Work Plan Application

Project Information	
Project Title:	CPFN Community Based Monitoring Program
Lead Applicant, Organization, or Community:	Chipewyan Prairie First Nation
Work Plan Identifier Number: If this is an on-going project please fill the identifier number for 24/25 fiscal by adjusting the last four digits: **Example:** D-1-2425 would become D-1-**2425**	B-CM-35-2223
Project Region(s):	Athabasca
Project Start Year: First year funding under the OSM program was received for this project (if applicable)	2022
Project End Year: Last year funding under the OSM program is requested **Example: 2024**	2025
Total 2024/25 Project Budget: From all sources for the 2024/25 fiscal year	
Requested OSM Program Funding: For the 2024/25 fiscal year	$256,990.00
Project Type:	Community Based Monitoring
Project Theme:	Cross-Cutting
Anticipated Total Duration of Projects (Core and Focused Study (3 years))	Year 3
Current Year (choose one):	Focused Study Year 2 of 3
	Core Monitoring Year 3 of 3

Contact Information

Lead Applicant/ Principal Investigator: Every work plan application requires one lead applicant. This lead is accountable for the entire work plan and all deliverables.	Dr. Ave Dersch
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Project Summary

In the space below, please provide a summary 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 and **should not exceed 300 words**.

Aquatics ($110,660 Core)- the objective is to answer key community questions related to impacts from OSD on fish, surface water, and benthos. Our approach has been to partner with AEP's and ECCC's PIs on SOP training while incorporating IK to inform culturally relevant indicators with the ultimate goal of developing thresholds based on IK. In 2024-2025 we will hold another fish camp at Winefred Lake to collect information to measure our existing and emerging fish indicators, CPFN field technicians will partner with ECCC benthos to sample existing sites and new CPFN sites, and we will continue working with ALMS to train on SOPS and to expand our surface water monitoring program.

TBM Moose ($83,760 Core)- the objective is to answer key community questions related to impacts from OSD on moose populations and health. This includes continuing to partner with ABMI on the deployment, retrieval, and tagging of wildlife camera traps (in ways that will integrate with the larger ABMI BADR program) as well as exploring how IK indicators can be identified via photos.

TBM Berries ($28,360 Focus)- the objective is to answer key community questions related to impacts from OSD on CPFN's ability to harvest berries. This will include continued community engagement to explore and define OS development pathways related to access (i.e., we will map areas where CPFN can no longer harvest berries due to OSD gates or encroachment from OSD employees/contractors). We will partner with Cold Lake First Nations.

TBM Pitcher Plant ($19,210 Focus)- the objective of this work is to understand the impacts of winter access roads on pitcher plant populations in partnership with Scott Neilsen's Lab/ABMI, Cold Lake First Nations, and BADR PIs. CPFN IK has told us that pitcher plants do not grow back after winter roads are established.

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 Adaptive Monitoring 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 Adaptive Monitoring 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 or areas of limited knowledge is the work being designed to answer with consideration for the TAC specific Scope of Work Document (attached) and the Key Questions (attached)?
- Discuss results of previous monitoring/studies/development and what has been achieved to date. Please identify potential linkages to relevant sections of the State of Environment Report.

The key drivers of the project are key community questions related to potential impacts from OSD. The questions inform culturally relevant receptors and indicators. Both our aquatics and TBM work are currently focused on establishing baseline conditions and will then move into surveillance. Current gaps include community defined limits of change/thresholds and the issue of pre-development baseline which we continue to work on defining and characterizing. The project meets the mandate of the OSM Program as we are ensuring that our indicators are sensitive to impacts from OSD and thus focused on understanding change caused by OSD.

Aquatics- To date (via our 20-21, 21-22, 22-23 workplans and start of our 23-24 workplan) we have begun to understand and use the core program's Fish SOPs and produced analytical results from fish samples from several important fishing lakes as well as defining culturally relevant fish receptors and indicators. We have also made progress on defining pre-development fish populations in a number of lakes via lake coring, dating, and sedDNA (and have presented on this work at several conferences and have recently published a manuscript). In addition, two CPFN youth have become trained CABIN field technicians and have joined crews to sample both existing ECCC and new CPFN sites. Finally, we attended a Fish Camp training program in Beaver Lake October 4-6, 2023.

TMB Moose- In 21-22 we completed community engagement and received training and deployed 20 wildlife cameras with support from ABMI. In 22-23 we continued to develop culturally relevant receptors and indicators, completed further classroom and field training with wildlife cameras, deployed an additional 15 cameras, along with using the WildifeTrax program to tag photos from 21-22 and 22-23. Two CPFN Youth completed the UNBC environmental monitoring certificate.

