How are follow-up programs implemented in Canada?

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Abstract

As part of the Impact Assessment (IA) process, follow-up programs provide a mechanism for evaluating what worked (or is working) when mitigating project-related effects and verifying whether the assessment predictions were accurate. Follow-up programs are required under Canada's *Impact Assessment Act* and some provincial or territorial processes such as the BC *Environmental Assessment Act or* through Nunavut Impact Review Board. The resulting Decision Statements, commitments, and conditions of such assessment processes describe the project's follow-up program and the required elements that it must contain. Through selected case-study, we evaluated examples of follow-up programs and considered ways to improve implementation to provide insights for future projects.

Introduction

Follow-up is defined under Canada's *Impact Assessment Act* (IAA) as a program for "verifying the accuracy of the impact assessment of a designated project and determining the effectiveness of any mitigation measures" (Government of Canada 2019). The IAA has accommodations for public participation and requires that the results of the follow-up program must be documented. This facilitates transparency and engagement with independent communities and external agencies. Follow-up as required by IAA and provincial or territorial jurisdictions includes recording data, evaluating against performance targets, adjusting during the project as warranted (adaptive management), and engaging stakeholders and rights holders. Monitoring — a key element of follow-up (Arts 2022) — includes activities that may fall outside the scope of the follow-up program, such as regulatory compliance activities.

Follow-up programs are integral to determining (1) if effects occur as predicted and (2) if mitigation effectively avoids or reduces effects as expected. At the assessment stage, decisions are made on the best available information, implying that project outcomes hold some uncertainty (Aarts and Morrison-Saunders 2022, Fitzpatrick and Williams 2020 , Morrison-Saunders et al. 2021). Globally, there are indications that mitigation measures prescribed in effects assessments may not achieve their anticipated objectives (Sánchez and Gallardo 2005), and the objectives or intended outcomes for many are only vaguely stated or not stated at all (Tinker et al. 2005). The purpose of follow-up is to enable improvement of assessment, mitigation, and ultimately, risk minimization for future projects (Aarts and Morrison-Saunders 2022, (Fitzpatrick and Williams 2020), Government of Canada 2019).

Objective

This paper examines the requirement for and implementation of follow-up programs through case-study of selected major projects in the Canadian province of British Columbia (western Canada temperate and coastal mountain) and the territory of Nunavut (northeastern Arctic Canada). Using a review of publicly accessible information and 'scorecard' approach, we provide a systematic account of the number of projects that commit to follow-up programs and a select review of how follow-up is implemented through case study of projects representative of differing jurisdictions.

Regulatory Context

Canada has separate federal, provincial, and territorial statutes and relevant regulations. The Federal *Impact Assessment Act — IAA* (Government of Canada 2019) makes follow-up programs mandatory in impact assessments and the development of approved projects. There are various regulatory statutes in provincial jurisdictions that require review of projects, and a project reviewed under provincial legislation may or may not be designated under the IAA.

The *British Columbia Environmental Assessment Act — EAA* (2018) requires an effects assessment. "Follow-up" is not mandated by law using that specific definition/terminology but is partly addressed in required project commitments within monitoring and management plans. An application undergoes review by a technical advisory group and if the Project successfully receives approval in the form of an Environmental Assessment Certificate (EAC), there are legally binding conditions. Permitting processes coincide or occur after a certificate is issued and result in additional required conditions. Since formal review by the Auditor General (OAGBC 2011), the BC Environmental Assessment Office has implemented policy resulting in EAC conditions being written with increased clarity, measurability, accountability, and with increased frequency of inspections.

The IAA does not apply to the territorial jurisdictions in Canada. Nunavut Impact Review Board (NIRB) has authority through Canada's Nunavut Agreement and has always required approved projects to have follow-up monitoring. The NIRB plays a review role during the Life of the Project, from project proposal to project approval (and associated terms and conditions) and ultimately monitoring and reporting. While the proponent often takes corrective actions as results show unexpected adverse effects, the NIRB can enforce project conditions to ensure that project monitoring and effects are within acceptable limits. Similarly, the EAO and IAA have compliance teams that inspect and enforce project conditions.

