Forest Practices Board

Forest Resources and the Toba Montrose Creek Hydroelectric Project

Complaint Investigation 090928

FPB/IRC/175

June 2011

Board Commentary

This is the board's first investigation into a complaint about the impact a run-of-river hydroelectric project might have on forest resources. Understanding how forest resources were managed required consideration of the overall regulatory framework, including regulations and policies that fell outside of the Board's authority. This "big picture" approach was made possible through the cooperation and support of various government agencies and the project proponent. The resulting report provides a learning opportunity to promote sound forest management for future run-of-river projects.

However, care should be taken when extrapolating or generalizing about results, as each run-of-river project is unique. In particular, smaller projects that do not require an environmental assessment typically undergo a less rigorous review by agencies and the public, which results in fewer legally-binding commitments to manage forest resources, than were required in this case.

A Framework for Land Management

The investigation found that the proponent's logging and roadwork complied with most regulatory requirements and generally met a standard similar to that required of forest companies. The Board did not investigate and offers no opinion on the new roads authorized under the *Land Act*, which were outside the Board's authority.

While the complaint was about forest practices for a specific project, it also involved the more general issue about how the province manages such projects. The province has no effective way of examining or managing the environmental effects of multiple activities and projects on a landscape. Environmental assessments consider the specific impacts of a particular project, but do not strategically assess alternatives. This disconnect between strategic and project level planning presents complications:

> ….Failure to carry out this level of assessment can also lead to frustration where the public is essentially concerned about strategic and land-use planning issues more than the site-specific details of a particular project. These issues are often considered by the [EAO] to be outside the purview of the environmental assessment process. Proponents who are simply playing by the rules may feel stymied or perplexed by issues being raised by the public that are really addressed to higher level policy issues beyond their control and not particularly relevant to the specifics of a given project. But to the public, these issues are often the essential first questions to be asked, going to issues such as the need for a project and alternatives to the project, both of which are considered standard [environmental assessment] issues in many jurisdictions.[i]

Consequently, some organizations have advocated for a more strategic approach to environmental assessments.[ii] The Board's experience has been that lack of strategic planning tends to drive project-level complaints, which can be frustrating and counterproductive for all. However, where a strategic land use plan was in place, satisfaction is higher that forest stewardship plans adequately manage and conserve forest resources.[iii] Similarly, satisfaction with run-of-river project plans may be higher if a strategic environmental assessment process asks the broader-scale questions around the appropriate type and level of development, allowing the assessment of individual projects to focus on local impacts. The assessment of strategic implications, including cumulative impacts, is part of an overall framework for land management, as proposed by the Board in a previously released special report.[iv]

Planning for Sound Forest Practices

For projects subject to provincial environmental assessment, agencies can negotiate to have the Environmental Assessment Office (EAO) specify legally-binding conditions in the proponent's environmental assessment certificate. Such conditions, in addition to any conditions imposed through licensing arrangements, have the potential to "level the playing field" by promoting consistency within and across resource sectors, while also providing the flexibility necessary to recognize any unique needs of a project. Whether this occurs depends on the extent to which agencies, the proponent and the public identify and pursue issues during the environmental assessment and permitting processes.

For the Toba Montrose project, extensive commitments to manage the environment were built into the project certification and licensing arrangements. Nevertheless, the investigation found opportunities for improvement. Not all commitments made in the environmental assessment certificate where measurable or verifiable. Also, there was no commitment to build temporary roads to the same standard as those built for the forest industry.

Recent initiatives may reduce the risk of these issues recurring in future projects. The EAO stated that it now reviews draft commitments in order to increase effectiveness and enforceability. Some ministries are developing more clearly defined standards to promote consistency across projects, and these are expected to eliminate the need for back-and-forth negotiations and provide more certainty and efficiency for both the proponent and administrators. For example, one region of the Ministry of Environment is seeking consistent terms of reference for hydro power, with explicit and agreed-upon commitments and assurances as conditions of certification. The Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) has drafted a document identifying its interests to proponents for the front-end development of proposals.[v] MFLNRO has also issued guidance on how to apply the *Forest and Range Practices Act* during project referral, and when issuing an occupant licence to cut.[vi] The Board encourages all such initiatives that can reduce environmental risk.

Conserving Biodiversity

The project resulted in a loss of 35 hectares, or 0.4 percent of the 8 500 hectares of old-growth management areas (OGMAs) established in the three affected landscape units. The Integrated Land Management Bureau (now part of MFLNRO) did not designate replacement OGMAs, explaining that its policy is that, as the productive Crown forest land base decreases due to development, the required target area for OGMAs also declines. It manages OGMA targets as a percentage of the remaining Crown forest land base, so as not to unnecessarily constrain the timber available for harvesting. The Board acknowledges the importance of managing the impact on other industries, and that, in this case, the impacted area is a small proportion of the total OGMA area; however, this approach could allow OGMAs to be whittled away over time. On landscapes with relatively little development pressure, the result may be inconsequential, but the Board suggests that such decisions be made on a case-by-case basis to ensure that the province's biodiversity objectives are not inadvertently compromised over the longer term.

Assuring Quality

Independent monitoring is an important and mostly effective component of the overall quality assurance framework. During this project, quality was further assured by the proponent's use of qualified professionals at various stages. However, some would argue that the management of public lands should inherently include a component of direct government oversight. In this case, government oversight was effective in some regards, but agencies did not assess potential non-compliances for possible enforcement actions. In addition, there was no documented approach outlining how and when government oversight would occur, or who would lead it.

The recent consolidation of some functions under MFLNRO might promote coordination of government monitoring and enforcement of licensee performance. Also, EAO has created a new section to develop an effective and transparent compliance and enforcement policy. The Board encourages the province to continue developing and applying a clear, coordinated approach to monitoring and enforcing forest practices on multi-faceted projects that potentially span different mandates.

Table of Contents

Executive Summary

Introduction and Background

Two organizations, Friends of Bute Inlet and the Sierra Club of BC, complained to the Forest Practices Board about the impact of a hydroelectric project on forest resources. The "run-of-river" Toba River and Montrose Creek Hydroelectric Project, located about 100 kilometres north of Powell River, is owned by Toba Montrose General Partnership (the proponent). It underwent an environmental assessment, was approved by both the provincial and federal governments in 2007, and began operating in August 2010.

The complainants asked the Board to assess:

- what the immediate, cumulative and long-term environmental impacts associated with the transmission lines and roads might be;
- whether the relevant regulations and policies are fair, are effectively protecting BC's natural heritage, and are serving the immediate and long-term interests of the public; and
- whether planning and practices, government oversight and public consultation are adequate.

The Board does not have the mandate or capacity to assess a project's long-term environmental impacts, or whether the project is in the overall best interests of the province. Therefore, the investigation focused on the remaining aspects of the complaint—how logging, road building and related planning impacted forest resources. The Board considered this within the context of the overall regulatory framework, in order to fully understand how forest resources were managed. Where requested by the complainants, the Board compared practices for the Toba Montrose project with those commonly used by the forest industry.

New and upgraded mainline roads in the Toba and Montrose/Filer valleys were authorized under the *Land Act*, so these fell outside the Board's jurisdiction and were not examined.

The Board found that harvesting and road building were generally consistent with legal and contractual requirements to protect the environment. These requirements were similar to those required of forestry operations and, in some cases, were more stringent. It also found opportunities where government and future proponents could improve the overall management of such projects, especially in the areas of planning and practices, monitoring and enforcement, and assessing cumulative effects.

Planning and Practices

Run-of-river projects are governed by a wide variety of statutes and regulations, and require many different provincial and federal authorizations before approval. An environmental assessment may be required under provincial or federal legislation, or both. If the project does receive an environmental certificate, the proponent must comply with specified commitments and conditions.

Government objectives for managing forest resources that apply to the forest industry do not necessarily apply to run-of-river projects, but may be considered when assessing potential effects of projects subject to environmental assessment. Some specific practice requirements for timber harvesting and roadwork also do not apply. This means there is less certainty about how objectives for forest resources will be managed during the implementation of a hydroelectric project than there is during forestry activities. However, the authorizations for a run-of-river project provide an opportunity to build in requirements that are not explicitly addressed in legislation.

The environmental assessment certificate and licensing arrangements for the Toba Montrose project include legally-binding commitments addressing many of the rules forest companies must follow to protect the environment. However, not all these commitments were measurable or verifiable, whereas commitments by major forest licensees are required to be.

Observed timber harvesting and roadwork generally complied with legislated and contractual requirements, met commitments in the environmental assessment certificate, and were done to a standard comparable to that of the forest industry. An exception was that some deactivated spur roads, used to access transmissions towers, were not managed to the same standards required of the forest industry and did not have reestablished natural drainage patterns at the time of the field review, resulting in erosion of the road prism. Also, the proponent didn't fulfill its commitment to keep any trees that were less than five metres tall for some areas of the transmission line corridor.

