundance and health within the OSR is an emerging issue for MNA citizens. A monitoring program involving Métis perspectives and using culturally relevant indicators is important to identifying areas of concern and ensuring the concerns of MNA citizens are addressed.

5.0 Indigenous Issues

Evaluation of Indigenous Issues Criteria (Information Box Only- No action required)

Your workplan will be evaluated against the criteria below. A successful workplan would potentially:

- Investigate Indigenous communities key questions and concerns
- Includes culturally relevant receptor(s) and indicator(s)
- Include or be driven by Indigenous communities (participatory or collaborative)
- Develop capacity in Indigenous communities
- Include a Council Resolution or Letter of Support from one or more Indigenous communities
- Describe how ethics protocols and best practices regarding involvement of Indigenous peoples will be adhered to
- Provide information on how Indigenous Knowledge will be collected, interpreted, validated, and used in a way that meets community Indigenous Knowledge protocols

Explain how your monitoring activities are inclusive and respond to Indigenous key questions and concerns and inform the ability to understand impacts on concerns and inform Section 35 Rights

Traditionally fishing has played an important role in Métis way of life, with many Métis families relying heavily on fish for their subsistence base. Fish also plays an important role in Métis artistic expression, with fish scale art utilizing many indelible portions of the fish to create distinct Métis artwork. Beyond a utilitarian purpose, fish and the act of fishing provides for the preservation of Métis culture and intergenerational knowledge transfer as citizens gather sitting in a boat, on a shoreline, or around an ice hole. Regardless of location, engaging in fishing activities with friends, family, and community members allows Elders, Knowledge Holders, and harvesters to share their knowledge and stories with younger generations, ensuring the continuance of Métis cultural practices, traditions, knowledge, and beliefs. The MNA's previous fishing citizen survey, conducted with funding support from the OSM program in 2020-2021, found that a majority (71%) of MNA citizens harvested fish with family, and many rely on fishing locations informed by familial connections (45%) or traditional knowledge (35%) for their harvesting activities. further supporting the importance and continuation of familial and cultural traditions related to fishing.

In late 2018 and early 2019 the MNA held engagement sessions with its citizens across the province to hear their concerns related to climate change and environmental impacts and how these changes are impacting their health and ability to safely exercise their Section 35 rights. Citizens were also asked to share their thoughts on what they would like a MNA monitoring program to include, and what core values it should highlight. The concerns and thoughts expressed by citizens were assessed and results demonstrate that concerns surrounding water quality and fish health are most common, with 41% of all shared environment and climate concerns focused on these factors. Looking more specifically at the Oil Sands area and the four MNA Regions that overlap it (Regions 1, 2, 5, and 6), specific concerns focused on water quality/level and fish health combined averaged 63% of all concerns, indicating that citizens in these areas have heightened concerns regarding changes and impacts to water and fish in their region. More specifically, several citizens commented on lake water becoming polluted and consequently impacting fish health, palatability, and increasing concerns over potential negative health impacts if the fish were consumed. Numerous comments also mentioned a decrease in the number of fish present. During the MNA's 2020-2021 fishing citizen survey, the majority of fish related concerns were regarding declines in the size and availability of fish. Moreover, changes in the composition of fish populations within waterways and waterbodies were also noted to have a negative impact on citizen's ability to harvest target species. Based on the high percentage of concerns related to water and fish, specifically the health and abundance of fish, it is clear this is a major area of concern for Métis citizens in the OSR and that steps need to be taken to address these concerns.

The proposed project seeks to address citizens' concerns regarding fish health and water quality. The project will continue, expand, and improve the MNA's Community Monitor program, from which MNA citizens can investigate and report on fish health from waterbodies and waterways from which they harvest for subsistence. Up to date scientific information regarding fish health for waterbodies and waterways in Alberta is sometimes unavailable/inaccessible to citizens or contended by TK perspectives. The MNA's Community Monitor program seeks to provide citizens with the means to assess fish health data while harvesting through culturally sensitive and relevant materials, developed using established western science sampling protocols and Métis TK gathered from MNA Knowledge Holders, Elders, and harvesters. This information will be tested and validated by community members through ice fishing camps, online engagements with MNA harvesters, Knowledge Holders, and Elders, and through potential MNA citizen feedback on project reports. All TK will be gathered by MNA staff members and housed internally in a database management system owned and controlled by the MNA for the preservation and protection of TK.

Community Monitors will also report data regarding fishing effort, fish health, and palatability to the MNA, which will be used to establish baseline data intended for use in a long-term monitoring program to detect waterbody and waterway-specific changes within the OSR. Summary information regarding fish health will be reported back to the MNA community to inform their fishing activities, or to highlight areas in need of further monitoring. This research will inform on Métis Section 35 rights as to whether citizens can safely exercise these rights and how these rights may be impacted in the future should it be determined that fish populations are experiencing declines in abundance and health in oil sand development areas.

Furthermore, the project will highlight many of the core values expressed by MNA citizens as to what a monitoring program should entail. The MNA's upcoming (2021-2022) and proposed (2022-2023) community fishing events will bring together Elders, Knowledge Holders, youth, and citizens alike to share in traditional teachings related to ice fishing and netting, fish preparation, and storytelling. It will allow for MNA citizens to learn about traditional Métis fish assessment methods and indicators through the TK assessment tool the MNA is developing. Additionally, the program will train citizens in the scientific monitoring methods being utilized, including fish measurements and sample collection. Combined these fishing events will support intergenerational knowledge transfer, be community driven, provide training and education to citizens, and will build capacity and knowledge amongst participants.

The intended result of the proposed project will be for Métis citizens to have access to the tools and information necessary (using both western science and Métis TK methods) to evaluate fish health on the waterways and water bodies from which they harvest. With their own fish health assessments and community submitted fish health data, MNA citizens will be able to make informed choices as to which waterways and waterbodies they preferentially select for fishing to ensure safe and sustainable practices of harvesting for subsistence can continue. The MNA Environment Team will be monitoring fish health data to flag waterways and waterbodies of concern; potentially to be the focus of future investigation and monitoring activities. This information will be made available to citizens to inform their fishing activities. This project ultimately empowers Métis citizens to monitor waterways and waterbodies of cultural, economic, and dietary importance in the OSR, and to highlight areas of environmental concern regarding fish health.

Does this project include an Integrated Community Based Monitoring Component?