TBM Berries- this small study explores access effects caused by OSD as an impact pathway on CPFN berry harvesting as this is currently a poorly characterized pathway. A youth berry camp was held in the late summer of 22-23 at Cowpar Lake in partnership with Sekweha (the CPDFN youth centre). Our 23-24 berry work is ongoing.

TBM Pitcher Plants- this small study looks at how OSD winter access features impact pitcher plant populations. The impact of winter access roads on pitcher plant populations is a yet unstudied OSM stressor. The Scott Neilsen Lab prepared a methodology for CPFN/CLFNs (see attached) and fieldwork was completed mid October 22-23 and 23-24 in partnership with CLFNs. We are working with the Neilsen lab to analyze field data and we prepared a publication based on our 20-21 pitcher plant work.

Much of our information collected to date would make excellent contributions to SoE reporting but our sedDNA work is our most mature and novel work to date related to characterizing pre-development baselines. We have published a manuscript on this work.

The key drivers of the project are key community questions related to potential impacts from OSD. The questions inform culturally relevant receptors and indicators. Both our aquatics and TBM work are currently focused on establishing baseline conditions and will then move into surveillance. Current gaps include community defined limits of change/thresholds and the issue of pre-development baseline which

we continue to work on defining and characterizing. The project meets the mandate of the OSM Program as we are ensuring that our indicators are sensitive to impacts from OSD and thus focused on understanding change caused by OSD.

2.0 Objectives of the Work Plan

List in point form the objectives of the 2024/25 work plan below

Aquatics and TBM Moose
-build CPFN capacity with regards to existing western science approaches (SOPs) used in aquatics and TBM within the OSMP
-continue to integrate IK into these approaches and SOPs to ensure that the monitoring includes culturally relevant receptors, indicators, and limits of change/thresholds
-collect environmental monitoring data that contributes to the aquatics and TBM core programs and to SoE reporting

TBM Berries
-determine if 'access' is an OSD impact pathway effecting CPFN berry harvesting

TBM Pitcher Plants
-determine if OSD winter access features impact pitcher plant populations

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)
- consider the TAC-specific Scope of Work document and the key questions
- integrate western science with Indigenous Community-Based Monitoring)
- address the Adaptive Monitoring 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 Theme

Please select the theme(s) your monitoring work plan relates to:

☐ Air	☐ Groundwater	☑ Surface Water	☐ Wetlands
☑ Terrestrial Biology	☐ Data Management Analytics & Prediction		☑ Cross Cutting

3.2 Core Monitoring, Focused Study or Community Based Monitoring

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.

Community Based Monitoring

Themes

Please select the theme from the options below. Select all that apply.

☐ Air	☐ Groundwater	☑ Surface Water	☐ Wetland
☑ Terrestrial	☐ Cross-Cutting		

3.3.1 Surface Water Theme

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

Cross Cutting

3.3.1.2 Surface Water Key Questions:

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

Has baseline been established? Have thresholds or limits of change been identified?

No, we are still working on establishing baselines along with thresholds/limits of change.

Are changes occurring in water quality, biological health (e.g., benthos, fish) and/or water quantity/flows relative to baseline? If yes, is there evidence that the observed change is attributable to oil sands development? (Describe source-pathway-receptor and/or conceptual models and what is the contribution in the context of cumulative effects?)

We are currently in the stage of establishing baseline conditions with respect to our surface water, fish, and benthos indicators. We are selecting indicators that will be sensitive to change from oil sands development so that during the surveillance portion of our monitoring we can detect change from OSD and ultimately be able to articulate OSD's contribution in the context of cumulative effects.

Are there unanticipated results in the data? If yes, is there need for investigation of cause studies?

No, however we are currently only in the stage of establishing baseline conditions with respect to our surface water, fish, and benthos indicators.

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

Yes, our program focuses on establishing culturally relevant receptors and indicators (and limits of change linked to Sec 35 rights) while still remaining integrated in the core aquatics program by using their SOPs.

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

All of the analytical data is produced following OSM requirements, is open by default, and will be shared with the OSMP for use in SoE reporting. Data sharing categories related to western science data generated by ICBM programs is forthcoming from ICBMAC.

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

Fish- we will follow SOPs developed by AEP and ECCC and as vetted by several Indigenous communities and compiled by the ICBM Facilitation Centre. Surface Water Quality- we will follow SOPs from ALMS. Benthos- we will use ECCC's CABIN program as our SOP (they are also working to finalize these SOPs with input from ICBMAC). We also attended the Aquatics training program in Beaver Lake October 4-6, 2023.

