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## Don't Shoot Yourself in the Foot: Rethinking Environmental Management Plans

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### 1. INTRODUCTION

In British Columbia, the Environmental Assessment Office (EAO) manages environmental assessment (EA) of proposed major infrastructure and resource development projects and issues an Environmental Assessment Certificate (EAC) for approved projects. Modern EACs require a suite of environmental management plans (EMPs) to prevent or mitigate adverse effects. EMPs are legally binding and since 2012, EAO inspects and enforces compliance with commitments in EMPs.

Industry is learning through experience the challenges associated with management plans in this new era of modern EAs and compliance requirements. Past practices included writing vague EMPs pointing to generic best practices, as well as overcommitting proponents by including unsuitable and prescriptive measures prior to knowing construction details. The outcomes often result in avoidable environmental impacts, non-compliance, and contractual disputes during construction.

It is time for industry to re-think its approach to EMPs. This paper describes EMPs and presents select lessons learned and practical tips for owners to consider during the life cycle of the project.

### 2. WHAT IS AN ENVIRONMENTAL MANAGEMENT PLAN?

The EAO<sup>1</sup> describes an environmental management plan as “A document that groups mitigation measures that address a common objective or valued component. The two main types of management plans are: construction/operational environmental management plans which address adverse effects common to all projects; and project-specific management plans which address adverse effects to a valued component or topic.”

EMPs generally describe how the project will protect and mitigate environmental effects and monitor results. Plans can list or interpret regulatory requirements (e.g., EAO conditions, permit requirements), commitments to Indigenous groups, and owners' environmental standards. Plans can outline or specify industry best practices, thresholds or targets, procedures, materials, and techniques, and other relevant information.

For simplicity, we will use the term Environmental Management Plan (EMP)<sup>2</sup> through the remainder of this document.

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<sup>1</sup> BC EAO. 2021. Environmental Assessment Certificate Policy: Drafting Conventions for Environmental Assessment Certificates, Certificate Amendments, and Exemption Orders. Ver 2.0. BC Environmental Assessment Office, Victoria, BC.

<sup>2</sup> Note that EA Certificates typically require non-environmental management plans as well, for example socio-economic effects management plans. While this paper does not specifically address those plans, the lessons and tips presented in this paper are often applicable to those plans as well.

### **3. LIFE CYCLE OF ENVIRONMENTAL MANAGEMENT PLANS**

The life cycle of major infrastructure and resource development projects comprises planning and environmental assessment, pre-construction and permitting, construction and monitoring, operations, and decommissioning. The life cycle of EMPs tends to follow these project phases.

During the EA, EMPs give confidence to regulators, Indigenous groups, and other participants in the regulatory process about how adverse effects to valued components will be mitigated. Post EA and prior to construction, EMPs are updated and submitted for Indigenous consultation and regulatory approval, often supporting permit acquisition. Concurrent with this step, EMPs may be relied on as part of the process for procuring contractors. During construction, EMPs outline requirements for contractors to minimize environmental effects of construction activities. Although not discussed further in this paper, some projects may require EMPs for post-construction phases described above.

#### Lessons Learned and Practical Tips:

The purpose of EMPs, and often the team writing the EMPs, changes between project phases. Remember that EMPs required by EAO certificates are legally binding and enforceable, so what you write in the EA phase can influence environmental compliance later on. Consider the full life cycle of EMPs at each phase:

1. What is your starting product and what is its purpose?
2. What do you need the plan to do in this phase of the project?
3. What will the next project phases require from this plan?

### **4. ENVIRONMENTAL ASSESSMENT PLANS**

During the EA phase of a project, EMPs are developed to demonstrate that mitigation is likely to minimize effects to an acceptable level. Project design is typically incomplete, the contractor is not selected, and detailed construction techniques are not confirmed: there is moderate uncertainty about many project aspects. By necessity, EA phase EMPs are often vague, referring to generic BMPs rather than more specific mitigation. Conversely, with best intentions, EA-level EMPs can also make commitments that are overly specific and needlessly specify timing, location, or type of mitigation. In some cases, specific mitigation is required to get EA approval; however, detailed commitments may also prove to be unsuitable or unnecessary following final design, yet the project is held to those specifications during construction. Thus, EA-level EMPs are a delicate balance between specificity and flexibility.

## Lessons Learned and Practical Tips:

- Actively decide early how much detail you know and can commit to. Prioritize more specificity for the issues that will determine EA approval: higher risk = more detail.
- Be clear that the EMP is an early planning draft and that plans will be updated post EAC with more details.
- EMPs are about ideas at the EA stage so be careful around consultation: don't set expectations that plans won't change.
- Remember that EMPs have implications beyond environmental protection. For example, overcommitting in the EA phase may unnecessarily fetter the contractor's ability to innovate and provide best value and maintain schedule.

## 5. POST EA/PRE-CONSTRUCTION PLANS

Between EA and construction, EMPs are typically updated to incorporate requirements identified during the EA and evolving construction details. These “construction-ready plans” require careful re-assessment of project details, potential effects, and mitigation to ensure they are appropriate for the refined construction plan. However, owners frequently minimize change at this point, seeking instead to rely largely on the EA-level plans. The challenge here is that EA-level plans are written for a different audience, typically lack construction detail, and do not generally consider monitoring and compliance requirements.