No

6.0 Measuring Change

Evaluation of Measuring Change Criteria (Information Box Only- No action required)

Your workplan will be evaluated against the criteria below. A successful workplan would potentially:

- assess changes in environmental conditions compared to baseline (e.g., validation of EIA predictions)
- report uncertainty in estimates and monitoring is of sufficient power to detect change due to oil sands development on reasonable temporal or spatial scales
- include indicators along the spectrum of response (e.g., individual, population, community)
- focus on areas of highest risk (where change is detected, where change is greater than expected, where development is expected to expand (collection of baseline))
- measure change along a stressor gradient or a stressor/reference comparison

Explain how your monitoring identifies environmental changes and can be assessed against a baseline condition. As relevant give consideration for the EEM framework and the approved Key Questions.

This project will continue to work toward establishing baseline conditions from which poor fish health can be detected and changes in fish health can be monitored through a braided approach of western science sampling protocols (fork length, total length, weight, sex, and maturity) and Métis TK for fish health indicators (Métis fish health rubric). As the program expands to include more frequent sampling and additional waterways and waterbodies, the monitoring data submitted by MNA citizens will allow the MNA to establish reliable baseline data specific to waterbodies and waterways within the OSR from which changes can be reliably detected regarding fish health for. Waterways and waterbodies of concern may be flagged for further investigation. The MNA may also consider long-term TK perspectives (e.g., 5+ years, 10+ years) on fish health indicators expressed through surveys and engagements with MNA Elders, Knowledge Holders, and harvesters to determine if the baseline data collected reflects past experiences, or if the current state of the waterbodies, waterways, and fish populations have changed during their lifetime. Declines in fish health noted through surveys and engagements, supported by poor fish health data submitted through our proposed monitoring program could also be collectively considered when determining locations for focused studies in the future.

Métis TK indicators related to fish health have not been widely investigated or evaluated against other methods for detecting changes in fish health, but similarly to other studies utilizing Indigenous Knowledge we anticipate the wealth of knowledge from Métis Knowledge Holders, Elders, and harvesters given their long-standing and intimate relationship with Alberta's waterways, waterbodies, and fisheries, will be able to detect changes and fill in knowledge gaps similar to that of Indigenous Knowledge from other communities (e.g., Brunet et al. 2020: CLFN). Some initial work has been initiated by the MNA to address this knowledge gap during 2021-2022 through this OSM program.

One limitation the MNA will face in their ability to monitor change through this program is its dependence on Community Monitors. Community participation in the program and repeated sampling on individual waterways and waterbodies will be required to provide data sufficient to detect change. As such, there will be a need for ongoing promotion and encouragement for MNA citizens to participate in the program. One potential solution for limited data availability may be to combine data submitted for waterways and waterbodies studied by other communities which measured similar scientific and TK indicators. Combinations, if possible, may provide stronger support for conclusions regarding potential changes in fish health. The MNA has entered into discussions with the Facilitation Centre to develop an SOP based on the MNA's Fish Health Community Monitor program, which may facilitate the expansion of these data collection activities to include members of additional

Indigenous communities in the OSR.

Literature Cited:

Brunet et al. 2020. Towards indigenous community-led monitoring of fish in the oil sands region of Canada: Lessons at the intersection of cultural consensus and fish science. *The Extractive Industries and Society* Volume 7, Issue 4, November 2020, 1319-1329.

Hicks, K., and Scrimgeour, G. 2020. Synthesis report of the enhanced monitoring program on the Lower Athabasca River 2019-2020. Government of Alberta, Ministry of Environment and Parks. ISBN 978-1-4601-4838-9. Available at: <https://open.alberta.ca/publications/9781460148389>.

7.0 Accounting for Scale

Evaluation of Accounting for Scale Criteria (Information Box Only- No action required)

Your workplan will be evaluated against the criteria below. A successful workplan would potentially be:

- appropriate to the key question and indicator of interest
- relevant to sub-regional and regional questions
- relevant to organism, population and/or community levels of biological organization
- where modelled results are validated with monitored data
- where monitoring informs on environmental processes that occur at a regional scale. e.g. Characterizing individual sources to gain a regional estimate of acid deposition and understand signal from individual contributing sources.

Explain how your monitoring tracks regional and sub-regional state of the environment, including cumulative effects. As relevant give consideration for the EEM framework and the approved Key Questions.

Our project asks the questions:

- Are there changes in fish health and water quality in waterways and waterbodies from which MNA citizens rely on the harvest of fish for subsistence?
- Subsequently, where are declines in fish health and water quality occurring to warrant further investigation of impact sources?

The monitoring proposed for this project fits into the EEM framework by contributing to surveillance for the surface water category, focused on water and biological quality indicators. This project includes the continuation of a monitoring program which investigates fish health on waterways and waterbodies from which Métis citizens harvest fish within the OSR. The project is intended to work toward the establishment of baseline monitoring data regarding fish health for individual waterways and waterbodies gathered by MNA Community Monitors. MNA citizens harvesting within the four MNA regions within the OSM area (MNA regions 1, 2, 5, and 6) will be able to participate and investigate fish health in the areas they harvest. Data collected will help answer key questions regarding changes in fish health and water quality. As fish are often considered indicator species for aquatic ecosystems, detection of declines in fish health will provide insight into potential changes in water quality.

Previous engagements held by the MNA in 2018 found that 63% of all environmental concerns regarding the OSR were related to declines in fish abundance, fish health, and water quality. An MNA online fishing survey supported by OSM funds engaged approximately 400 MNA harvesters which investigated fishing habits, values, and knowledge of MNA harvesters. Survey analysis found strong preferences for the harvest of walleye, northern pike, perch, whitefish, burbot, and trout. Through the MNA's current OSM fish health assessment project (2021-2022), fish health indicators are being investigated by interviewing MNA Knowledge Holders, Elders, and harvesters to assist with the development of a rubric for assessing fish health. The content of these interviews will inform the focus of the indicators and species for the rubric; however, the survey results are likely to provide some insight into the species relevant to the Oil Sands monitoring program.

The MNA's proposed continuation of this project during 2022-2023 will allow for continued surveillance of waterways and waterbodies across the OSR, increased capacity building for MNA community monitors, a continued effort to establish baseline data for monitoring, and further exploration of Métis TK regarding fish health.

Explain how your monitoring generates data and reporting that is accessible, credible and useful. As relevant give consideration for the EEM framework and the approved Key Questions.

In 2021-2022, Métis TK regarding fish health will be gathered from semi-structured interviews with willing and

experienced Métis Knowledge Holders, Elders, and harvesters. Interviews will be transcribed, coded, and analyzed to provide the basis for the development of a Métis TK Fish Health Assessment Rubric. This work is currently ongoing.