Investigative Approach

Our approach focused on two levels of analysis. First, we conducted a keyword search within the Assessment Reports, Decision Statements, and Certificates of approved projects to determine how often follow-up is a legally binding project commitment. Next, we used a selected case study to examine how follow-up is implemented compared to best practices. All information that we reviewed was from publicly accessible sources. No proprietary or information that EDI would have knowledge of due to contractual work on these projects was used during our review.

We selected all projects that were approved under the BC EAA or NIRB in the last 20 years. We then used the BC Environmental Assessment Office (BCEAO), NIRB, and Impact Assessment Agency of Canada (IAAC) public project registries to search project approvals and their attached schedules (i.e. the lists of conditions). The keywords, "follow-up", "monitoring", and "adaptive management" were searched to determine the proportion of projects that have follow-up as part of their legally binding conditions.

Through case-study, we reviewed three projects (two in BC and one in Nunavut) authorized from 2016 – 2018 that were in the construction or operation phase. We evaluated follow-up programs within these projects against five questions that encompass the best management practices in Aarts and Morrison-Saunders (2022), Fitzpatrick and Williams (2020) and Morrison-Saunders *et al*. (2021), as follows:

1. Was the follow-up plan designed and planned early in the IA process and followed through?
2. Was it implemented?
3. Was it publicly accessible?
4. Was it well-defined and enforceable?
5. Did it promote learning and adaptive management?

Selected projects were not comprehensively analyzed but scanned for keywords in the conditions and the monitoring reports. Results were constrained by ease of availability and accessibility of data. Given that accessibility of data is a factor related to effectiveness of follow-up, potential inconsistencies or gaps in sourcing information would be inherently reflected in the scoring.

Results

Keyword Search

We reviewed 40 projects that were approved under the BC *Environmental Assessment Act* and five that were approved by the Nunavut Impact Review Board (NIRB). Table 1 shows the results for the 45 projects summarized by the type of legislation they were approved under. The projects were approved between August 20, 2007 and October 10, 2023. Of the projects that were approved under the BC *Environmental Assessment Act*, 17 were designated and approved under Canada's federal legislation. Notably, all the projects under NIRB committed to follow-up programs, monitoring, and adaptive management. Most projects approved under both BC and federal legislation had evidence of follow-up commitments, and a majority of projects approved under BC legislation only lacked specific follow-up commitments.

Table 1. Keyword search in projects approved under BC Environmental Assessment Act and Nunavut Impact Review Board (NIRB).

Legislation	Total number of projects	Contained "Follow-up"	Contained "Monitoring"	Contained "Adaptive Management"
BC and Canada	17	88%	100%	88%
BC only	23	30%	100%	83%
NIRB	5	100%	100%	100%
Total	45	60%	100%	87%

Case Study

Results of the scorecard analysis are summarized in Table 2. We selected one project in each jurisdiction (Nunavut and BC) for selected case study:

1. Baffinland: Mary River Iron Ore Mine — Nunavut
2. Site C Clean Energy Hydroelectric dam — British Columbia

Table 2. Follow-up scoring against best practices.

Project Name	Jurisdiction	Designed /Planned	Implemented (Y/N)	Publicly Accessible (Y/N)	Well-defined, Enforceable	Promotes Learning
Mary River	NU	Referenced - Clear Plan	Yes	Yes	Clearly Defined	Good
BC Hydro Site-C	BC	Referenced - Clear Plan	Yes	Yes	Clearly Defined	Good