Conservation Areas

Old-growth management areas (OGMAs) retain examples of old forest ecosystems and are a key aspect of the province's biodiversity strategy under the *Forest and Range Practices Act* (FRPA). Requirements for managing OGMAs under FRPA do not apply to authorizations for run-of-river projects. Nevertheless, the proponent committed to minimize impacts on OGMAs, limiting the altered area to 36 hectares and identifying potential replacement areas to the Integrated Land Management Bureau (ILMB). ILMB determined that only one hectare of replacement OGMA was necessary, interpreting that, as the Crown forest land base decreases due to development, the target area for OGMA also declines.

Assessments

The proponent's assessments for archaeological and cultural heritage features and unstable terrain were consistent with legislated requirements, met the commitments of the environmental assessment certificate, and were of a caliber comparable to that usually carried out by the forest industry.

Access

While roads fragment habitat, decrease habitat quality, and increase fishing and hunting pressure, there is no legislated requirement for a run-of-river proponent or the forest industry to manage access. For the Toba Montrose project, the proponent made, and met, commitments

addressing access concerns raised by the public and agencies. The Board did not assess whether measures were effective at managing hunting pressure.

Invasive Plants

Utility corridors can be a dispersal route for invasive plants, and these plants can cause economic or environmental harm. There are no requirements in legislation for a run-of-river proponent to manage for invasive plants, but the proponent's commitments and practices were consistent with some recommended methods for preventing their establishment. However, the proponent could have further improved its invasive plant management by promptly revegetating disturbed areas, and through ongoing monitoring.

Wood Waste

The proponent left 45 000 cubic metres of timber dispersed along the transmission line corridor and paid $150,000 for this residual waste, as per procedures outlined in the *Coast Appraisal Manual*. This is consistent with the province's "take or pay" policy, which enables licensees to leave uneconomical lower quality wood behind when the cost of production exceeds the value of the end products.

Monitoring and Enforcement

The environmental assessment certificate required the proponent to appoint an independent environmental monitor (IEM) to promote achievement of environmental goals and objectives. The IEM monitored and reported out on more activities, more frequently than would have occurred through periodic agency visits in a traditional forestry model, increasing the likelihood of detecting non-compliances. As well, the IEM frequently identified fuel spills on roadways and sediment delivery into streams, and the proponent appears to have mitigated most issues quickly. However, delayed reports and limited notification could have made it more difficult for agencies to plan a program of inspections, potentially precluding timely follow-up on specific issues.

Government agencies did not assess the potential non-compliances for possible enforcement actions, and there was no coordinated approach for how and when direct government oversight would occur, or who would lead it. Overall, despite its positive aspects, the enforcement framework was not fully effective.

Cumulative Effects

The proponent's cumulative effects assessment was consistent with the limited legal requirements, and was accepted by the Environmental Assessment Office and federal government. However, it differed substantively from federal policy guidance by not adequately considering the effects of past human activities in the area and by not accounting for any residual effects that were individually inconsequential, but may be cumulatively significant.

Public Involvement and Consultation

Openness and accountability in forest practices can be achieved in part through effective public consultation. In parts of the province, the public has been able to influence forestry through the development of strategic land use plans (SLUPs). Compared to the forest industry, public consultation opportunities for run-of-river development are potentially more limited at the strategic level but, for projects subject to environmental assessment, more extensive at the project level.

For the Toba Montrose project, an assessment of the overall effectiveness of consultation was beyond the scope of the investigation. Instead, the Board addressed specific complaint issues, finding that project-level consultation was extensive and exceeded common practice in the forest industry; the decision to not hold a public meeting in a larger regional centre was reasonable; and, public involvement in and disclosure of the location of the transmission line was adequate.

Introduction

The Complaint

Friends of Bute Inlet and Sierra Club BC (the complainants) submitted a complaint to the Forest Practices Board about the impact of the Toba River and Montrose Creek hydroelectric project (the Toba Montrose project) on forest resources. The project is owned by Toba Montrose General Partnership (the proponent), a partnership between a subsidiary of Plutonic Power Corporation[1] and GE Energy Financial Services.

Background

The Toba Montrose Project

The Toba Montrose project is located within the Coast Range of southern British Columbia, about 100 kilometres north of Powell River. It consists of 2 power stations, 156 kilometres of transmission line, 40 kilometres of substantively upgraded road, and 22 kilometres of new road.[vii] The project underwent an environmental assessment and was approved by both the provincial and federal governments in 2007. It began operating in 2010, and has a generating capacity of 196 megawatts.

Plutonic Power plans to add two more generating stations in the Toba Valley, which would increase capacity by 124 megawatts. It has completed an environmental assessment on another nearby power project—the Upper Toba Valley Hydroelectric Project. A third project, the Bute Inlet Hydroelectric Project, is on hold.[2] Together, these three projects would consist of 21 power stations generating 1356 megawatts of energy in what the proponent calls the "Green Power Corridor." By comparison, BC Hydro's proposed Site C dam would generate about 1000 megawatts.

The BC Energy Plan

The proponent proposed the Toba Montrose project in response to BC's Energy Plan, [viii] which encourages the development of independent power projects to meet the province's growing electricity requirements. The plan commits to obtaining 90 percent of BC's total power generation from clean or renewable energy sources, and achieving energy self-sufficiency by 2016. It designates responsibility for developing new energy generation to the private sector and restricts BC Hydro to only making improvements at existing plants.[ix] Some of the principles of the energy plan have since been enacted under the *Clean Energy Act*.

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[1] Although Plutonic Power Corporation is now part of Alterra Power Corporation, the Toba Montrose Project will continue to be owned by the proponent.

[2] The proponent "…does not foresee advancing the Bute Inlet Project through the environmental assessment process in the near future based on our current understanding of the Project and the uncertain timeline for the next opportunity to obtain an Electricity Purchase Agreement with BC Hydro."< http://www.plutonic.ca/s/ButeInlet.asp >

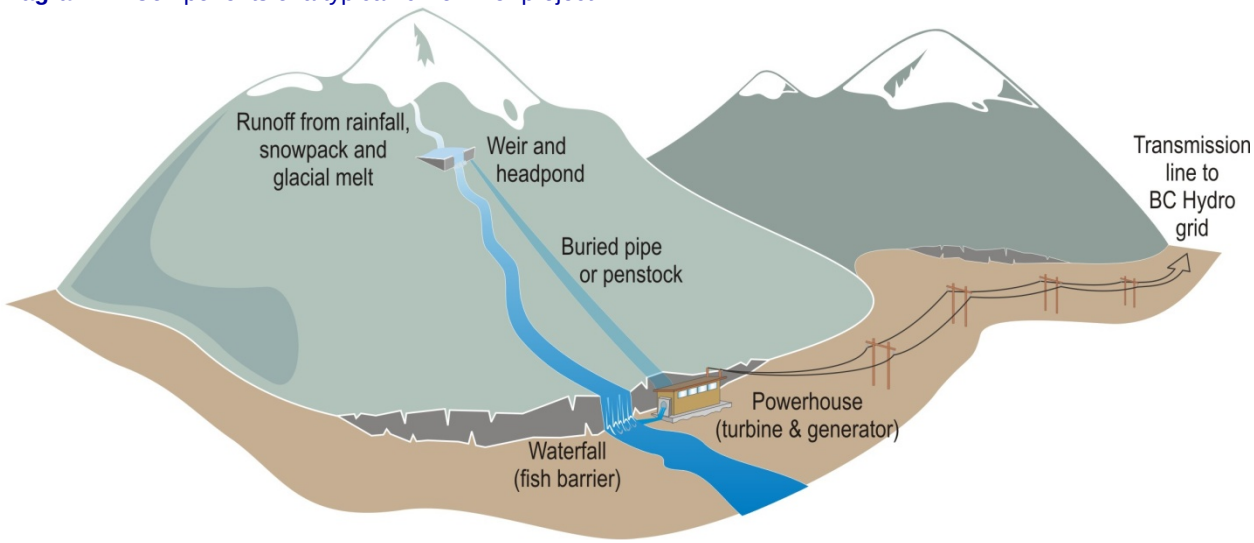
Some favor the energy plan's private ownership model, submitting that the private sector bears the economic risk associated with these capital-intensive projects; the land remains in public hands; and, lease and tax revenues are generated for the province. Others view provincial environmental laws for independent power projects as inadequate, and believe that private power corporations have little incentive to promote conservation because doing so erodes profits. They favor a public ownership model, which they see as providing greater transparency, accountability and returns for the province.[x]

Run-of-River Projects

The BC Energy Plan has resulted in applications for water licences on over 700 creeks and rivers for run-of-river projects. Many applications are for projects that will likely prove to be financially, environmentally or technically unfeasible, so will not be built.