This rubric will be made available to citizens for use at community ice fishing camps to be held in January through March 2022, where feedback will be obtained. The rubric and feedback will also be presented back to the harvesters and Knowledge Holders through online engagement sessions, for review and an opportunity to provide further knowledge and feedback. These sessions are intended to be held in the spring of 2022. An annual OSM program report will be produced in March of 2022 which will provide details regarding the rubric development process. Once sufficient revisions have been made to the rubric, this rubric will be made available to the MNA community through digital distribution on the MNA website, newsletter, and social media accounts (estimated to occur in the summer of 2022).

The MNA launched its Fish Health Community Monitor program in August 2021 and data collection is ongoing. Once the rubric is made available to MNA citizens, the MNA will revise the Community Monitor forms to complement the fish health assessment rubric, if necessary. Citizens will be further encouraged to sign up as Community Monitors to submit fish health data from their harvests to the MNA for monitoring.

The first comprehensive analysis of community-submitted fish health reports is expected to occur in March and April 2023, for which data will be summarized and shared with the MNA community via formal reports, website content, and social media posts. Some preliminary analyses and reporting activities may be produced at an earlier date to update Community Monitors and citizens on the programs progress, findings, and success. Lastly, a final public report will be produced to ensure all methods and findings from our monitoring program is available to the public and the OSM program to ensure transparency. All results, aside from those deemed sensitive or confidential in nature, will be shared openly through these processes.

8.0 Transparency

Evaluation of Transparency Criteria (Information Box Only- No action required)

Your workplan will be evaluated against the criteria below. A successful workplan would potentially include:

- a plan for dissemination of monitoring data, including appropriate timing, format, and aligns with OSM program data management plan
- demonstrated transparency in past performance
- identified an annual progress report as a deliverable
- reporting of monitoring results occurs at timing and format that is appropriate for recipient audience.

Explain how your monitoring generates data and reporting that is accessible, credible and useful. As relevant give consideration for the EEM framework and the approved Key Questions.

The monitoring proposed for this project fits into the EEM framework by contributing to surveillance for the surface water category, focused on water and biological quality indicators. This project includes the continuation of a monitoring program which investigates fish health on waterways and waterbodies from which Métis citizens harvest fish within the OSR. The project is intended to work toward the establishment of baseline monitoring data regarding fish health for individual waterways and waterbodies gathered by MNA Community Monitors. MNA citizens harvesting within the four MNA regions within the OSM area (MNA regions 1, 2, 5, and 6) will be able to participate and investigate fish health in the areas they harvest. Data collected will help answer key questions regarding changes in fish health and water quality. As fish are often considered indicator species for aquatic ecosystems, detection of declines in fish health will provide insight into potential changes in water quality.

While there are ongoing fish health projects being conducted within the OSM program to investigate fish health, there are many Indigenous communities within the OSM areas; each with their own TK. Métis fish health indicators have not yet been explored for the collective MNA community (MNA regions 1, 2, 5, and 6) aside from some preliminary work being undertaken by the MNA during the 2021-2022 fiscal year, and thus their knowledge and perspectives cannot be considered and incorporated into fisheries management until it has been investigated and made available. This proposed project seeks to rectify this situation by gathering Métis TK on fish health and developing materials to support MNA Community Monitors in monitoring the health of fish harvested and relied on for subsistence. Métis TK perspectives are expected to be used in a similar fashion to Indigenous Knowledge from other OSM communities in recent studies (e.g., Brunet et al. 2020: CLFN).

The tools developed through this project may also contribute to core monitoring studies of the OSM program by providing additional insight to fish health indicators identified through TK, as Métis perspectives and knowledge may share similarities or differences from other Indigenous communities doing similar assessments in the OSR. Methodologies related to the MNA's Fish Health Community Monitor program and for developing a TK fish health assessment rubric will also be shared with the OSM program and may be of assistance to other OSM communities who wish to explore TK regarding fish health within their own community. The MNA has entered discussions with the Facilitation Centre about potentially developing an SOP related to this project. The monitoring goal of this project is to gather western science and Métis TK-based fish health data for the purpose of a long-term monitoring effort to detect changes and highlight areas of concern for further investigation of impact sources. The MNA hopes to continue the monitoring program in future years to ensure the MNA community can continue to be empowered to monitor and gain awareness of the state of fish health in waterways and waterbodies from which they harvest. The continuation of this program is also important to ensure waterbody and waterway-specific baseline data is established from the efforts of MNA Community

Monitors. A single year of data collection from a new program will not be sufficient to establish baseline data for monitoring fish health, so it is important for this program to continue for subsequent years. The quality and geographic coverage of fish health data collected could also be further enhanced through similar efforts by other Indigenous communities in the OSR, from which data could be pooled. This could be enabled through the development of an SOP, as mentioned above.

Another potential area for integration with other OSM projects is to establish a shared data set regarding TK fish health indicators. While TK is unique to each individual community, there is likely to be some overlap in data collection methods and culturally relevant fish health indicators. Wider consideration of fish health indicators may enhance the ability of community members for monitoring fish health across the OSR.

Staff resources within the MNA Environment team will be allocated to complete all necessary tasks related to this project. While the team concurrently manages a variety of projects, individuals from within the team will allocate time to complete each of the tasks they are best suited for throughout different phases of the proposed project. A detailed overview of the MNA Environment Team's key members for this project and their roles and expertise will be provided in section 15 of this application.

Literature Cited:

Brunet et al. 2020. Towards indigenous community-led monitoring of fish in the oil sands region of Canada: Lessons at the intersection of cultural consensus and fish science. *The Extractive Industries and Society* Volume 7, Issue 4, November 2020, 1319-1329.

9.0 Efficiency

Evaluation of Efficiency Criteria (Information Box Only- No action required)

Your workplan will be evaluated against the criteria below. A successful workplan would include:

- appropriately addressed a risk-informed allocation of resources
- identified the role and justification for each staff member on the proposed work plan
- identified in-kind and leveraged resources (e.g., resources and approaches are appropriately shared with other OSM projects where possible)
- established partnerships (value-added) and demonstrated examples of coordinated efficiencies (e.g., field, analytical)
- identified co-location of monitoring effort
- demonstrated monitoring activities and information collected are not duplicative
- considered sampling/measurement/methods compatibility to other data sources (e.g., AER)

Explain how your monitoring is integrated with other OSM projects and incorporates community-based participation and/or engagement in proposed monitoring activities. As relevant give consideration for the EEM framework and the approved Key Questions.