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

At a high level we follow integration best practices as outlined in ICBMAC's Integration document. At a more practical level we will work closely with Keegan Hicks (AEP), Mark McMaster (ECCC), and Lucie Levesque (ECCC) and all other Indigenous communities completing aquatics work in the sub region (e.g., Willow Lake Metis, Cold Lake First Nations, Beaver Lake Cree Nation) to ensure we are using the same SOPs. At the 2023 Beaver Lake Aquatics training the communities who attend discussed practical approaches for how to work together to accomplish integration and not duplication. For example, CPFN and Willow Lake Metis sample different locations on Winefred Lake.

With consideration for adaptive monitoring, where does the proposed monitoring fit on the conceptual model for the theme area relative to the conceptual model for the OSM Program?

Our monitoring is still within the baseline collection period and we look forward to moving to surveillance in 3-5 years. Within the ICBMAC conceptual model we are working on integrating culturally relevant receptors and indicators into the existing core aquatics program. As mentioned above we are striving to

select indicators that are sensitive to change from OSD. Parallel work includes working with IK holders to develop limits of change as informed by a pre-development baseline in order to detect when impacts on Sec 35 rights occur.

How will this work advance understanding transition towards adaptive monitoring?

Our work is still within the baseline collection period and will transition to surveillance in 3-5 years. We are following an adaptive monitoring framework.

Is the work plan contributing to Programmatic State of Environment Reporting? If yes, please identify potential linkages to relevant sections of the State of Environment Report.

Yes, all analytical data will be provided for SoE reporting. Based on further discussions with the OSMP and implementation of the OSM Ethics Guidelines there is the potential from some IK data to also be included in SoE reporting. Note that Data sharing categories related to western science data generated by ICBM programs is forthcoming from ICBMAC.

3.3.5 Terrestrial Biology Theme

3.3.5.1 Sub Themes

Wildlife

3.3.5.2 Terrestrial Biology - Key Questions:

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

Has baseline been established? Have thresholds or limits of change been identified?

No, we are still working on establishing baselines along with thresholds/limits of change.

Are changes occurring in terrestrial ecosystems due to contaminants and landscape alteration? If yes, is there evidence that the observed change is attributable to oil sands development? (Describe source-pathway-receptor and/or conceptual models) and what is the contribution in the context of cumulative effects?

The BADR design has been specifically designed to identify environmental change attributable to oil sands activity against a reference or baseline condition. BADR achieves this by examining environmental response along stressor gradients at various spatial scales. BADR will allow for clearer linkages between both the effects of specific development components and broader cumulative impacts on the priority indicators.

Are there unanticipated results in the data? If yes, is there need for investigation of cause studies?

No, however we are currently in the stage of establishing baseline conditions with respect to our camera trap work.

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

CPDFN has observed changes in culturally important mammal species over time due to increased land use and industrial development. For example, in many areas moose are harder to find for hunting purposes, and in some cases animal health appears to have declined. Hunting and trapping are important practices in the community, and sustainable, healthy populations of animals are necessary to the traditional way of life and for the meaningful exercise of Section 35 rights.

CPDFN plans to build and run a Moose Monitoring Program that will track changes in a culturally important mammal species relative to OSD. CPDFN will be working with ABMI to developed culturally relevant receptors and indicators for moose that fit within their existing BADR design and camera trapping SOPs.

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

Yes- we are committed to alignment with OSM data requirements as these requirements are developed and distributed. Data sharing categories related to western science data generated by ICBM programs is forthcoming from ICBMAC.

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

Yes- Standard Operating Procedures and protocol documents for data collection, management, and analysis are being used.

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

Data collection is aligned under a unified monitoring design (BADR) grounded in the OSM conceptual model, and aligned within the EEM paradigm. CPDFN is collaborating and thus integrated with other Indigenous communities partnering with ABMI including Cold Lake First Nations and Beaver Lake Cree Nation. Although our 21-22 camera placement focused more on answering key community questions than the BADR design we used 22-23 to re-align ourselves.

With consideration for adaptive monitoring, where does the proposed monitoring fit on the conceptual model for the theme area relative to the conceptual model for the OSM Program?

There is evidence of change in a range of terrestrial taxa at the regional scale. BADR is specifically designed to more fully examine the magnitude of these and other observed changes in indicators in response to a gradient of oil sands disturbance. In an adaptive process, BADR allows for stronger

attribution of change and finer resolution in understanding of linkages between change and specific oil sands activities.

Data collected by the CPFN program will provide relationships of moose to OSD at the community scale which in conjunction with data shared with/between Cold Lake and Beaver Lake Cree Nations can be input onto a regional scale to identify commonalities in Indigenous concerns of harvest use and development of a regional monitoring program for moose in the OSA.