Run-of-river projects generate electricity by diverting water from a river or stream into a pipe, called a penstock. The penstock feeds the water downhill to a powerhouse. Water and gravity spin turbines that generate electricity, and the water leaving the powerhouse is returned to the river.

Diagram 1. Components of a typical run-of-river project



Courtesy of Plutonic Power Corporation

Board Mandate and Scope of the Investigation

The complainants asked the Board to assess the immediate, cumulative and long-term environmental impacts associated with the transmission lines and roads, and to determine whether the relevant regulations and policies are fair, effective at protecting BC's natural heritage and serve the immediate and long-term interests of the public. The complainants also asked the Board to assess the adequacy of planning and practices, government oversight and public consultation.

However, the Board does not have either the mandate or capacity to assess a project's long-term environmental impacts, whether a project is in the overall interests of the province, or the Province's energy policies. Rather, the Board's role is to encourage sound forest and range practices. This investigation was undertaken in that spirit.

The Board primarily considered how logging, road building and related planning impacted forest resources, but also recognized that other aspects of the Toba Montrose project might impact forest resources. For example, diverting water to the power station could affect fisheries, and construction of the camp and power stations could impact fish and wildlife. Such potential impacts are outside the Board's mandate, so were not investigated.

While the Board's authority extends only to matters relating to the *Forest and Range Practices Act* (FRPA) and the *Wildfire Act*, the investigation did consider the broader regulatory framework in order to fully understand how forest resources were managed. The Board can't assess if regulations for run-of-river projects are "fair," but it did examine how they compare with regulations for traditional forestry operations under a major forest licence[3] (for simplicity, this report sometimes describes major forest licensees collectively as "the forest industry"). Where requested by the complainants, the Board also compared practices for the Toba Montrose project with those commonly used by the forest industry.

The report addresses complaint issues specific to the Toba Montrose project under the headings of:

- *Planning and Practices*
- *Monitoring and Enforcement*
- *Cumulative Effects*
- *Public Involvement and Consultation*

This report does not comment on new and upgraded mainline roads in the Toba and Montrose valleys. Those roads, authorized under the *Land Act*, fall outside the Board's legal jurisdiction, and the proponent did not volunteer to have the Board examine them.

An additional complaint issue, about whether the resulting "clean energy" was offset by the loss of carbon stored in forest vegetation and soils through transmission line clearing, was not investigated. The Board found no requirements, policy guidance or generally accepted methodology for managing or assessing a project's net carbon impact.

The investigation followed the approach outlined in the Board's *Complaint Investigation Manual* at http://www.fpb.gov.bc.ca/Complaint_Investigation_Reference_Manual_March_2010.pdf.

A field assessment of harvesting and road building practices followed the general principles of the Board's *Compliance Audit Reference Manual* at http://www.fpb.gov.bc.ca/Compliance_Audit_Reference_Manual.pdf.

[3] The *Forest Act* defines ***major licence*** to mean a forest licence, timber licence, tree farm licence and, in some cases, a timber sale licence and forestry licence to cut.

The assessment of monitoring and enforcement followed the general principles of the Board's *Enforcement Audit Reference Manual* at http://www.fpb.gov.bc.ca/Enforcement_Audit_Reference_Manual.pdf.

Planning and Practices

The complainants questioned whether planning and practices are less rigorous for run-of-river projects than for the forest industry, potentially resulting in unsound harvesting and road work. Did "circumventing" traditional forest planning processes lead to inadequate management of forest resources? To answer this, the investigation assessed the regulatory framework, the proponent's commitments to manage forest resources, and the outcome of those commitments. The Board investigated only those planning and practices that relate to specific complaint issues.

Overview of the Regulatory Framework

Run-of-river projects and the forest industry use forest resources in some fundamentally different ways. Understandably, their regulatory frameworks for road building and timber harvesting have similarities, as well as significant differences.

Run-of-river projects are governed by many statutes and regulations, and require many different provincial and federal authorizations before a project may proceed. An overview of provincial regulations that relate to roadwork and harvesting is provided here, with details provided in Appendix 1.

Every run-of-river project goes through a review process that can take two or more years and may involve multiple federal, provincial, local and First Nations authorities. In some cases, an environmental assessment may be required under provincial or federal legislation or both, depending on the size of the project. If the project then receives an environmental assessment certificate, the proponent must comply with the specified commitments and conditions of the certificate.

Projects must be licensed under the *Water Act* in order to build facilities in streams, or to divert water, and under the *Land Act* in order to occupy Crown land. Use of existing roads on Crown land may be authorized under the *Forest Act*. If the project involves cutting trees on Crown land, authorization is also required under the *Forest Act*, which triggers the application of some requirements under FRPA.

Forestry operations are not subject to environmental assessment but, under FRPA, forest companies must follow rules designed to protect the environment. For major forest licensees, these include:

- specifying results and/or strategies in a forest stewardship plan (FSP) that are consistent "to the extent practicable"[xi] with government objectives for strategic land use (if any), forest resources identified in FRPA, and spatially defined conservation areas (such as ungulate winter ranges, wildlife habitat areas and old-growth management areas [OGMAs]) designated through other legislation;
- ensuring that the results are achieved or that strategies are carried out;
- identifying how the intended results or strategies apply to proposed roads and cutblocks in a site plan; and
- adhering to harvesting and road work practice requirements set out in FRPA (or to alternative results or strategies in an FSP).

The regulatory framework for independent power projects is different. Government objectives for strategic land use, forest resources and managing spatially defined conservation areas do not apply. However, for projects subject to environmental review, they may be considered in the assessment of potential effects, if identified by the Executive Director[4]). Also, though most of the FRPA practice requirements for harvesting timber or using a forest service road do apply, other requirements do not. Instead, environmental protection requirements may be built in to the various approvals.

Commitments to Manage Forest Resources

The Toba Montrose project was subject to the province's *Environmental Assessment Act* (EAA) and the *Canadian Environmental Assessment Act* (CEAA). Both levels of government were involved in a cooperative environmental assessment, with the environmental assessment certificate issued by the province.

The environmental assessment certificate included 77 legally-binding commitments that the proponent had to implement through the various phases of the project. [xii] Further commitments were made through the following authorizations:

- Road use permits for existing forest service roads, or road use agreements for roads under permit to major forest licensees, from Jervis Inlet to Toba Inlet.
- Licences of Occupation under the *Land Act* for new and substantially upgraded access roads in the Toba and Filer/Montrose valleys.
- Licences of Occupation under the *Land Act* for the purpose of constructing the transmission line, including new spur roads leading to the transmission towers.
- Occupant Licences to Cut (OLTC) under the *Forest Act* for timber harvesting under the transmission line.

[4] Section 11(3) of the *Environmental Assessment Act* states that "the assessment of the potential effects of a reviewable project must take into account and reflect government policy identified for the executive director, during the course of the assessment, by a government agency or organization responsible for the identified policy area."

The legally binding commitments address many of the rules that forest companies must follow to protect the environment, including managing for government objectives for strategic land use and spatially-defined conservation areas. For the area of the project, this was limited to objectives for OGMAs. This is discussed in detail further in this report, under the heading *Conservation Areas*.

The proponent's commitments also included mitigation of impacts with regard to some of government's objectives for forest resources, identified in FRPA. For example, the proponent's commitment to retain wildlife trees where possible[xiii] is similar to the FRPA objective to retain wildlife trees to the extent practicable. Proponent commitments that relate to FRPA objectives are detailed in Appendix 2.

While commitments potentially mitigate impacts, not all ensure a particular outcome. For example, the proponent commited to:

- routing transmission lines around OGMAs "where possible"[xiv] and sensitive wildlife areas "where practicable";[xv]
- locating infrastructure away from known habitats of species at risk "where possible";[xvi]
- avoiding sites with sensitive plant communities "where practicable";[xvii]
- retaining wildlife trees "where possible";[xviii] and
- putting "adequate" erosion prevention and sediment control measures in place during and after construction.

Other commitments left outstanding issues to be resolved at some future date, such as timber that may become isolated from harvesting that will be "examined further" during the detailed design phase. [xix] While it may not be possible to resolve all issues at the permitting stage, such commitments are not measurable or verifiable, as is required of the forest industry when specifying results or strategies[5] in an FSP.[6]

The proponent also committed to developing "clearing plans" providing information comparable to that contained in a major forest licensee site plan. A forest professional traversed and classified streams, identified archaeology and wildlife issues, recommended stream crossing structures, prescribed the logging method, and identified low volume sites and or areas where timber was isolated. Any changes to the clearing plans required signoff by a professional forester. In this manner, commitments were translated to specific sections of the transmission line.

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[5] ***Result*** means a description of measurable or verifiable outcomes in respect of a particular established objective, and ***strategy*** means a description of measurable or verifiable steps or practices that will be carried out in respect of a particular established objective (definitions 1(2) of the *Forest Planning and Practices Regulation*).