The proposed monitoring project fits into the EEM framework by contributing to surveillance for the surface water category, focused on water and biological quality indicators. Our project seeks to establish a monitoring program which investigates fish health on waterways and waterbodies from which Métis citizens harvest fish within the OSR. The project will be gathering data on baseline conditions of fish health for individual waterways and waterbodies submitted by Métis Community Monitors. Métis citizens harvesting within the four MNA regions within the OSM area (MNA regions 1, 2, 5, and 6) will be able to participate and investigate fish health in the areas they harvest. Data collected will help answer key questions regarding changes in fish health and water quality. As fish are often considered indicator species for aquatic ecosystems, detection of declines in fish health will provide insight into potential changes in water quality.

While there are ongoing fish health projects being conducted within the OSM program to investigate fish health, there are many Indigenous communities within the OSM areas; each with their own Traditional Knowledge. Métis fish health indicators have not yet been explored for the collective MNA community (MNA regions 1, 2, 5, and 6), and thus their knowledge and perspectives cannot be considered and incorporated into fisheries management. This proposed project seeks to rectify this situation by gathering Métis Traditional Knowledge on fish health and developing materials to support Community Monitors in monitoring the health of fish harvested and relied on for subsistence. Métis Traditional Knowledge perspectives are expected to be used in a similar fashion to Indigenous Knowledge from other OSM communities in recent studies (e.g., Brunet et al. 2020: CLFN).

The tools developed through this project may also contribute to core monitoring studies of the OSM program by providing additional insight to fish health indicators identified through Traditional Knowledge, as Métis perspectives and knowledge may share similarities or differences from other Indigenous communities doing similar assessments in the OSR. Methodologies for developing a fish health rubric will also be shared with the OSM program and may be of assistance to other OSM communities who wish to explore Traditional Knowledge regarding fish health within their own community.

The monitoring goal of this project is to gather western science and Métis Traditional Knowledge based fish health data for the purpose of a long-term monitoring effort to detect changes and highlight areas of concern for further investigation of impact sources. We hope to continue the monitoring program in future years to ensure MNA community members can continue to be empowered to monitor and gain

awareness of the state of fish health in water ways and water bodies from which they harvest. One area of potential integration with other OSM projects is to establish a shared data regarding fish health assessments (using both western science and TK methodologies). While TK is unique to each individual community, there is likely to be some overlap in methods and culturally relevant fish health indicators. Where appropriate, communities could pool fish health data from various surveys across the OSR to provide further insight into the state of waterways and waterbodies in the area.

Staff resources within the MNA Environment team will be allocated to complete all necessary tasks related to this project. While the team concurrently manages a variety of projects, individuals from within the team will allocate time to complete each of the tasks they are best suited for throughout different phases of the proposed project. A detailed overview of the MNA Environment Team's key members for this project and their roles and expertise will be provided in section 15 of this application.

Literature Cited:

Brunet et al. 2020. Towards indigenous community-led monitoring of fish in the oil sands region of Canada: Lessons at the intersection of cultural consensus and fish science. *The Extractive Industries and Society* Volume 7, Issue 4, November 2020, 1319-1329.

10.0 Work Plan Approach/Methods

10.1 List the Key Project Phases and Provide Bullets for Each Major Task under Each Project Phase *

Phase 1: Harvester, Elder, and Knowledge Holder Re-Engagement (Apr – Jun 2022)

Activity I: Summarize feedback and identify potential areas for revision of the fish health assessment rubric and Community Monitor data collection forms, utilizing notes from the projects 2021-2022 annual report and data collection/feedback forms from ice fishing camps.

Activity II: Develop a presentation and engagement questions for a focus group of MNA harvesters. Contact MNA harvesters and schedule the event.

Activity III: Hold focus group with MNA harvesters to update them on the fish health assessment project, community monitor data submission forms, and the intent to make the rubric available for citizen use and reporting in the upcoming year. Obtain feedback through a semi-guided discussion.

Phase 2: Fish Health Assessment Rubric/Data Form Revisions (Jun - Jul 2022)

Activity I: Analyze feedback from MNA harvester focus group and use it to inform revisions to the MNA fish health index and community monitor data collection forms/protocols.

Phase 3: Promotion & Education (Aug – Jan 2023)

Activity I: Work with MNA Communications team to create multi-media and website content to share the MNA fish health assessment rubric, community monitor data collection methodology and forms, and promote participation in community science and monitoring of fish health. Promotional materials will utilize materials (photos, data, etc.) collected during the previous year's ice fishing camps and photos collected from submissions by Community Monitors. Posts encouraging participation in this program will be ongoing as MNA harvester fishing activities may occur year-round.

Activity II: Develop and hold online education sessions to promote the fish health assessment rubric, participation in community science through citizens fish health data collection, and to answer questions from MNA citizens regarding the program and fish health. These sessions will be held via Zoom, recorded and made available to the broader MNA community through the MNA YouTube Channel.

Activity III: Work with MNA Communications team to create social media and website posts to inform MNA citizens about the fish health rubric and upcoming ice fishing events.

Phase 4: Training & Rubric Testing (Feb 2023)

Activity I: Plan two community ice fishing camps to educate citizens on how to utilize the fish health assessment rubric, and how to collect data (fork length, total length, weight, sex, and maturity) from citizen caught fish, with the intention for citizens to report their own measurements to the MNA. This activity will build citizen research capacity and provide an opportunity for community science and monitoring, while facilitating knowledge transfer between citizens (especially Elder to youth) within the MNA community. Citizens will also experience using the MNA fish health assessment rubric and Community Monitor data collection forms and provide feedback to the MNA.

Activity II: Hold ice fishing camps and record photos and videos at the ice fishing camp events to be used for videos to promote the fish health assessment rubric and community fish health submission forms to the broader MNA community.

Phase 5: Assessment & Reporting (Mar – Apr 2023)

Activity I: MNA staff will participate in ESRI ArcGIS software training to aid with the production of maps for their final report and future communications with MNA citizens regarding community monitoring projects.

Activity II: Compile and analyze and store data from fish health project, including recently submitted MNA harvester submitted fish health data forms. Citizens who submit forms to the MNA will be entered into seasonal prize draws which will grant rewards (e.g., gift cards, MNA swag, fishing-related items) to encourage ongoing participation in the program.

Activity III: Summarize project findings, compile Final Report and upload shared data to the MNA database

management system (ESS).

Phase 6: Community Monitor Program (Ongoing; Apr 2022-Apr 2023)
 Activity I: Review Community Monitoring submissions and award prizes each season as incentives to encourage participation.