The conceptual model is fundamental to integration because it provides a consistent framework for all monitoring within and among OSM Themes. Thus our work with ABMI uses the conceptual model to:

-Prioritize key linkages with oil sands-related stressors which have the potential to significantly affect the Valued Components at local, sub-regional and/or regional scales over various time scales;
-Ensure that monitoring addresses complete linkages across the model from stressors through pathways to responses which, in turn, affect the Valued Components;
-Assist in identifying linkages which may contribute to cumulative effects of multiple stressors or cumulative effects of individual stressors distributed across various spatial scales;
-Provide clarity regarding the required points of integration with other OSM Themes (e.g., connecting work on atmospheric deposition with work on responses in wildlife); and
-Explicitly illustrate the linkages to Indigenous Valued Components.

How will this work advance understanding transition towards adaptive monitoring?

Our work is still within the baseline collection period and will transition to surveillance in 3-5 years. We are following an adaptive monitoring framework.

Is the work plan contributing to Programmatic State of Environment Reporting? If yes, please identify potential linkages to relevant sections of the State of Environment Report.

Yes- Data and information to be generated from the proposed workplan will be incorporated into OSM State of Environment (SoE) Reporting following guidance of the SoE Writing Group. Data sharing categories related to western science data generated by ICBM programs is forthcoming from ICBMAC.

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 consider adaptive monitoring and the approved Key Questions in your response.

Through our aquatics and TBM work we are working towards establishing limits of change with regards to impacts on Sec 35 rights. When thresholds are approached or crossed this should trigger management actions. With regards to our small berries focus study of our work, access impacts to berry patches caused by OSD could be immediately resolved by working with OS proponents. In addition, if we are able to demonstrate that winter roads used in OSD impact pitcher plant populations we would work with OS proponents to avoid pitcher plants populations in future OSD winter access routes.

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

This workplan is driven by CPFN's key community questions and concerns that we continue to use to inform and develop culturally relevant receptors, indicators, and limits of change. A key aspect of this workplan is to create capacity within CPFN through training in SOPs with the aspiration of partnering or even eventually taking over certain sampling locations within the OSM core programs. OSM's draft ethics protocols will be adhered to (specifically in regards to the collection, validation, and use of IK) in this workplan (i.e., OPAC principles) as will be CPFN's internal ethics policies (such as including a letter of support from CPDFN senior management to support this workplan, an informed consent process, and community verification).

Does this project include an Integrated Community Based Monitoring Component?

Yes

If YES, please complete the ICBM Abbreviated Work Plan Forms and submit using the link below

ICBM WORK PLAN SUBMISSION LINK

5.1 Alignment with Interim Ethical Guidelines for ICBM in the OSM Program

Are there any community specific protocols that will be followed?

Yes, we will follow CPDFN's interim ethical guidelines.

Does the work plan involve methods for Indigenous participants to share information or knowledge (e.g. interview, focus group, survey/structured interview), or any other Indigenous participation? If yes, describe how risks and harms will be assessed, and the consent process that will be used.

Yes. Any activity that involves the collection of Indigenous knowledge (IK) will begin with an informed consent process whereby the following topics will be explained to IK holders: objectives and purpose of the study, the researchers, their participation, their privacy, risks and benefits, how their information will be used, conflict of interest, verification, and their consent (written or oral).

Do the activities include any other collecting/sharing, interpreting, or applying Indigenous knowledge? Please describe how these activities will be conducted in alignment with the Interim Ethical Guidelines, and any community-based protocols and/or guidelines that may also apply.

Yes, IK will be interpreted and applied. This process will be iterative with IK holders to ensure that the IK is not extracted and de-contextualized in a western science context. As per CPFN's interim ethical guidelines, a verification meeting will be held at the end of the year to ensure that IK holders are in support of final applications and presentations of IK.

Indicate how Indigenous communities / Indigenous knowledge holders will be involved to ensure appropriate analysis, interpretation and application of data and knowledge.

As discussed above, an iterative process with IK holders will ensure that analysis, interpretation and application of their IK is appropriate and done cooperatively. As per CPFN's interim ethical guidelines, a verification meeting will be held at the end of the year to ensure that IK holders are in support of how their IK has been analyzed, interpreted, and applied.

How are Indigenous communities involved in identifying or confirming the appropriateness of approach, methods, and/or indicators?

This workplan is led by an Indigenous community (CPFN) who are thus able to develop approaches, methods, and indicators that are appropriate to them. Iterative 'check ins' with grass roots community members is critical.

How does this work plan directly benefit Indigenous communities? How does it support building capacity in Indigenous communities?