[6] Despite these requirements, the Forest Practices Board's experience is that results and strategies specified in forest stewardship plans are not always measurable or verifiable (see the Board's special report, *A Review of the Early Forest Stewardship Plans Under FRPA, May 2006*).

While the new and upgraded mainline roads were not subject to FRPA practice requirements, the proponent committed to building them to a comparable standard in many regards.

Commitments included:

- having "a qualified professional (coast) engineer design the road to the standards as outlined in the Ministry of Forests and Range[7] Engineering Manual and applicable legislation";[xx]
- ensuring that design criteria, construction plans, and mitigation for stream and other watercourse crossings along the access road corridor "will meet or exceed all standards and codes established by relevant authorities for the project";[xxi] and
- incorporating measures outlined in the Ministry of Environment (MOE) *Standards and Practices for In-stream Works* (2004), unless a variance is reviewed by the Department of Fisheries and Oceans (DFO).

In contrast, commitments for the temporary spur roads to the transmission towers were more limited. The proponent committed to restoring the surface of the land to a condition satisfactory to the Integrated Land Management Bureau (ILMB),[8] taking precautions to avoid disturbing or damaging any archaeological materials, and ensuring junctions with forest service roads were safe and maintained drainage patterns.[9] Also, commitments through the federal environmental assessment compelled the proponent to adhere to DFO's operational guidelines for work around fish streams.[xxii] However, the proponent did not commit to building temporary roads to the standards of the MFR engineering manual or to adhere to FRPA's practice requirements.

In summary, commitments made through project certification and licensing arrangements resulted in planning and practice standards for harvesting and roadwork that were similar to those for the forest industry, with two exceptions. First, commitments that potentially mitigated impacts with regard to FRPA objectives were not all measurable or verifiable. Second, commitments did not require managing temporary tower roads to the standards required of a major forest licence.

Outcome

The Board investigated the outcome of some of the proponent's commitments by conducting a field review, reviewing relevant documents and interviewing participants. The Board investigated only the commitments that related to the complaint issues. For example, the Board did not investigate whether or not the proponent fulfilled its many commitments to manage for specific wildlife species, as that was not part of the complaint.

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[7] The Ministry of Forests and Range is now called the Ministry of Forests, Lands and Natural Resource Operations.
[8] Now part of the Ministry of Forests, Lands and Natural Resource Operations.
[9] The OLTCs state: "If the Licensee is given authorization to construct a junction with a Forest Service Road, the Licensee shall ensure that the junction is constructed such that it provides minimum sight distance, has sufficient junction angle and suitable road grade and surface for the expected traffic, and that culverts are installed, as required to maintain drainage patterns."

Harvesting and Road Building

Were harvesting and road building practices consistent with requirements, and comparable to those for forest major licensees?

The Board reviewed the proponent's road work and harvesting in the field on June 14 and 15, 2010. The field review sampled forest practices to provide an overall sense of performance, but this limited work was not designed or intended to identify all potential non-compliances.

Observations and findings exclude the 40 kilometres of upgraded road and 22 kilometres of new road[xxiii] in the Toba and Filer/Montrose valleys authorized under the *Land Act*.

There were no active operations, so the field review did not assess compliance with *Wildfire Act* requirements to provide 24-hour contact information, have sufficient fire tools, and monitor fire weather when engaging in high-risk activities.

The Board flew the entire 145-kilometre length of the transmission line and sampled:

- about 80 of the approximately 120 kilometres of existing road maintained under road use agreement and road use permit;
- about half of the 35 kilometres of spur roads leading to the transmission towers, most of which had been deactivated;
- 58 of the 177 clearing plan sections; and
- 2 of the 12 visual impact assessments for the transmission line.

Roads and Bridges

Existing roads and bridges maintained under permit and agreements generally had functional drainage systems, adequate visibility and stable road prisms. One exception, however, was a new bridge that had been constructed overtop of an existing bridge. In this case, the opening was inadequate to pass the highest peak flow of the stream that can reasonably be expected within a 100-year period, which is contrary to section 74 of the *Forest Planning and Practices Regulation* (FPPR). The opening was partially blocked with debris, contrary to section 79(6)(b) of the FPPR.

Deactivated spur roads in the Toba and Filer/Montrose valleys appeared stable and able to restore natural drainage patterns. In contrast, some deactivated spur roads located south of Toba Inlet did not have reestablished natural drainage patterns. In eight observed instances, this caused, or contributed to erosion of the road prism and one small landslide. On another section of road, an equipment operator triggered a slide that, although remediated, has potential for ongoing erosion or sloughing.[10] Also, grass seeding did not take on some deactivated roads, potentially contrary to the certification commitment to reseed where practicable or required, to

[10] The slide and remediation work are documented in the independent environmental monitor's reports for the periods June 20 to 26, 2009, and June 27 to July 23, 2009.

avoid erosion risks.[xxiv] Deactivation work was not complete at the time of the Board's field review, and some roads have since been deactivated or reseeded.[11]

Transmission corridor near Freda Lake.

Harvesting

For transmission line clearing, visual impacts appeared consistent with the visual quality objectives. Also, observed soil disturbance within the right-of-way was negligible, other than for roads, as mentioned above.

Of the hundreds of stream crossings examined by the Board, clearing damaged streams in only three observed instances, where stream banks were disturbed over a small area, or natural streams channels were rerouted for short lengths. Otherwise, work around streams complied with legislated and contractual requirements to not obstruct fish passage, protect stream crossings, prevent materials from entering watercourses and minimize the amount of crossings. As well, the proponent's work when constructing overhead lines appeared consistent with DFO's measures to protect fish and fish habitat, and work around streams was comparable to that typically observed by the Board during audits of major forest licensees, other than the clearing of vegetation next to fish streams.

The proponent removed all streamside vegetation other than ground shrubs, with a few exceptions, to provide clearance for the transmission line, which was contrary to the OLTC contractual requirement to leave trees less than five-metres tall along 32 streams where the clearing width was wider than the normal 40 metres. The proponent also committed to potentially leaving stub trees in the vicinity of the footprint edges for wildlife habitat retention,[12] but did not do so to provide clearance for the transmission wires and ensure crew safety.

Felled timber was left under parts of the transmission line, mainly on steeper sections not accessible to ground-yarding equipment, including the Saltery, Upper Freda, Goat 2, Daniels Valley, Toba Inlet and the East Toba clearing plan sections. Trees were laying close to the ground, but were mostly not bucked and limbed as per the minimum standards described in the proponent's debris management plan.[xxv] The proponent had a qualified professional assess

[11] Reseeding unconfirmed at the time of writing this report.

[12] "Where live or dead large trees must be removed on footprint edges, consideration will be given to creating stubs by leaving three to five metre tall stumps, as long as this can be done safely under current Worker's Compensation Board regulations," Commitment #18, Environmental Assessment Certificate E07-01.

the transmission line, and the professional was satisfied that the clearing and debris management standards of the project had been met, and that the standards met or exceeded those of the coastal forest industry.[xxvi] The professional deemed fire risk as acceptable, because areas with debris accumulations were generally at higher elevation with lots of snow, limited access and natural breaks. Also, those areas tended to have five-metre, debris-free zones around any roaded access.[xxvii] The Board accepts the opinion of the professional.

Finding

Observed timber harvesting and roadwork generally complied with legislated requirements and commitments, except that the proponent did not retain trees less than five-metres tall where clearing width exceeded 40 metres. Work was done to a standard comparable to that of the forest industry, except for some deactivated spur roads where natural drainage patterns had not yet been restored at the time of the Board's field review.

Conservation Areas

The complainants were concerned about the project's impacts on spatially-defined conservation areas—such as OGMAs, ungulate winter ranges (UWRs), and wildlife habitat areas (WHAs).

Did the proponent meet requirements and commitments to manage spatially-defined conservation areas?

Spatially-defined conservation areas are a key aspect of the province's biodiversity strategy under FRPA. They serve to ensure that the forest industry retains either representative samples of ecosystems, or elements of particular species' habitats, and are generally applied outside of parks and protected areas. OGMAs retain examples of old-forest ecosystems and provide the framework for landscape-level conservation. Where established, WHAs protect critical habitat for species affected by forest and range practices, as part of the province's Identified Wildlife Management Strategy (IWMS). UWRs, where designated, are areas necessary for the winter survival of certain ungulate species.

For the area of the project, planning for WHA or UWRs was still incomplete and limited to draft winter ranges for mountain goat. The project did not impact the draft winter ranges.

However, unlike for a major forest licensee, there was no legislated requirement for the proponent to manage or retain OGMAs, but the proponent committed to managing OGMAs as a condition of its certificate of approval.