10.2 Describe how changes in environmental Condition will be assessed *

Our monitoring project will assess changes in environmental condition by establishing baseline fish health data submitted by MNA Community Monitors for waterbodies and waterways from which they harvest. Data will be collected using a series of online report forms and western science sampling protocols (measuring variables such as fork length, round weight, total length, weight, sex, and maturity), assisted by a Métis TK fish health assessment rubric which is currently under development during the 2021-2022 fiscal year. The data collected will continually be stored and analyzed by MNA staff members as a part of the Community Monitor program. As successive reports are submitted for an individual waterbody or waterway, the MNA can compare the fish health data submitted to determine if there are changes in fish health. Additionally, for waterbodies and waterways for which there is no successive reporting available, predominant reports of poor fish health for a given year may also suggest the need for further investigation.

10.3 Are There Benchmarks Being Used to Assess Changes in Environmental Condition? If So, Please Describe, If Not, State "NONE" *

NONE
 (e.g., objectives, tiers, triggers, limits, reference conditions, thresholds, etc.)

10.4 Provide a Brief Description of the Western Science or Community-Based Monitoring Indigenous Community-Based Monitoring Methods by Project Phase *

A brief description of methods for each relevant project year and project phase is provided below. Phases with straightforward methodologies have been omitted:

Year 1 of this project is ongoing and expected to be completed by March 2022. The following will outline the MNA’s proposed plans for the second year of this project during the 2022-23 fiscal year. The activities described below will be completed in addition to the continuation of the MNA’s Fish Health Community Monitor program, including ongoing advertisements to citizens (e.g., MNA newsletter, social media posts), season prize draws, and program promotion at MNA events.

Year 2 (2022-2023):

Phase 1: Harvester, Elder, and Knowledge Holder Re-Engagement (Apr – Jun 2022)
 Métis Knowledge Holders, Elders, and harvesters (with a focus on those who participated in the interview process) will be contacted by phone and email to invite them to attend a focus group held via Zoom to review the fish health assessment materials (sampling protocols, TK fish health assessment rubric, data sheets, and etc.) and to provide feedback to guide further revision. Information on the topic of the session and the time commitment will be presented when requesting for individuals to participate. Multiple sessions may be held to provide opportunities for increased participation and feedback. At each session, a project update and the materials will be presented via screenshare and/or through a PowerPoint presentation. Semi-structured questions will be developed to facilitate discussions for feedback on content and revision of the fish health assessment materials. The discussion portion of the sessions will be recorded via Zoom and notes will also be taken during the session. Participants will be made aware of the MNA’s intent to record in advance of, and during, the session. After the session, a survey will be developed and sent to participants to provide further opportunity to share thoughts they were unable to provide during the session.

Phase 2: Fish Health Assessment Rubric/Data Form Revisions (Jun - Jul 2022)
 Engagement session notes will be compared to recordings for accuracy. Notes and survey data will be compiled using NVivo software and analyzed to summarize participant feedback and suggestions for revision of the fish

health assessment materials. Data analyses and summaries produced will be used to inform revisions to the fish health assessment materials.

Phase 4: Training & Rubric Testing (Feb 2023)

Two community ice fishing camps will be held to educate citizens on fish health assessments and data collection from citizen caught fish. TK methods will involve instruction on use of the TK fish health assessment rubric developed in phase 2, and any subsequent products that result (e.g., fish health assessment framework). Western science methodologies taught to Métis Community Monitors will be similar to those conducted by other fish studies within the OSM program (McMaster et al. 2018; Brunet et al. 2020), which includes measuring fish weight, length, sex, and visual health. Sampling protocol materials developed will draw on the Manual of Instructions – Fall Walleye Index Netting (Morgan, 2002) developed by the Percid Community Synthesis Diagnostics and Sampling Standards Working Group.

Phase 5: Assessment & Reporting (Mar – Apr 2023)

Fish health data submitted by MNA Community Monitors will be compiled and entered into the MNA’s database management system (ESS). ArcGIS software will be utilized to examine the spatial coverage of Community Monitor reports, and to produce cartographic representations of the data to be shared with the MNA Community and the OSM program through reporting processes. Geospatial data will be represented at a level specific to individual waterways and waterbodies as to avoid sharing sensitive information related to harvesting locations. A final public report will be produced to ensure all methods and findings from our monitoring program are available to the public and to the OSM program to ensure transparency.

Phase 6: Community Monitor Program (Ongoing; Apr 2022-Apr 2023)

Fish health data submitted by MNA Community Monitors will be reviewed and Community Monitors will be awarded prizes as incentives to encourage participation. Items of greater value will be awarded seasonally through prize draws including all citizens who submitted a form in the given 3-month period. Prizes will be mailed to the winners.

Peacock et al. 2020. Linking co-monitoring to co-management: Bringing together local, traditional, and scientific knowledge in a wildlife status assessment framework. *Arctic Science*. 6(3): 247-266. <https://doi.org/10.1139/as-2019-0019>

Morgan, G.E. 2002. Manual of instructions — fall walleye index netting (FWIN). Percid community synthesis, diagnostics and sampling standards working group. Edited by Ontario Ministry of Natural Resources, Peterborough, pp. 20.

Brunet et al. 2020. Towards indigenous community-led monitoring of fish in the oil sands region of Canada: Lessons at the intersection of cultural consensus and fish science. *The Extractive Industries and Society* Volume 7, Issue 4, November 2020, 1319-1329.

10.5 List the Key Indicators Measured, If Not Applicable, State N/A *

Key Indicators:

- baseline fish health conditions collected using western science sampling protocols (e.g., fork length, round weight, total length, weight, sex, and maturity).
- abnormalities noted through visual inspection of fish sampled by MNA Community Monitors.
- changes in fish health conditions for waterbodies and waterways within the OSR, as determined by analysis of reports from MNA Community Monitors.
- Métis TK indicators, to be determined by Métis Knowledge Holders and harvesters through the interviews expected to occur in Phase 1 (April – July 2021) of the first year of the proposed project. These key Indicators will inform the development of the Métis TK Fish Health Assessment rubric.

11.0 Knowledge Translation

In the space below, please provide the following:

- Describe the plan for knowledge transfer and distribution of learnings from the project. This could include workshops, publications, best practice documentation, marketing plan, etc.
- Demonstrate that the knowledge transfer plan is appropriate for the intended end-users.

The MNA is able to share information with many of its citizens through digital platforms, such as their website, newsletter, and social media accounts. The MNA's Facebook Page has approximately 19,200 followers, its Twitter account has approximately 4,100 followers, and the bi-weekly email newsletter is sent to over 24,000 individuals. The MNA also manages a database of over 4,000 harvesters and environmentally concerned citizens who have agreed to be contacted by the MNA about environmental issues. These platforms are frequently used to share program information and updates, recruit volunteers, and promote MNA community events.