The workplan directly benefits CPFN youth through training and employment (i.e., we employ a minimum of 2 youth full time). It benefits land users and elders by answering their questions related to impacts of oil sands development on various aspects the exercise of their Section 35 rights in an ethical and inclusive manner. It also benefits land users and elders by exposing them to western scientists from AEP, ECCC, ALMS, ABMI, and UofA who they are able to share their perspective with and build relationships with.

How is the information from this work plan going to be reported back to Indigenous communities in a way that is accessible, transparent and easy to understand?

Previous year's results will be presented in person and accompanied by a plain language summary large community wide meetings, at fish camp in small groups, and at on the land sessions. Plain language summaries and visuals will also be presented and provided at the Elder's Christmas party and year end supper. Dene translators are on hand at all events. As possible and appropriate, results are also presented via programs in Father Perin school.

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 how can be assessed against a baseline condition. As relevant, consider adaptive monitoring, the TAC specific Scope of Work document and the Key Questions in your response.

With our aquatics and TBM moose work we are still establishing baseline conditions but will then move into surveillance. As we continue to develop culturally relevant indicators we are mindful that they must be sensitive to change, of sufficient power to detect change, include indicators along the spectrum of response, focus on areas of highest risk, and measure change along a stressor gradient.

We are also mindful while we develop our culturally relevant indicators that in many cases IK has already detected change where western science has not yet detected this change. We will continue to work within the core program to design SOPs to demonstrate this change.

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, consider adaptive monitoring, the TAC specific Scope of Work document and the Key Questions in your response.

With our aquatics and TBM moose work we are continuing to figure out how best to include culturally relevant receptors (i.e., fishing lakes or moose hunting areas) within core programs in a way that is complementary rather than contradictory to the existing core program. We will continue to work sub regionally with Cold Lake First Nations and Beaver Lake Cree Nation along with Keegan Hicks (AEP) and ABMI and to optimize scale.

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, consider adaptive monitoring, the TAC specific Scope of Work document and the Key Questions in your response.

As mentioned previously, all analytical data results will be open by default and available to inform SoE reporting. We also welcome OSMP, AEP, and ECCC staff to attend our Fish camp (and other community results sharing events and gatherings) along with other Indigenous communities. We will be preparing a year end progress report as a deliverable and will take advantage of opportunities to present our work to our Indigenous peers and OSM colleagues if a conference, webinar series or gathering is organized. We also have peer reviewed papers of the results of our pitcher plant and sedDNA research which has recently been published. Note that Data sharing categories related to western science data generated by ICBM programs is forthcoming from ICBMAC.

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, consider adaptive monitoring, the TAC specific Scope of Work document and the Key Questions in your response.

For our aquatics work we will be working closely Keegan Hicks (AEP), Mark McMaster (ECCC) and Lucie Levesque (ECCC) (and other Indigenous communities as possible, i.e., Cold Lake First Nations) to co-locate monitoring locations, to ensure efforts are not duplicative, and to ensure we are using common SOPs. Through this work we hope to support this TAC in compiling aquatics SOPs that new Indigenous communities can utilize (note that Fish SOPs for ICBM use are already complete). All crew members will be local community members with limited inclusion of outside consultants. As other communities in the region develop their program we may reduce the number of lakes we sample (i.e., we have handed over Christina Lake to Conklin to sample and hope to support them in learning how to host a Fish Camp in 23-24).

For our TBM work we will be working within the ABMI moose camera trapping program focusing on their specific LUs and using their SOPs. We are working with Cold Lake First Nations and Beaver Lake Cree Nation on this work and look forward to sharing and including our work with other Indigenous communities in the southern Athabasca and Cold Lake oils sands region. Specific information related to placement of cameras, habitat descriptions etc. will include discussions with Elders and Indigenous knowledge holders. All crew members (youth and elders) will be local community members with limited inclusion of outside consultants.

10.0 Work Plan Approach/Methods

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

AQUATICS-
1-Project Management (ongoing): admin, planning/scoping, equipment purchase, safety training, meetings with AEP, ECCC, ALMS, community coordinators, other communities, etc.
2-Summer Lake Monitoring Training: ALMS training for youth monitors will be provided as an instruction guide, YouTube videos, and two trips by ALMS to the community annually – to sample a lake together both in summer and winter. CABIN training (online and field) for youth monitors.
3- Fall Benthos Sampling: ongoing training and sampling of OSM and CPDFN rivers (i.e., Kettle River) with youth monitors.
4- Fall Whitefish Camp at Gipsy Lake: training on fish SOPs and continued development of culturally relevant indicators (i.e., flesh firmness). (This camp happens in winter if fall moose hunting makes scheduling prohibitive.)
5- Winter Jackfish Camp at Winefred Lake: training on fish SOPs and continued development of culturally relevant indicators (i.e., nematode cysts)
6-Data Management/Analysis: compilation of all fish, surface water, and benthos field data into AEP (OSM) and CPDFN databases (as supported Service Alberta). (Note that Data sharing categories related to western science data generated by ICBM programs is forthcoming from ICBMAC.)
7-Reporting: OSM deliverables, community summary document, CPFN internal technical document, materials for TACs.