> The transmission line rights-of-way will be diverted away from Old Growth Management Areas where practicable. If clearing within an Old Growth Management Area is required, the Integrated Land Management Bureau and the Forest Tenure holder will be contacted to determine if a replacement Old Growth Management Area is deemed necessary…[xxviii]

The Board's review of the clearing plans found that the transmission line location within the approved right-of-way generally avoided OGMAs, or appeared to usually cross OGMAs in

narrow sections. A field review found that transmission line clearing widths were consistent with the plans.

The proponent found that 36 hectares of OGMAs would be affected (of the 8500 hectares of OGMAs in the three affected landscape units), and identified and proposed replacements to ILMB. Because the project removed area from the Crown forest, ILMB determined that the required amount of OGMA area was reduced proportionately and that only one hectare of replacement OGMA was necessary.

Findings

There were no established WHAs or UWRs within the area of the project. Although the project reduced OGMAs by 35 hectares, the proponent met its commitments to mitigate the project's impacts on OGMAs.

Assessments

The complainants questioned whether the proponent's assessments for archaeological features and unstable terrain were of a caliber comparable to the forest industry. The investigation reviewed the proponent's archeological and terrain hazard assessments, comparing them to common practice for major forest licensees.

Did the proponent adequately assess and manage for archaeological features?

Both run-of river projects and major forest licensees are subject to the *Heritage Conservation Act*, which provides protection for heritage objects, burial sites, and rock carvings or paintings. For major forest licensees, FRPA provides additional protection for cultural resources—such as spiritual sites and traditional use areas—through the objective:

> … to conserve, or, if necessary, protect cultural heritage resources that are (a) the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and (b) not regulated under the *Heritage Conservation Act*.[xxix]

The Board's experience has been that major forest licensees often undertake archaeological overview assessments and work closely with First Nations whose traditional territories are impacted by proposed development. Where the potential for cultural heritage resources is identified as high, licensees often complete a more detailed archeological impact assessment. Where specific features of interest are identified, licensees usually work with First Nations to avoid or mitigate potential impacts. Work is sometimes, but not always, done to the standards of *Guidelines for Archaeological Impact Assessments* (the provincial guidelines).[xxx]

For run-of-river projects subject to environmental assessment, the EAA requires studies of a project's effect upon cultural and heritage resources in accordance with the provincial guidelines. The Environmental Assessment Office (EAO) then determines specific, additional requirements for each reviewable project. Reviewable projects may also be subject to federal assessment by Parks Canada Agency, Cultural Resource Services, which provides expert advice on heritage and archaeological matters within the Government of Canada.

For the Toba Montrose project, the EAO required an archaeological impact assessment (AIA) done to the standards of the provincial guidelines as a prerequisite for project approval. In addition, the proponent made commitments to mitigate the potential effects on archaeological resources including:

- implementing Archaeological Sites Management Plans, which outline procedures for dealing with any archaeological features encountered;
- having an archaeologist and a representative from the Klahoose, Sliammon or Shishalh First Nation present during construction activities in sensitive areas identified during the archaeological impact assessment;
- in the event that suspected archaeological remains were encountered, agreeing to immediately suspend ground disturbance and inform both the Archaeology Branch and appropriate First Nations' communities;
- consulting First Nations in order to minimize or avoid disturbances; and
- if, after all other options have been exhausted, impacts could not be avoided through alteration of project design, conducting studies in consultation with First Nation or other stakeholders to produce mitigation plans directed at retrieving the resource values prior to any impact.

The AIA assessed both archaeological and heritage sites in the areas affected by the proposed roads, facilities and transmission lines.[xxxi] The assessment was prepared by a qualified archaeologist in accordance with original guidelines. The federal Cultural Resources Services determined that it provided adequate information about the nature of the proposed project.[xxxii] The assessment found no unknown archaeological sites within the footprint of the project and a low probability that undiscovered archaeological resources were present among the overall project sites. Assessments did note two known archaeological sites that would potentially be affected by construction, both on Klahoose Indian Reservation #1. However, to prevent impacts, an archaeologist and a representative from the Klahoose First Nation were present during construction near these sites, and protection measures outlined in the Archaeological Sites and Cultural Heritage Management Plan were followed. The Klahoose First Nation was satisfied with the quality of the archaeological assessments and management of archaeological features.

The Klahoose and Sliammon First Nations participated in the assessments. The Shishalh Nation, whose traditional territory covers the southern portion of the transmission line, did not participate in the early fieldwork, but did participate in an archaeological assessment for the Saltery Bay substation.

Finding

Archaeological and cultural heritage assessments were similar to assessments often undertaken by major forest licensees, and met legislated requirements and the conditions of the environmental assessment certificate. The proponent adequately managed for archaeological features.

Did the proponent adequately assess terrain?

Under FRPA, there is no requirement for the forest industry to undertake terrain stability assessments. However, major licensees are prohibited from conducting activities that result in landslides that have material adverse effect on forest resources (s. 37 of FPPR). Consequently, major forest licensees sometimes undertake terrain assessments to identify sensitive terrain and develop approaches to reduce the risk of landslides occurring. Legislation and policy are intentionally silent on what constitutes a terrain stability assessment, leaving it to the discretion of the qualified professionals. Guidance on the appropriate education, training and experience for undertaking terrain assessments has been provided by the professional associations.[xxxiii]

For the Toba Montrose project, where existing terrain stability mapping was not already available, the environmental assessment required terrain mapping to the standards of the province's Resources Inventory Committee.[xxxiv] The proponent had a qualified professional complete detailed terrain assessments for the transmission line alignment, including site and project description, methodology, follow-up field work, terrain maps, findings, recommendations and conclusions.[xxxv] Project terrain maps were produced according to Resources Inventory Committee standards,[xxxvi] and recommendations were made to relocate towers and mitigate the risk from terrain hazards.

The proponent also had a qualified professional assess the landslide risk of reactivating the road in the Toba Valley.[xxxvii] It found a low to moderate landslide probability associated with the roads, and a low risk to downslope resources as a result of reactivation of these roads.

Finding

The proponent's terrain assessments were consistent with its commitments and comparable to assessments sometimes done by major forest licensees.

Access

The complainants were concerned that the transmission line network had created vehicle access into previously inaccessible areas, impacting wildlife through unmonitored hunting.

Did the proponent adequately consider and manage for access?

Roads can fragment habitat, increase legal and illegal fishing and hunting, and create disturbance from both traffic and off-road vehicles. Access concerns are often contentious issues in strategic planning, operational planning and in the approval of new developments.

FRPA doesn't include a government objective for road access. Consequently, a major forest licensee need not include strategies or results for managing access in its FSP. Similarly, there is no legislated requirement for a run-of-river proponent to manage access.

For the Toba Montrose project, the southern or "Powell River" section is accessed via existing forestry roads. Since that area is already open to hunting and other recreational use, additional impact on resources from increased access is likely low, and was not investigated further by the Board.

The proponent accessed the East Toba power station by reopening and upgrading 40 kilometres of existing deactivated logging road (the road system is accessible by barge only). The Montrose power station involved constructing 14 kilometres of new road in a previously undisturbed watershed. The EAO identified that reconstruction of the road in the Toba River Valley might facilitate other developments and thereby increase cumulative impacts. Also, it might increase disturbance and mortality to wildlife—particularly grizzly bears and mountain goats. MOE proposed restricting and controlling public access in order to mitigate potential impacts to the environment, including conflicts with wildlife. The proposal was supported by a guide outfitter who raised related concerns about the impact of the road opening up the area to use by others.

In response, the proponent committed to controlling access on the new road during construction and operations.[xxxviii] It agreed that the number of gates, their locations and allowed gate users would be set by ILMB in consultation with MOE, the Klahoose First Nation, government agencies, guide outfitters, other legal stakeholders and the proponent. Also, the proponent committed to prohibiting work crews from hunting in the project area, and to installing gates on a number of bridges to limit vehicle access (most likely, that of all-terrain vehicles).

Measures were described in an access and safety management plan, which was approved by ILMB. [xxxix]

The Board found that, contrary to the proponent's commitment, gates were not installed during construction. Instead, the proponent stated that safety call-in procedures by its contractor would have prevented any unauthorized use. However, gates were subsequently installed in October 2010, in accordance with the access management plan.[xl] While this approach fell short of the commitment, the Board accepts that it likely met its spirit and intent.

The Board did not assess whether access management was effective at controlling hunting pressure, as that was beyond the scope of the investigation.

Finding

The proponent made legally binding commitments to address access issues identified during the environmental assessment process, and met those commitments. The Board did not assess whether measures were effective at managing hunting pressure.

Invasive Plants

The complaint was concerned that the transmission line and roads would provide a potential foothold for invasive plants, such as scotch broom. The Board did not confirm the presence or absence of any invasive plants during its limited time on site. Instead, the investigation assessed how the proponent managed for invasive plants, comparing and contrasting with best management practices that apply to the forest industry.