During our current year of funding (2021-2022), Métis TK regarding fish health will be gathered through semi-structured interviews with willing and experienced Métis Knowledge Holders, Elders, and harvesters throughout fall 2021. The MNA have identified experienced Métis Knowledge Holders, Elders, and harvesters who volunteered to engage with the MNA on fish health during our fishing-related engagement survey held in 2020. These individuals will be the target sample for our interviews. These interviews are informing the development of a Métis TK Fish Health Assessment Rubric.

This rubric will be made available to citizens for use at community ice fishing camps in February 2022, during which feedback will also be obtained. Fishing camps will be promoted to MNA citizens through website and social media posts on the MNA social media accounts. At the fishing camps, western science fish sampling protocols will also be made available to attendees for review and feedback. The materials and feedback from the camps will also be presented back to the Knowledge Holders, Elders, and harvesters who participated in the interviews through online engagement sessions, for review and an opportunity to provide further knowledge and feedback for improvements. These sessions are intended to be held in spring 2022. Participants will be contacted by email and phone.

An annual OSM program report will be produced in March 2022 which will provide details regarding the rubric development process. Once sufficient revisions have been made to the rubric, the rubric will be made available to the MNA community through digital distribution on the MNA website, newsletter, and social media accounts (estimated to occur in summer 2022). Once the rubric and sampling protocols are made available to MNA citizens, the MNA will be encouraging citizens to use these resources and join the MNA's Fish Health Community Monitor program to contribute to the collection and submission of fish health data to the MNA for monitoring. These materials and details/updates regarding the MNA's fish health community monitor program will be shared with the MNA community via formal reports, website content, and social media posts.

The first analysis of community-submitted fish health reports is expected to occur in March and April 2023, for which data will be summarized and shared with the MNA community via formal reports, website content, and social media posts. An internal final report will be prepared providing in-depth analysis of the results and recommendations, this report will be available for internal dissemination, with a smaller summary report using plain language created for public consumption and dissemination to all Métis citizens and the general public alike. As per the funding agreement, additional final reports will be produced and research papers for publication in scientific journals may be produced as deemed appropriate.

The first comprehensive analysis of community-submitted fish health reports is expected to occur in March and April 2023, for which data will be summarized and shared with the MNA community via formal reports, website content, and social media posts. Some preliminary analyses and reporting activities may be produced at an earlier date to update Community Monitors and citizens on the programs progress, findings, and success. A final report will be produced to ensure all methods and findings from our monitoring program is available to the public and the OSM program to ensure transparency. Methods and findings will also be reported to Métis



citizens and the public in a condensed and plain-language format created for public consumption and dissemination. This may include the use of applications such as ESRI ArcGIS storymaps.

12.0 External Partners

List by project or project phase each component that will be delivered by an external party (including analytical laboratories) and name the party. Describe and name the associate work plan/grant/contract for these services. * state none if not required

None

*To ensure complete work plan proposal submission, all grants and contracts listed in this section should also be captured in Grants & Contracts.

13.0 Data Sharing and Data Management

For 2022-23 the following approach will be taken by the OSM Program related to data sharing.

For all work plans of a **western science** nature funded under the OSM Program, data sharing is a condition of funding and must align with the principle of "**Open by Default**". In this case, all data is to be shared with the OSM Program as directed by the OSM Program Data Management work plan.

For all work plans involving **Indigenous Knowledge** as defined below and funded under the OSM Program, data sharing is a condition of funding and the Indigenous Knowledge components of the work plan must align with the principle of "**Protected by Default**". In this case, all data as defined as Indigenous Knowledge, are to be retained by the Indigenous community to which the Indigenous Knowledge is held.

Indigenous Knowledge is defined as:

"The knowledge held by First Nations, Inuit and Métis peoples, the Aboriginal peoples of Canada. Traditional knowledge is specific to place, usually transmitted orally, and rooted in the experience of multiple generations. It is determined by an Aboriginal community's land, environment, region, culture and language. Traditional knowledge is usually described by Aboriginal peoples as holistic, involving body, mind, feelings and spirit. Knowledge may be expressed in symbols, arts, ceremonial and everyday practices, narratives and, especially, in relationships. The word tradition is not necessarily synonymous with old. Traditional knowledge is held collectively by all members of a community, although some members may have particular responsibility for its transmission. It includes preserved knowledge created by, and received from, past generations and innovations and new knowledge transmitted to subsequent generations. In international or scholarly discourse, the terms traditional knowledge and Indigenous knowledge are sometimes used interchangeably."

This definition was taken from the Canadian Government's Tri-council Policy Statement for Ethical Research involving Humans (Chapter 9, pg. 113) and is an interim definition specific to the Oil Sands Monitoring Program.

Data Sharing and Data Management *Continued*

13.1 Has there, or will there be, a Data Sharing Agreement established through this Project? *

NO

13.2 Type of Quantitative Data Variables:

Both

13.3 Frequency of Collection:

Other

13.4 Estimated Data Collection Start Date:

2021-04-01

13.5 Estimated Data Collection End Date:

2023-02-28

13.6 Estimated Timeline For Upload Start Date:

2023-02-28

13.7 Estimated Timeline For Upload End Date:

2023-03-31

13.8 Will the data Include traditional knowledge as defined by and provided by an Indigenous representative, Community or Organization?

YES

TABLE 13.9 Please describe below the Location of Data and Data Type:

Add a Data Source by clicking on the table and then clicking on the blue "+" symbol on the bottom right side of table

Name of Dataset	Location of Dataset (E.g.: Path, Website, Database, etc.)	Data File Formats (E.g.: csv, txt, API, accdb, xls, etc.)	Security Classification
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Choose an item.

14.0 2022/23 Deliverables

Add an additional deliverable by clicking on the table and then clicking on the blue "+" symbol on the bottom right side of table.

Type of Deliverable	Delivery Date	Description
Stakeholder or Community Presentation	Q1	Focus Group Session (year 2) to be held with MNA Knowledge Holders and harvesters who were interviewed to create the Métis TK Fish Health rubric
OSM Program Annual Progress Report (required)	Q4	Final Report Year 2
Public Dissemination Document	Q4	Public Report Year 2
Key Engagement/Participation Meeting	Q1	Community Ice Fishing Camps
Other (Describe in Description Section)	Q4	Métis TK Fish Health rubric (year 2)

15.0 Project Team & Partners

In the space below please provide information on the following:

- Describe key members of the project team, including roles, responsibilities and expertise relevant to the proposed project.
- Describe the competency of this team to complete the project.
- Identify any personnel or expertise gaps for successful completion of the project relative to the OSM Program mandate and discuss how these gaps will be addressed.
- Describe the project management approach and the management structure.