TBM MOOSE-
1-Project Management (ongoing): admin, planning/scoping, equipment purchase, safety training, meetings with ABMI, community coordinators, other communities, etc.
2-Summer Training: camera set up, retrieval, tagging photos by youth monitors and ongoing training
3- Fall Moose Camp: community engagement and continued development of culturally relevant moose indicators that can be detected in photos (i.e., posture, coat condition, fatness)
4-Data Management/Analysis: compilation of moose camera data and moose camp data into ABMI (OSM) and CPDFN databases (as supported by Service Alberta). (Data sharing categories related to western science data generated by ICBM programs is forthcoming from ICBMAC.)
5-Reporting: OSM deliverables, community summary document, CDFN internal technical document, materials for ICBM Facilitation Centre

TBM BERRIES-
1-Project Management (ongoing): admin, planning/scoping, meetings with community coordinators, other communities, etc.
2- Berry Camp: work with berry pickers to discuss access as an OSD impact pathway
3- Reporting: OSM deliverables, community summary document, CPFN internal technical document

TBM PITCHER PLANT-
1-Project Management (ongoing): admin, planning/scoping, equipment purchase, safety training, meetings with ABMI/UofA, community coordinators, other communities, etc.
2- Summer/Fall Fieldwork: complete field surveys
3- Reporting: OSM deliverables, community summary document, CPFN internal technical document

Describe how changes in environmental Condition will be assessed

Aquatics- we are currently establishing baseline conditions in preparation for moving to surveillance monitoring. We are also focusing on ongoing work to establish culturally relevant indicators and thresholds.
TBM Moose- we are following a modified version of ABMI's BADR framework using wildlife cameras
TBM Berries- we will explore how access effects (i.e., gates) from OSD impact berry harvesting
TBM Pitcher Plant- pitcher plant densities will be compared on, adjacent to, and off winter access features

(see attached)

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

None, the work of developing these is in progress and should be completed at the end of year 3.

(e.g., objectives, tiers, triggers, limits, reference conditions, thresholds, etc.)

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

Aquatics- we will be using ECCC/AEP's fish SOPs (previously vetted by ACFN/MCFN), ECCC's CABIN method, and ALMS SOPs for surface water quality.

TBM Moose- we will be using ABMI wildlife camera SOPs and BADR framework

TBM Berries- we will use social science methodologies (i.e., a semi structured interview guide) to map and document how and where OSD access effects have impacted CPDFN berry harvesting

TBM Pitcher Plant- we will be using an SOP designed in 22-23 by Scott Neilsen's Lab (UofA) for CPFN and CLFNs (see attached)

For all projects all IK will be collected in accordance with the OSM Ethics guideline and CPFN internal policies.

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

Aquatics-
Surface Water Quality: Major ions (e.g., calcium) nutrients (e.g., phosphorus) physical parameters (e.g., total suspended solids), total and dissolved metals (e.g., lead), total and dissolved mercury and methylmercury, total and dissolved polycyclic aromatic hydrocarbons (e.g., phenanthrene), water isotopes, and naphthenic acids (key sites to be determined and dependent upon the availability of suitable reference material).
Benthic macroinvertebrates: Benthic macroinvertebrate assemblage, EEM benthic macroinvertebrate endpoints (total abundance, Simpson's Diversity, Simpson's Evenness, Taxa Richness and Bray-Curtis)
Fish: Fish weight, fish length, fish age, gonad weight, liver weight, condition factor, gonadosomatic indices, liver somatic indices, EROD activity, muscle PACs and alkylated PACs and Hg.
IK indicators: work in progress (i.e., flesh firmness using a qualitative scale)

TBM Moose-
-we will be using ABMIs wildlife camera indicators but will be working on developing our own set of culturally relevant indicators at Moose Camp including those that can be measured by looking at a black and white photo (i.e., coat condition, posture, fatness)

TBM Berries-
-access to significant blueberry and low bush cranberry patches

TBM Pitcher Plant-
-pitcher plant abundance (frequency)

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.

We plan to hold both community meetings/engagement sessions and take part in regional or subregional gatherings to share our results with other Indigenous groups. Our fish, berry, and moose camps are also great ways to bring people together to share information. We are keen to work with the ICBM Facilitation Centre to help them with compiling SOPs and best practices documents. We also hope to produce a publication on our pitcher plant research and a publication on our sedDNA work is forthcoming.