Did the proponent adequately consider and manage for invasive plants?

Invasive plants are plant species that are non-native to an ecosystem and whose introduction causes, or is likely to cause, economic or environmental harm, or harm to human health. Uncontrolled, these plants can invade new environments, and alter the structure and function of natural ecosystems. Roads, railroad right-of-ways, trails and utility corridors are often primary dispersal routes.

Preventing the initial establishment and spread of invasive plants is the single most effective method of invasive plant control.[xli] This can be accomplished by cleaning equipment, minimizing soil disturbance and promptly reseeding disturbed areas. As well, monitoring for invasive plant species through regular inspections is an essential planning and prevention tool. It can include determining priority invasive plant species for the area; ensuring staff and contractors learn to identify the species of concern, and establishing a protocol for action when an invasive plant species is discovered.[xlii]

Management of invasive plants in British Columbia is a complex task involving a range of jurisdictions, legislation, policies, and guidelines. Although numerous acts, regulations, policies and guidelines provide authority and direction for the control of invasive plants in British Columbia,[xliii] the *Weed Control Act, Integrated Pest Management Act* and FRPA are the most important legislation governing the management of invasive plants on Crown land.

Forest and range licensees have no responsibility to control existing invasive plants on Crown land; however, under FRPA, licensees must specify measures to prevent the introduction or spread of invasive plants in their operational plans if it's likely that the plants may establish themselves as a result of the licensees' forest or range practices.[13] No criteria or standards, and few guidelines, are available to licensees. As a result, most FSPs, range stewardship plans and range use plans examined by the Board to date describe only cursory measures to prevent the introduction and spread of invasive plants. Few plans describe additional measures or management practices to reduce the risk of introducing and spreading invasive plants.

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[13] FRPA section 47—A person carrying out a forest practice or a range practice must carry out measures that are (a) specified in the applicable operational plan, or (b) authorized by the minister to prevent the introduction or spread of prescribed species of invasive plants.

FPPR section 17—For the purpose of section 47 *[invasive plants]* of the Act, a person who prepares a forest stewardship plan (a range use plan or a range stewardship plan) must specify measures in the plan to prevent the introduction or spread of species of plants that are invasive plants under the *Invasive Plants Regulation*, if the introduction or ``spread is likely to be the result of the person's forest (range) practices."

Similarly, for run-of-river projects, there are no requirements in legislation to manage for invasive plants. The proponent nevertheless committed to:

- thoroughly washing all construction vehicles, either before or immediately upon their arrival by barge to the Toba area—paying special attention to wheel wells, tire treads and tracks where mud and seeds could be lodged;[xliv] and
- reseeding disturbed areas with native species, or in accordance with generally accepted forestry and resource road practices. [xlv]

Roads examined by the Board appeared no wider than necessary (roads consisted of existing forestry roads or narrow spur roads accessing transmission towers), but seed from reseeding did not take on some spur tower roads. The proponent reported that road work was ongoing and that some areas were reseeded subsequent to the Board's field review.[14] The Board did not investigate whether vehicles were being washed.

Finding

The proponent's approach to managing invasive plants met or exceeded common practice in the forest industry. Practices were consistent with some recommended methods for preventing the establishment of invasive plants, but could be further improved upon by prompt revegetation of disturbed areas and through ongoing monitoring.

Wood Waste

The complainants had concerns about timber wasted during transmission line logging. The investigation examined wood waste, relative to requirements and policy.

Was wood utilization consistent with requirements and policy?

Wood waste is defined as any timber that meets merchantability specifications[xlvi] but is not removed from the cutting authority area, and not reserved from cutting. In the forest industry, waste can occur for a number of reasons, but economic variables are the main factors affecting the amount of wood waste. If the cost of production (stumpage, falling, yarding, transportation and milling) is less than the price being paid for the lumber and chips, then a company will make a profit and the timber will be used. If the cost of production is greater than the price paid for the lumber and chips, then it is unlikely that all the timber will be used. Current Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) policy, referred to as "take or pay," eliminates requirements to remove cut timber from the site, which enables the licensee to leave uneconomical, lower-quality wood behind when the cost of falling, yarding, trucking and milling exceeds the value of the end product (i.e., lumber and chips).

In this case, the "take or pay" policy applied to the proponent's timber harvesting under OLTCs. However, under licensing arrangements, the proponent was obligated to cut and pile the timber at roadside (it did not have the right to remove the timber; forest licensees had the option of taking the decked timber but were not required to do so).

[14] As per the proponent's letter of April 28, 2011; unconfirmed at the time of writing.

The proponent left 45 000 cubic metres of timber (about 1 100 highway logging truck loads) dispersed along the transmission line corridor.[xlvii] MFLNRO billed the proponent $150,000 for this residual waste, as per procedures outlined in the *Coast Appraisal Manual*. The proponent found it more economical to pay the waste fee—particularly for areas not accessible to ground yarding—than to incur the cost of yarding the timber and decking it at roadside.

Not included in the tally of dispersed waste were decked logs left at roadside. The Board observed about 30 decked piles of logs in 8 different clearing plan sections. Since the field review, MFLNRO has reported that most decked piles have been removed and billed to forest licensees.[xlviii]

Findings

Merchantable wood left dispersed under the transmission line was consistent with the province's take or pay policy, but contrary to the licensing requirement to deck timber at roadside.

Monitoring and Enforcement

The complainants questioned whether the approach to monitoring and enforcement was adequate for ensuring adherence to requirements for managing forest resources. Also, the complainants asked if self-monitoring by the proponent was sufficiently independent and objective.

Was monitoring and enforcement effective in promoting compliance with requirements and commitments to manage forest resources?

The goal of compliance and enforcement efforts is to achieve environmental goals and objectives, such as preventing damage to forest resources. For the Toba Montrose project, responsibility for monitoring and enforcing road work and harvesting requirements belonged to MFLNRO, ILMB, MOE, EAO and DFO. Their roles and authority are summarized in Appendix 3.

EAO has considerable enforcement authority, but is not structured or resourced to undertake substantive direct monitoring. Instead, it mostly relied on other agencies and the proponent to ensure that the requirements of the certificate were met. One condition of certification was that the proponent appoint an independent environmental monitor (IEM), who was acceptable to, and would report to, MOE. The role of the IEM was to check on the implementation of the proponent's commitments and obligations and monitor environmental compliance, by periodically inspecting the site environmental management of the project.[xlix]

Over a 30-month period between 2007 and 2010, the IEM posted over 100 reports on the proponent's website. The IEM monitored and reported out on more activities, more frequently, than would have occurred through periodic agency visits in a traditional forestry model, increasing the likelihood of detecting non-compliances.

Not surprisingly for a project of this size, in challenging coastal conditions, the IEM identified non-compliances with requirements. Fuel spills were the most common issue. Over 100 spills ranging from several litres to up to 900 litres were noted in the period between September 2007 and June 2010. All were dealt with using spill kits, and removal of contaminated materials and no residual problems were identified in IEM reports. Another common issue was sediment delivery into streams, with over 20 reports noting issues during that period.

The IEM identified several instances of works not proceeding in accordance with plans. In a few cases this resulted in sedimentation of fish streams and the IEM issuing stop-work orders. [15] In two cases, these resulted in brief suspensions to the foreman and superintendent, retraining of crews or other actions.

Although the Board can't verify the accuracy or completeness of the IEM reports, they appear thorough, well documented and supported by photo evidence. The proponent appears to have mitigated most issues quickly. The IEM used a range of enforcement actions, up to and including stop-work orders and suspensions. The high frequency of IEM inspections seems sufficient and appropriate for the level of risk to forest resources. Also, the proponent reported that it modified its procedures in response to the sedimentation issues, hiring an environmental inspector who worked with the IEM and having the contractor vet activities through the IEM before starting work.[16] All of the preceding are characteristic of an effective monitoring and enforcement program.

However, other aspects of independent monitoring were lacking. The proponent outlined environmental management objectives and guidebooks that were relevant to the project design and construction,[1] but did not specify a threshold for reporting observations.

Another concern identified by the Board was that agencies sometimes did not receive weekly reports until several weeks after they were prepared, and after noted issues had already been addressed. Also, the proponent did not notify MOE when work that could potentially impact wildlife was starting (but it did notify MOE of work around streams, as required under the *Water Act*).[17] Delayed reporting and limited notification could have made it more difficult for MOE to plan a program of inspections and potentially precluded agencies from timely follow-up on specific issues.

In addition to the IEM's work, direct monitoring was also undertaken by other agencies. For example, DFO monitored and evaluated compliance with the habitat protection provisions of the *Fisheries Act* and the conditions of the *Fisheries Act* authorization. DFO's work identified four bridges that failed to provide unimpeded fish passage under all flow conditions.[li] However, DFO did not inspect harvesting at riparian areas for adherence to its operational statement for overhead line construction, or follow up on any particular issues identified by the IEM.