The MNA's Environment team within the Métis Rights and Accommodation Department is a diverse team of individuals with wide-ranging expertise and competencies. The team's work is directed by a vision established by an MNA Provincial Council Resolution on Environment, focusing on ensuring citizens can continue to practice their culture and traditions in a resilient and interconnected ecosystem supported by clean air, water and land. The Environment Team engages with Métis citizens about environmental concerns, and works to research, monitor, report on, and potentially address those concerns for the benefit of the Métis Nation of Alberta and Métis citizens.

The MNA Environment Team has been, and continues to be, involved in the successful management and delivery of variety of programs focused related to caribou management, Chronic Wasting Disease, migratory birds, Indigenous community monitoring and capacity building, and Indigenous Protected and Conserved Areas. Projects undertaken through these programs have worked to investigate and address concerns of Métis citizens regarding issues such as food security, the state of the environment (including fish, wildlife, and plant populations and habitats), and the preservation of Métis culture and traditions.

Key Members from the Métis Nation of Alberta:

Project Lead: James Glasier PhD., Fish and Wildlife Specialist. Is a Profession Biologist who has a PhD in Ecology and MSc in Conservation Biology. Expertise in Ecology, Conservation Biology and Scientific Methods. Responsibilities will include project management, including planning and leading events, engaging with Knowledge Holders and harvesters, overseeing data entry and analysis, and report writing.

Project Support: Jordan York MES., Environmental Manager. Has an MES in Environmental Studies: Northern Environments and Cultures. Expertise in Traditional Knowledge and Wildlife Management. Experience working in community engagement, traditional ecological knowledge projects, environmental monitoring, and field work. Responsibilities will include assisting with project management, including planning and running events, engaging with Knowledge Holders and harvesters, data entry and analysis, report writing, and leading public dissemination with assistance of the MNA Communications team.

Project Support: Courtney Anderson, Environmental Science student from Lakeland College, MNA Student Intern. Responsibilities will include assisting with Indigenous community engagements, data entry, data analysis, transcript proofing and coding, and field work.

Director: Andres Filella, Climate Leadership Manager and Acting Director of MNA Climate and Environment. Expertise in employee and project management, government relations, and citizen engagement. Responsibilities will include providing Senior project oversight and advice.

Expertise gaps:

Some MNA staff members who will be working on this project would benefit from training on QSR Nvivo software to support the coding and analysis of interviews with Métis harvesters and Knowledge Holders. They would also benefit from basic training in ArcGIS software for management of geospatial data associated with the data collected from Community Monitors, and for producing maps for reporting purposes. Some staff member training will occur during the first year of this project (2021-2022 fiscal



year); however, the staff members would benefit from further advancing their skills in these areas to support the continuation and expansion of this project.



16.0 Project Human Resources & Financing

Section 16.1 Human Resource Estimates

Building off of the competencies listed in the previous section, please complete the table below. Add additional rows as necessary. This table must include **ALL staff involved** in the project, their role and the % of that staff's time allocated to this work plan. The AEP calculated amount is based on an estimate of \$120,000/year for FTEs. This number cannot be changed. The OSM program recognizes that this is an estimate.

Table 16.1.1 AEP

Add an additional AEP Staff member by clicking on the table and then clicking on the blue "+" symbol on the bottom right side of table. The total FTE (Full Time Equivalent) is Auto Summed (in Table 16.2.1) and converted to a dollar amount.

Name (Last, First)	Role	% Time Allocated to Project
Click or tap here to enter text.	Click or tap here to enter text.	0%

Table 16.1.2 ECCC

Add an additional ECCC Staff member by clicking on the table and then clicking on the blue "+" symbol on the bottom right side of table. The total FTE (Full Time Equivalent) is Auto Summed in Table 16.2.2

Name (Last, First)	Role	% Time Allocated to Project
Click or tap here to enter text.	Click or tap here to enter text.	0%

The tables below are the financial tables for Alberta Environment & Parks (AEP) and Environment & Climate Change Canada. All work plans under the OSM Program require either a government lead or a government coordinator.

Section 16.2 Financing

The OSM Program recognizes that many of these submissions are a result of joint effort and monitoring initiatives. A detailed "PROJECT FINANCE BREAKDOWN" must be provided using the Project Finance Breakdown Template provided, accessible here (ctrl + click the link below). Please note that completion of this Project Finance Breakdown Template is mandatory and must be submitted along with each workplan.

[PROJECT FINANCE BREAKDOWN TEMPLATE \(CTRL+CLICK HERE\)](#)

Table 16.2.1 Funding Requested BY ALBERTA ENVIRONMENT & PARKS

Organization – Alberta Environment & Parks ONLY	Total % time allocated to project for AEP staff	Total Funding Requested from OSM
Salaries and Benefits <i>(Calculated from Table 16.1.1 above)</i>	0.00%	\$0.00
Operations and Maintenance		
Consumable materials and supplies		\$0.00
Conferences and meetings travel		\$0.00
Project-related travel		\$0.00
Engagement		\$0.00
Reporting		\$0.00
Overhead		\$0.00
Total All Grants <i>(Calculated from Table 16.4 below)</i>		\$0.00
Total All Contracts <i>(Calculated from Table 16.5 below)</i>		\$143,691.00
Sub- TOTAL <i>(Calculated)</i>		\$143,691.00
Capital*		\$0.00
AEP TOTAL <i>(Calculated)</i>		\$143,691.00

* The Government of Alberta Financial Policies (Policy # A600) requires that all **capital asset** purchases comply with governmental and departmental legislation, policies, procedures, directives and guidelines. **Capital assets** (Financial Policy # A100, Government of Alberta, January 2014) are tangible assets that: have economic life greater than one year; are acquired, constructed, or developed for use on a continuing basis; are not held for sale in ordinary course of operations; are recorded and tracked centrally; have a cost greater than \$5,000.

Some **examples of capital asset equipment include:** laboratory equipment, appliances, boats, motors, field equipment, ATV's/snowmobiles, stationary equipment (pier/sign/weather), fire/safety equipment, pumps/tanks, heavy equipment, irrigation systems, furniture, trailers, vehicles, etc. (Financial Policy # A100, Government of Alberta, January 2014).