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

Aquatics- all analytical lab work contracts for fish are being managed by Keegan Hick's (AEP) (and Mark McMaster (ECCC)) and are in Keegan's workplan. Keegan is also managing the DNA lab work in the UVic Helbing Lab (eDNA and sedDNA). All water quality lab work is part of the ALMS workplan.

TBM Moose- we will work with ABMI as well as AEP's social scientist Vanessa de Koninck.

TBM Pitcher plant- we will work with Scott Nielsen's lab (U of A).

*In outlining our partners above, the only partner with a cost contained in this workplan is the costs for our analytical fish lab work (managed by Keegan Hicks but paid for by CPFN).

*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 2024-25 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.

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

No

13.2 Type of Quantitative Data Variables**:**

Discrete

13.3 Frequency of Collection:

Other

13.4 Estimated Data Collection Start Date:

Jun 1, 2024

13.5 Estimated Data Collection End Date:

Mar 31, 2025

13.6 Estimated Timeline For Upload Start Date:

Sep 1, 2024

13.7 Estimated Timeline For Upload End Date:

March 31, 2024

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

No

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

Add a Data Source by clicking on the add row 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, xlsx, etc.)	Security Classification
ICBM western science data	AEP data portal	Various including csv	Open by Default
ICBM IK data	CPFN Community Knowledge Keeper	Various	Protected by Default

14.0 2024/25 Deliverables

Add an additional deliverable by clicking on the add row on the bottom right side of table

Type of Deliverable	Delivery Date	Description
OSM Program Annual Progress Report (required)	Q4	Summary of work done over the course of the workplan
Stakeholder or Community Presentation	Q4	We would like to present our work at a gathering of Indigenous communities as Organized by ICBMAC or the PO
Other (Describe in Description Section)	Q4	Contribution to SoE or Condition of Territory Reporting
Peer-reviewed Journal Publication	Q4	Papers related to our sedDNA and socio-cultural indicator work are in progress.

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.

Project Lead- Chipewyan Prairie First Nation (Ave Dersch)

ECCC and AEP Integration Teams:
SW Quality: Lucie Levesque (ECCC lead), Keegan Hicks (AEP lead), Nancy Glozier, Kern Lee, Yi Yi, Kerry Pippy, and technical staff
Benthic macroinvertebrates: Lucie Levesque (ECCC lead), Kristin Hynes (AEP lead), Nancy Glozier, Bob Brua, Justin Hanisch, Allison Ritcey, and technical staff
Fish: Mark McMaster/Erin Ussery (ECCC lead), Keegan Hicks (AEP lead), Fred Noddin, and technical staff
Social Science: Vanessa de Koninck
TBM: Bruce Pauli
Muskrat Work: Phil Thomas (ECCC lead)

Academic collaborators:
University of Victoria - Caren Helbing Laboratory
University of Alberta- Scott Nielsen's Laboratory

Other collaborators:
ALMS: provides training; sampling equipment, bottles, and COCs; coordination of laboratory analyses; data management; and support for evaluation and reporting
ABMI: Monica Kohler and David Evans
Indigenous Communities: Chard Metis, Cold Lake First Nations and Beaver Lake Cree Nation.

****Note that the community of Janvier is made up of both CPFN members and Chard Metis members who are closely related through kinship networks and share a common history and use of the land. CPFN has always and will always continue to execute their OSM workplan for the benefit of the entire community of Janvier and all camps, school programs, training programs, community meetings, and employment opportunities are available and open to both CPFN and Chard Metis members. When honorarium is provided at open houses, camps, etc. both CPFN and Chard Metis Elders are provided honorarium.

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 AEPA 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 AEPA

Add an additional AEPA Staff member by clicking on the add row below the 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
Hicks, Keegan	Support Surface Water work	0

Table 16.1.2 ECCC

Add an additional ECCC Staff member by clicking on the add row below the table. The total FTE (Full Time Equivalent) is Auto Summed (in Table 16.2.2) and converted to a dollar amount.

Name (Last, First)	Role	%Time Allocated to Project
Mark McMaster/Ein Ussery	Support Fish Work	0
Lucie Levesque	Support Benthos Work	0
Bruce Pauli	Support TBM Work	0

The tables below are the financial tables for Alberta Environment & Protected Areas (AEPA) 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. Please note that completion of this Project Finance Breakdown Template is mandatory and must be submitted along with each workplan.