[15] Stop-work orders are documented in the February 16, 2008, and March 26, 2010, IEM reports.
[16] Based on the proponent's representation of April 21, 2011; unconfirmed at the time of writing.
[17] The proponent also notified DFO when starting in-stream works that required authorization, and MFLNRO when it started timber harvesting clearing plan sections under the OLTC.

MFR[18] conducted periodic inspections of work on forest service roads and timber harvesting. The compliance and enforcement section of the ministry (C&E) risk-rated each OLTC and inspected sections of the transmission line between September 2007 and January 2010. C&E was aware of when and where logging for the transmission line was happening (since it required notification as a condition of the OLTC). These are all characteristics of an effective monitoring and enforcement program.

C&E concentrated its inspections on forest service roads, unauthorized cutting and fire-hazard control. It expected that forest practices requirements applicable to timber harvesting under the OLTCs would mostly be covered by the independent environmental monitor or other agencies. C&E also did not inspect the new roads authorized under the *Land Act*, which fell under ILMB's jurisdiction.

ILMB and MOE did accompany MFR 11 times on their inspections of timber harvesting, but it did not have formal programs in place for monitoring operations, nor did it have documented procedures in place for dealing with issues identified by independent monitors. EAO also went on site once, but did not have a monitoring and enforcement protocol either. Agency staff reviewed IEM reports, but did not inspect infractions in the field. There was no evidence that any of these agencies considered whether or not penalties, or additional enforcement actions, were needed to deter repeated poor practices, such as fuel spills and sediment into streams.

Findings

Monitoring and enforcement actions had many characteristics of an effective program, particularly the extent of monitoring for compliance through the independent monitor, which appeared sufficiently objective and independent. However, government oversight was not well coordinated and potential non-compliances were not assessed for possible enforcement actions. The enforcement framework was not fully effective.

Cumulative Effects

The complainants asserted that the cumulative environmental effects of the project were not well considered in the environmental assessment process.

Cumulative effects are effects that are likely to result from the disturbance caused by the project in combination with disturbances from other projects or activities that have been, or will be, carried out in the same geographical area.[lii] According to a substantial body of literature, project-level environmental impact assessments, as currently conducted, are poorly suited to, and not the proper venue for, cumulative effects assessment.[liii] Nevertheless, government requires a proponent to undertake a cumulative effects assessment in some circumstances. The Board investigated the proponent's cumulative effects assessment relative to legislated requirements and policy guidance.

[18] Includes monitoring and inspections done by both Timber Tenures and the C&E sections.

Was the cumulative effects assessment consistent with legislation and guidance?

Cumulative effects assessments are not required for road building or timber harvesting activities under a forest major licence. However, run-of river projects reviewable under the *Canadian Environmental Assessment Act* (CEAA) require consideration of cumulative environmental effects. For projects that are reviewable under the provincial *Environmental Assessment Act* (EAA), the proponent must specify the scope and methodology of the cumulative effects assessment at the pre-application phase of the process, in the terms of the reference.[19] Neither statute describes what an assessment should entail.

In this case, the proponent undertook a cumulative impacts assessment and specified the scope and methodology in its application for an Environmental Assessment Certificate, and this was accepted by the EAO and the federal government.

At the time of the assessment the EAO had no explicit policy for assessing the cumulative environmental effects of reviewable projects.[20] However, the CEAA process was guided by an operational policy statement,[liv] the *Cumulative Effects Practitioners Guide*[lv] (Practitioners Guide). The proponent's application stated that its cumulative effects assessment used a methodology consistent with the Practitioners Guide. However, the proponent's assessment methods varied from this guidance in two substantive ways. One was the proponent's method of considering past human actions. It defined cumulative effects as:

> . . . changes to the environment that are caused by a residual impact of the Project in combination with other present and future human actions.

In contrast, the Practitioners Guide defines cumulative effects as:

> . . . changes to the environment that are caused by an action in combination with other **past**, present and future human actions. [lvi] (emphasis added)

The proponent's assessment used current conditions, which are the result of past activities, as the baseline for assessing cumulative effects. A concern with that approach is that if each assessment begins with the current condition as the baseline, and evaluates impacts against that baseline, the assessment process allows the baseline to be continuously eroded. This effect is described by many as "baseline creep" and is discussed in the Practitioners Guide as "nibbling loss."

[19] The *Environmental Assessment Act*, since amended in June 2010, provides the executive director with discretion to require a cumulative effects assessment (section 11(2)(b)).

[20] In April 2010, the EAO amended its user guide to state that it considers cumulative impacts as an inherent part of the assessment process. The guide lists the types of information that the EAO considers when assessing cumulative impacts (e.g., approved land use plans), but does not provide guidance on how to carry out an assessment.

The other difference was that the proponent's methodology did not account for any remaining effects of low magnitude or short duration. Such remaining effects were deemed insignificant (i.e., they were regarded as having no "residual impact"). In contrast, the Practitioners Guide states that, "cumulative effect on [an environmental value] may be significant even though each individual project-specific assessment of that same [environmental value] concludes that the effects are insignificant." [lvii] Not assessing whether individually insignificant impacts might together be significant is contrary to what the Practitioners Guide describes as, "a fundamental principle in the understanding of cumulative effects."[lviii]

Finding

The cumulative effects assessment was consistent with the limited legal requirements, but differed substantively from federal policy guidance.

Public Involvement and Consultation

The complainant asserted that the Toba Montrose project did not involve the public in the same way that traditional forestry operations do. A specific concern was whether public involvement in, and public disclosure of, the routing of the transmission line was adequate. Also, the complainants believe that the project has regional implications and that the proponent should have held public meetings in a larger center than Powell River, perhaps in Campbell River. The Board investigated those specific complaint issues, but an assessment of the overall effectiveness of consultation was beyond the scope of the investigation.

How did consultation differ from what forest licensees must do?

Openness and accountability in forest practices can be achieved in part through effective public consultation. It allows British Columbians to find out what is planned for their forests, express their views and have them considered by decision-makers. Public consultation helps identify important resources and community values so that proponents can address them during the planning and conduct of operations. An effective public consultation process helps individual firms demonstrate to the marketplace that they have considered the diversity of ecological, economic and social factors related to forests.

The Board's experience is that public consultation varies widely amongst forest licensees. Some of the most effective approaches to consultation occur outside of the legal framework. Comparisons of consultation that generalize the forest industry are therefore of limited value. Nevertheless, the legal framework provides parameters around if, when and how consultation should occur. The investigation therefore compares and contrasts consultation requirements and opportunities for run-of-river projects and the forest industry.

In some parts of the province, the public has been able to influence land use decisions regarding forestry through the development of strategic land use plans (SLUPs)—providing that their interests are represented at the planning table.[lix] Public involvement is an inherent component of SLUPs, since reaching consensus—an objective of many strategic plans—requires that public

concerns are heard and addressed. Land and Resource Management Plans (LRMPs), the most common type of SLUP applicable to the forest industry, are based on the principle that:

> The process must be credible to ensure participant support and confidence. All participants must be confident that their opinions and values will be considered during the process and be reflected in the final product. A clear mandate for meaningful public participation is integral to creating and operating a credible process. [lx]

However, SLUPs are not in place for some parts of BC (including the area of the project), and the province has signaled an end to strategic land use planning.[21]

The public also has a limited opportunity to comment on forestry development at the operational level. The forest industry is required to give notice and provide an opportunity for review and comment when developing FSPs. While the plan preparer must consider public review comments, there is no requirement to make changes in response to comments received. FSPs typically include very little information about what is likely to occur. Such details are depicted on more site-specific site plans, but neither public review and comment, nor government approval of site plans are required.[lxi]

Public consultation for run-of river projects is different than for major forest licensees. Opportunities to influence strategic land use issues are limited, as most SLUPs were developed prior to run-of-river projects becoming a significant industry. At the project level, there are no legislated requirements for public consultation in connection with the proponent's licences and permits authorizing roadwork. However, extensive public consultation is required for larger projects that are subject to a provincial environmental assessment, such as the Toba Montrose project.[22]

When deciding upon or varying a project assessment, the EAO executive director must consider the *Public Consultation Policy Regulation*[lxii] and ensure that it is reflected in the assessment. This requires the proponent to outline completed, as well as planned, consultation activities. The minister then assesses the application and the need for further consultation, designating timelines and responsibilities.

The EAO executive director must establish at least one formal comment period, of between 30 and 75 days, and make further periods available unless satisfied that there is insufficient time or insufficient public interest in the project assessment.[lxiii] Typically, the EAO will require a proponent to provide two comment periods—one on the draft application information requirements (i.e., terms of reference) and another at the time the proponent submits its certificate application to the EAO for review. Consultation may also be required post-

[21] "New Direction for Strategic Land Use Planning in BC," <http://ilmbwww.gov.bc.ca/slrp/lrmp/policiesguidelinesandassessements/new_direction/new%20direction%20synopsis.pdf>.