Table 16.2.2 Funding Requested BY ENVIRONMENT & CLIMATE CHANGE CANADA

Organization – Environment & Climate Change Canada ONLY	Total % time allocated to project for ECCC staff	Total Funding Requested from OSM
Salaries and Benefits FTE <i>(Please manually provide the number in the space below)</i>		
Salaries and Benefits		\$0.00
Operations and Maintenance		
Consumable materials and supplies		\$0.00
Conferences and meetings travel		\$0.00
Project-related travel		\$0.00
Engagement		\$0.00
Reporting		\$0.00
Overhead		\$0.00
ECCC TOTAL <i>(Calculated)</i>		\$0.00

* ECCC cannot request capital under the OSM program. Any capital requirements to support long-term monitoring under the OSM program should be procured by Alberta and captured in that budget table.

Table 16.3

Complete ONE table per Grant recipient.

Add a Recipient by clicking on the table and then clicking on the blue "+" symbol on the bottom right side of table. The total of all Grants is Auto Summed in Table 16.2.1

GRANT RECIPIENT - ONLY: Name	Click or tap here to enter text.
GRANT RECIPIENT - ONLY: Organization	Click or tap here to enter text.
Category	Total Funding Requested from OSM
Salaries and Benefits	\$0.00
Operations and Maintenance	
Consumable materials and supplies	\$0.00
Conferences and meetings travel	\$0.00
Project-related travel	\$0.00
Engagement	\$0.00
Reporting	\$0.00
Overhead	\$0.00
GRANT TOTAL <i>(Calculated)</i>	\$0.00

Table 16.4

Complete ONE table per Contract recipient.

Add a Recipient by clicking on the table and then clicking on the blue "+" symbol on the bottom right side of table. This section is only to be completed should the applicant intend to contract components or stages of the project out to external organizations. The total of all Contracts is Auto Summed in Table 16.2.1

CONTRACT RECIPIENT - ONLY: Name	Click or tap here to enter text.
CONTRACT RECIPIENT - ONLY: Organization	Click or tap here to enter text.
Category	Total Funding Requested from OSM
Salaries and Benefits	\$81,832.00
Operations and Maintenance	
Consumable materials and supplies	\$14,440.00
Conferences and meetings travel	\$0.00
Project-related travel	\$12,500.00
Engagement	\$18,550.00
Reporting	\$2,000.00
Overhead	\$14,369.17
CONTRACT TOTAL <i>(Calculated)</i>	\$143,691.17

Table 16.5 GRAND TOTAL Project Funding Requested from OSM Program

The table below is auto calculated, please do not try to manually manipulate these contents.

Category	Total Funding Requested from OSM
Salaries and Benefits <i>Sums totals for salaries and benefits from AEP and ECCC ONLY</i>	\$0.00
Operations and Maintenance	
Consumable materials and supplies <i>Sums totals for AEP and ECCC ONLY</i>	\$0.00
Conferences and meetings travel <i>Sums totals for AEP and ECCC ONLY</i>	\$0.00
Project-related travel <i>Sums totals for AEP and ECCC ONLY</i>	\$0.00
Engagement <i>Sums totals for AEP and ECCC ONLY</i>	\$0.00
Reporting <i>Sums totals for AEP and ECCC ONLY</i>	\$0.00
Overhead <i>Sums totals for AEP and ECCC ONLY</i>	\$0.00
Total All Grants (from table 16.2.1 above) <i>Sums totals for AEP Tables ONLY</i>	\$0.00
Total All Contracts (from table 16.2.1 above) <i>Sums totals for AEP Tables ONLY</i>	\$143,691.00
Sub- TOTAL	\$143,691.00
Capital* <i>Sums total for AEP</i>	\$0.00
GRAND PROJECT TOTAL	\$143,691.00

Some **examples of capital asset equipment include:** laboratory equipment, appliances, boats, motors, field equipment, ATV's/snowmobiles, stationary equipment (pier/sign/weather), fire/safety equipment, pumps/tanks, heavy equipment, irrigation systems, furniture, trailers, vehicles, etc. (*Financial Policy # A100, Government of Alberta, January 2014*).

17.0 FINANCIAL MANAGEMENT

The OSM Program reserves the right to reallocate project funding during the current fiscal year on the basis of project performance and financial overspend or underspend.

Please check this box to acknowledge you have read and understand

In the space below please describe the following:

- Discuss how potential cost overruns and cost underruns will be managed.
- If this is a continuing project from last year, identify if this project was overspent or underspent in the previous year and explain why.
- Describe what risks and/or barriers may affect this project.

Regular finance updates and expenditure tracking will ensure there is no overrun or underrun. Potential risks or barriers could include impacts of the Covid-19 pandemic. Health and Safety restrictions and protocols related to pandemic response may impact in-person gatherings, such as the planned ice-fishing events for this project. A scope change might be needed to ensure safety of all citizens and prevent potential community transmission.



18.0 Alternate Sources of Project Financing – In-Kind Contributions

Table 18.1 In-kind Contributions

Add an In Kind Contribution by clicking on the table and then clicking on the blue "+" symbol on the bottom right side of table.

DESCRIPTION	SOURCE	EQUIVALENT AMOUNT (\$CAD)
Click or tap here to enter text.	Click or tap here to enter text.	\$0.00
TOTAL		\$0.00



19.0 Consent & Declaration of Completion

Lead Applicant Name

James Glasier PhD

Title/Organization

Fish and Wildlife Specialist

Signature

James Glasier

Date

2021-10-05

Government Lead / Government Coordinator Name (if different from lead applicant)

Click or tap here to enter text.

Title/Organization

Click or tap here to enter text.

Signature

Click or tap here to enter text.

Date

Click or tap to enter a date.



PROGRAM OFFICE USE ONLY

Governance Review & Decision Process

this phase follows submission and triggers the Governance Review

TAC Review (Date):

Click or tap to enter a date.

ICBMAC Review (Date):

Click or tap to enter a date.

SIKIC Review (Date):

Click or tap to enter a date.

OC Review (Date):

Click or tap to enter a date.

Final Recommendations:

Decision Pool:

Choose an item.

Notes:

Click or tap here to enter text.

Post Decision: Submission Work Plan Revisions Follow-up Process

This phase will only be implemented if the final recommendation requires revisions and follow-up from governance

ICBMAC Review (Date):

Click or tap to enter a date.

SIKIC Review (Date):

Click or tap to enter a date.

OC Review (Date):

Click or tap to enter a date.

Comments:

Decision Pool:

Choose an item.

Notes & Additional Actions for Successful Work Plan Implementation:

Click or tap here to enter text.