PROJECT FINANCE BREAKDOWN TEMPLATE

Table 16.2.1 Funding Requested BY ALBERTA ENVIRONMENT & PROTECTED AREAS

Organization - Alberta Environment & Protected Areas ONLY	Total % time allocated to project for AEPA staff	Total Funding Requested from OSM
Salaries and Benefits (Calculated from Table 16.1.1 above)	0	$0.00
Operations and Maintenance		
Consumable materials and supplies		
Conferences and meetings travel		
Project-related travel		
Engagement		
Reporting		
Overhead		
Total All Grants (Calculated from Table 16.4 below)		$256,990.00

Total All Contracts (Calculated from Table 16.5 below)	$0.00
Sub-Total (Calculated)	$256,990.00
Capital*	
AEPA TOTAL (Calculated)	$256,990.00

* 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 (Please manually provide the number in the space below)	0	$0.00
Operations and Maintenance		
Consumable materials and supplies		
Conferences and meetings travel		
Project-related travel		
Engagement		
Reporting		
Overhead		
ECCC TOTAL (Calculated)		$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 add table below the table. The total of all Grants is Auto Summed in Table 16.2.1

GRANT RECIPIENT - ONLY: Name	Chris Heavy Shield
GRANT RECIPIENT - ONLY: Organization	Chipewyan Prairie First Nation
Category	Total Funding Requested from OSM
Salaries and Benefits FTE	$128,600.00
Operations and Maintenance	
Consumable materials and supplies	$43,050.00
Conferences and meetings travel	$0.00
Project-related travel	$12,340.00
Engagement	$39,000.00
Reporting	$19,000.00
Overhead	$15,000.00
GRANT TOTAL (Calculated)	$256,990.00

Table 16.4

Complete ONE table per Contract recipient.

Add a Recipient by clicking on add row below the 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	
CONTRACT RECIPIENT - ONLY: Organization	
Category	Total Funding Requested from OSM
Salaries and Benefits	
Operations and Maintenance	
Consumable materials and supplies	
Conferences and meetings travel	
Project-related travel	
Engagement	
Reporting	
Overhead	
CONTRACT TOTAL (Calculated)	$0.00

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 Sums totals for salaries and benefits from AEPA and ECCC ONLY	$0.00
Operations and Maintenance	
Consumable materials and supplies Sums totals for AEPA and ECCC ONLY	$0.00
Conferences and meetings travel Sums totals for AEPA and ECCC ONLY	$0.00
Project-related travel Sums totals for AEPA and ECCC ONLY	$0.00
Engagement Sums totals for AEPA and ECCC ONLY	$0.00
Reporting Sums totals for AEPA and ECCC ONLY	$0.00
Overhead Sums totals for AEPA and ECCC ONLY	$0.00
Total All Grants (from table 16.2.1 above) **Sums totals for AEPA Tables ONLY**	$256,990.00
Total All Contracts (from table 16.2.1 above) **Sums totals for AEPA Tables ONLY**	$0.00
SUB-TOTAL (Calculated)	$256,990.00
Capital* **Sums total for AEPA**	
GRAND PROJECT TOTAL	$256,990.00

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.

The PI (Dr. Ave Dersch) will perform quarterly reviews of budgets and deliverables. Deviations from the proposed workplan will be reported to the OSM program office, and management actions may be taken to facilitate meeting of budget and deliverable expectations.

Foreseeable risks to the program include:
-Delays in contracts and grants (as the time of writing this workplan 23-24 funds have still not been received)
-Integration with AEP, ECCC, ABMI, ALMS who currently have finite capacity for community engagement and capacity building
-If COVID-19 pandemic re-surfaces it may preclude in-person community engagement and capacity building and postpone monitoring. We will proceed as allowed by Federal, Provincial, and Indigenous governments.

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 add row on the bottom right side of table.

Description	Source	Equivalent Amount ($CAD)
CPFN Community Coordinator- Stuart Janvier	CPFN	$60,000.00
CPFN Truck	CPFN	$15,000.00
	TOTAL	$75,000.00

19.0 Consent & Declaration of Completion

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.

Lead Applicant Name

Dr. Ave Dersch

Title/Organization

Chipewyan Prairie First Nation (Industry Relations)

Signature

Ave J. Dersch Digitally signed by Ave Dersch
Date: 2023.11.02 10:48:18 -06'00'

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

Keegan Hicks, Mark McMaster, Lucie Levesque

Title/Organization

NA

Signature

Please save your form and refer to the instructions page for submission link.

Program Office Use Only

Governance Review & Decision Process

this phase follows submission and triggers the Governance Review

TAC Review (Date):

ICBMAC Review (Date):

SIKIC Review (Date):

OC Review (Date):

Final Recommendations:
Decision Pool:

Notes:

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):

SIKIC Review (Date):

OC Review (Date):

Comments:
Decision Pool:

Notes & Additional Actions for Successful Work Plan Implementation:

Signature