## Lessons Learned and Practical Tips:

- Understand the ramifications of language and detail. Consider re-writing EMPs post-EAC rather than just tweaking them. Now is the time to provide more specificity and accountability. Resist the temptation to use vague language where details are known, and specific language when unnecessary.
- When determining the level of specificity, it is helpful to consider the potential effects and the owner's risk tolerance – not only environmental but also regulatory, reputational, and contractual risk. If the potential of effects is high and the owner's risk tolerance is low, more specificity in the EMPs may be needed to ensure construction is consistent with the owner's expectations.
- We recommend industry re-think its approach to flexibility in EMPs. Using vague language like “wherever possible”, “if practical” or even a picklist of mitigation options often creates compliance risk; if this flexibility is needed, specify who determines the mitigation considering what factors. Where possible (pun intended) we strongly suggest using S.M.A.R.T. language:
  - Specific
  - Measurable
  - Achievable
  - Realistic
  - Timely

- Think about evidence collection and management (documenting compliance) so you are prepared for implementation and oversight by regulators.
- Consider expanding project expertise and personnel involved with updating the plans. Ensure a broad team of experts in subjects including EA, permitting, construction, mitigation, monitoring, and procurement (see below) provide input to plans. The team should have general, project-specific, and local-environment knowledge.
- Ensure a cohesive approach to the full suite of EMPs. Typically, there are various teams developing different management plans (e.g., wildlife biologists would develop a Grizzly Bear plan while aquatic biology experts would develop a fish and fish habitat plan). This can result in incongruities between plans which can create compliance risks during regulatory oversight. Develop and cross reference a list of all commitments to ensure consistency among plans. This commitments list will also be foundational for future compliance management activities.
- Despite the best planning, unexpected conditions or results sometimes occur; therefore, a clear process to manage change, agreed by regulators, is critical. Be precise about what is and isn't a material change, and what the consultation and approval requirements are, if any.

## 6. PROCUREMENT AND MANAGEMENT OF CONTRACTORS

Selecting the contractor(s) and developing their contracts is an essential project phase between EA and construction. Considering the implications of EMPs to contractor selection and services, and vice versa, is similarly important. However, this important link is often overlooked with potentially significant implications for environmental compliance, project milestones, and cost.

### Lessons Learned and Practical Tips:

- Engage the procurement team, and consider engaging potential contractors, when revising EMPs in the 'post EA/pre-construction' phase.
- Work early with procurement to ensure EMPs and other environmental requirements are included in bid packages. Ensure contractor understanding of EMPs and plans to implement EMPs and achieve compliance are evaluated in contractor selection processes.
- Ensure EMPs and environmental requirements are included in contracts, including the requirement to comply with any plan updates.
- Include explicit language about compliance monitoring in contracts.
- Be specific in the EMP (and contract) if there is something particular you want the contractor to do, such as use specific equipment or materials, especially if it is important for EA approval or is associated with high environmental, regulatory, or reputational risk. Otherwise, the owner may not get the intended results from the contractor.
- Contractor implementation plans are typically required to complement EMPs to ensure environmental, regulatory, and reputational risks are managed consistently with the owner's risk tolerance. Be clear about expectations regarding author qualifications, content/level of detail, and review/approval process.

## 7. CONSTRUCTION: IMPLEMENTATION AND OVERSIGHT OF EMPS

The final project phase discussed in this paper is implementation and oversight of EMPS during construction. During this phase:

- The contractor implements mitigation
- The contractor and owner monitor results
- Regulatory agencies and sometimes Independent Environmental Monitors and Indigenous monitors provide oversight.

In the past, owners and contractors often considered EMPS ‘best practices’ or ‘guidance’ and assumed there was flexibility to vary commitments providing it was justifiable and there were no significant adverse effects. However, there may be no flexibility in jurisdictions where EMPS are enforced by regulators that may inspect against the literal wording of EMPS in addition to intent or outcomes.

To protect against unanticipated non-compliance and to better manage contractor performance, owners typically conduct their own oversight on contractor performance. However, the need for specific evidence of compliance with EMPS is often overlooked. Without evidence, it is difficult to contextualize sometimes one-off regulatory observations or to demonstrate that the Project is typically in compliance. This evidence provides due diligence and can impact overall compliance findings, as well as regulatory enforcement.

### Lessons Learned and Practical Tips:

- Unless the EMP specifies otherwise, consider everything written in the EMP as a firm commitment, including each criterion, threshold, mitigation measures, monitoring component, and other stipulation.
- Anticipate that regulators will be watching! Regulatory oversight will include environmental results, but also the procedures and documentation specified in the EMP.
- Demonstrate due diligence: we recommend owners proactively conduct their own oversight of the contractor(s). Document both environmental outcomes, but also the processes. Use your commitment list to identify and track evidence required to demonstrate compliance. This may include discrete field evidence (e.g., seed tags, pre-construction surveys, water quality monitoring etc.) as well as administrative tasks like checklists, issues tracking, and analysis.
- Don’t forget about oversight of contractors’ plans. Ensure these are prepared by qualified professionals, and verify they are consistent with EMPS and other project requirements. Given that contractor plans frequently evolve during construction, ongoing review for consistency with EMPS is recommended.
- Clearly delineate contractor responsibilities for compliance monitoring and evidence collection.
- Follow a rigorous management of change process that ensures clear documentation of all variances and revisions to the EMPS, including date, rationale and any other relevant information.

## **8. CONCLUSION**

The importance cannot be overstated of preparing clear, unambiguous environmental management plans throughout the life cycle of receiving EA approval, supporting contractor management, mitigating environmental effects, and achieving regulatory compliance. There are many other factors and topics critical to successful EMPs, including Indigenous consultation, that are not discussed here. However, the lessons learned and tips included above will help owners evolve their EMP practices and improve overall project performance, including environmental compliance.