1. Baffinland: Mary River Iron Ore Mine (Nunavut)

This project refers to a 6 Mtpa iron ore mine located in the Canadian High Arctic on the lands and waters of the Qikiqtani Inuit. The Environmental Assessment Certificate (EAC) was issued in 2012 which outlines many terms and commitments [regarding ongoing effects monitoring, mitigations, and adaptive management]. Numerous project-specific follow-up and effects monitoring plans have been actions across multiple disciplines including marine mammal response to shipping, risk of invasive species introduction, caribou response to disturbance (to name just a few) each with defined schedules and reporting requirement. Although there is some redundancy/overlap among some management (e.g. "Caribou Protection Plan" that is distinct from the broader "Wildlife Protection Plan") these tools are intended to address changing Project needs. Plans published by the proponent are publicly accessible (https://www.baffinland.com/media-centre/document-portal/); annual reports are available through government registries and online inventories. In terms of accountability, there are schedules and requirements specific to meeting project terms and conditions. Findings are reported to and within specific Working Groups used as 'sounding-boards' for discussion on adaptive management and program improvements, including ancillary investigations and pilot studies. Although there has been difficulty in achieving consensus and/or shared understanding for certain topics, the Working Groups have been successful forums for improving/enhancing data capture and verifying monitoring assumptions — and facilitating dialogue between Working Group members. More recently, revised terms of reference have shifted the role of the working group towards Oversight Committees which will have authority to impose enforceable commitments.

2. Site C Clean Energy (Hydroelectric Dam)

The Environmental Assessment Certificate (EAC) was issued in October 2014 under the BC Environmental Assessment Act (Government of British Columbia) and was designated under CEAA 2012. The project is in the construction phase. Documentation (dating back to August 2011) is available on EPIC. An independent Environmental Monitor (IEM) was appointed prior to construction and the requirement for several different detailed Management Plans was listed. A total of 77 detailed conditions were committed to within the EAC and covered a wide range of mitigation measures. Detailed and specific inspections by EAO Compliance and Enforcement have been undertaken, though the results of monitoring are not publicly available.

Follow-up programs were listed in EAC Schedule B, some of which only come into effect in operational phase. Follow-up reports are based on various plans as required by the EAC Schedule B that are written to be defined and describe requirements. They are available on EPIC. There is a comprehensive library of reports published on BC Hydro's website, including mitigation and monitoring plans, and annual reports.

REFLECTIONS ON IMPROVING FOLLOW-UP

The process of follow-up has improved over the years with more clear, well-defined, and enforceable conditions being written into Environmental Assessment Certificates. The following are opportunities for additional improvements.

1. 'Be Transparent'— There is no requirement for results of monitoring to be made public in all cases. Making documents publicly available improves public perception and trust in the assessment process. Making documents available for all practicing professionals facilitates veritable opportunities for project learning and improved future practice.
2. 'Keep it simple' — Large, complex projects often require many/multifold plans and programs. This increases the potential for redundancy and excessively complex (potentially contradictory) pathways/objectives. To the extent practical, it is critical to identify and (if/where possible) consolidate shared program themes and objectives. Concordance of program objectives can streamline follow-up.
3. 'Define Thresholds and Response Planning' — Trigger-Action Response Plans (TARP) are gaining momentum as a structured approach for data assessment paired with pre-determined responses that are scaled to the level of risk. Development of a TARP applies risk management principles to identify pre-defined responses applied when measurable threshold are met. A framework has been issued in some jurisdictions (cf. Development and Use of Trigger Response Plan; BC Ministry of Environment and Climate Change Strategy 2022)
4. 'Track Your Commitments' — The final recommendation on follow-up refers to active ongoing tracking of project commitments in relation to monitoring outcomes and follow-up activities. Consistent with Items #1-3, project accounting is critical to verifying assumptions/trends, tallying project performance and supporting transparency.

A common thread is to streamline the follow-up process to make it more holistic, implementable, and accessible. Wherever possible, related and overlapping themes should be combined; components should use measurable variables as thresholds and data outputs. Clear and accessible data outputs is essential for continuous improvement and public confidence in the regulatory processes.

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