[22] For run-or-river projects not subject to environmental assessment, there is no requirement for public consultation. While this is of potential concern to the public, it is outside of the scope of the investigation.

certification, due to conditions on the assessment certificate or due to the separate consultation requirements of other approval agencies.

In this case, a public open house was held in Powell River in November 2004, during the pre-application phase. Subsequent open houses were held in Powell River and other nearby communities from January to March 2006, during the application review stage. In all, seven open houses were held. The proponent also held informal meetings in Powell River with various community members,[lxiv] and site tours with interest groups.

Finding

Compared to the forest industry, public consultation opportunities for run-of-river development are potentially more limited at the strategic level, but—for projects subject to environmental assessment—more extensive at the project level. For the Toba Montrose project, project-level consultation was extensive and exceeded common practice in the forest industry.

Should the proponent have held a public meeting in a larger centre?

The proponent held seven open houses in nearby communities of Power River, Cortes Island and Sechelt. The proponent was not required to hold a meeting in a larger centre and the EAO policy did not provide guidance on the issue. Also, members of the public did not request such a meeting, despite a high level of awareness about the project.[23] EAO found that there was limited public interest in the project at the time, and stated that there was no indication that a public meeting at a larger centre was warranted, or would have attracted any additional interested parties.

Finding

Under the circumstances, the Board considers that the decision to not have a meeting in a larger centre was reasonable.

Was there adequate public involvement in and disclosure of the routing of the transmission line?

After an environmental certificate was granted, ILMB issued the licences of occupation, providing a wide swath within which the proponent could build the transmission line. The intent was to avoid administrative amendments if the line location needed to change, due to sensitive terrain or other features such as OGMAs. The proponent then located the transmission line within the licence areas with consideration for technical feasibility, cost, and minimizing impacts on forest resources.

The proponent made the proposed location of the transmission line available to the public through open houses and during discussions with various interest groups, including the Powell River Regional District, Powell River Regional Economic Development Society, Eldred Climbers Society and Stillwater Community Advisory Group. The location was also available in the proponent's application, which was posted on the EAO website and was in the libraries of nearby communities.

[23] Both national newspapers ran articles on the proposed project.

The EAO review period resulted in limited comment from the public about the location of the transmission line. The Powell River Alpine Club (PRAC) was concerned about the impact on a campground and on hiking trails. In response, the proponent committed to locating transmission poles so as to minimize impacts. The condition stipulates that, "[If] new concerns are identified through future consultation, the Proponent will respond where possible with Project changes."[24] According to the status report, the PRAC has raised no further concerns.[25]

A community advisory group expressed concerns about effects the proposed location of the route might have on timber resources and proposed an alternative route. The proponent considered the route, and responded that the alternative would have less impact on timber resources and potential AAC reductions. However, the proponent found that it would be more expensive to build and maintain, would have greater impacts on OGMAs, goat winter range, old forest (structural stage 7), recreational and aesthetic values.

Finally, the proponent committed to working with all stakeholders to minimize visual impact along the proposed transmission line corridor.[lxv]

Finding

The proponent made the location of the transmission line known to the public and responded to public concerns about the location of the transmission line. Public involvement in and disclosure of the location of the transmission line was adequate.

Conclusions

Planning and Practices

Observed timber harvesting and roadwork generally complied with legislated and contractual requirements, met commitments in the environmental assessment certificate, and were done to a standard comparable to that of the forest industry.

Monitoring and Enforcement

Monitoring and enforcement actions had many characteristics of an effective program, particularly the extent of monitoring for compliance through the independent monitor, which appeared sufficiently objective and independent. However, government oversight was not well coordinated and potential non-compliances were not assessed for possible enforcement actions. The enforcement framework was not fully effective.

[24] Certificate, page 24. The status report indicates that no further concerns have been identified and that previous concerns were integrated into the management plan set out in Condition 1 (Status Report, July 2007, p. 18).
[25] Status Report, July 2007, p. 18. It also says: "Incorporated into the CEMP (Appendix L). Please see Commitment 1 for status."

Cumulative Effects

The cumulative effects assessment was consistent with the limited legal requirements but differed substantively from federal policy guidance.

Public Involvement and Consultation

Project-level consultation was extensive and exceeded common practice in the forest industry, the decision to not hold a public meeting in a larger regional centre was reasonable, and public involvement in and disclosure of the location of the transmission line was adequate.

Appendix 1: Comparison of the Regulatory Framework

Road work and harvesting for the independent power and forest industries are, in part, regulated by some common statutes. For example, under the federal *Fisheries Act*, the Minister can require compensatory measures by forest licensees and independent power proponents for any harmful alteration, disruption or destruction of fish habitat. The *Heritage Conservation Act* requires that both industries protect and conserve heritage property in BC, including objects and sites that have heritage value to peoples.[26] The *Wildfire Act* requires both industries to have sufficient fire tools and to undertake assessments and fire hazard abatement.[27] Such commonly applicable statutes ensure some consistency in planning and practices for different industries operating on the land.

Other regulatory aspects influencing roadwork and harvesting are unique. Projects generating 50 megawatts or more of electricity, or including a new electric transmission line of 40 kilometres or more in length, require a provincial environmental assessment under the *Environment Assessment Act* (EAA) and the *Reviewable Projects Regulation*, and may require a federal assessment under the *Canadian Assessment Act* (CEAA). BC's environmental assessment process examines major projects for potentially adverse environmental, economic, social, health and heritage effects that may occur during the lifecycle of these projects.[lxvi] It identifies and prevents, minimizes or mitigates adverse effects from a project. The Environment Assessment Office conducts the assessment and prepares recommendations to ministers on whether to issue an environmental assessment certificate.

Strategic land use plans (SLUPs), such as regional land use plans and Land and Resource Management Plans (LRMPs),[28] can guide run-of-river projects but were developed in an era prior to run-of-river projects becoming a significant industry on the landscape. SLUPs therefore have limited relevance to run-of-river projects and there is no legal requirement for a project to adhere to SLUPs.

Major forest licensees are exempt from project-level environmental assessments. However, under forestry legislation, government has established (and can establish) objectives for spatially-designated conservation areas such as ungulate winter ranges, wildlife habitat areas, old-growth management areas and scenic areas. In some locations, objectives have been established partly on the basis of SLUPs (a similar planning approach also applies to oil and gas activities under the *Oil and Gas Activities Act*.)

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[26] The *Heritage Conservation Act* prohibits the damage, desecration, alteration or disruption of a heritage site, a burial place that has historical or archaeological value; an aboriginal rock painting or aboriginal rock carving that has historical or archaeological value; or heritage objects.

[27] Other legislation potentially affecting road work and harvesting include the *Environmental Management Act*, *Fish Protection Act*, *Water Act*, *Water Protection Act*, *Wildlife Act*, *Species at Risk Act*, etc.

[28] An LRMP is, "A strategic, multi-agency, integrated resource plan at the regional level. It is based on the principles of enhanced public involvement, consideration of all resource values, consensus-based decision making, and resource sustainability."—MFLNRO glossary at <http://www.for.gov.bc.ca/hfd/library/documents/glossary/Glossary.pdf>.

Other objectives are set out in the *Forest Planning and Practices Regulation* (FPPR) and apply province-wide, addressing resources such as soils, fish, wildlife, biodiversity, visual quality, cultural heritage resources, and water in community watersheds. A major licensee is legally bound by government objectives, since it must specify results and/or strategies in its FSP that are consistent to the extent practicable with the objectives.[lxvii] The results and strategies must be measurable and verifiable. The licensee must ensure that the results are achieved or that strategies are carried out.[lxviii] The licensee must also prepare a site plan identifying the how the intended results or strategies apply to proposed roads and cutblocks.

For roadwork, practice requirements under the *Forest and Range Practices Act* (FRPA)may or may not apply to a run-of-river project, depending on licensing arrangements. Where a project uses existing forestry roads, road maintenance obligations are imposed by the district manager for forest service roads used under a road use permit, or else the proponent negotiates obligations with the major licensee permitted to use the road. Key FRPA requirements typically apply, including maintaining the road prism, maintaining natural drainage patterns and ensuring that roads are safe for industrial users. In contrast, new roads for run-of-river projects are typically authorized through a Licence of Occupation under the *Land Act* and are not subject to FRPA's practice requirements.

For timber harvesting, some, but not all, of FRPA's practice requirements apply to run-of-river projects. Harvesting is authorized by a district manager under and occupant licence to cut (OLTC), which is a minor tenure under the *Forest Act*.[lxix] FRPA is unclear regarding which practice requirements apply to minor tenures. The Ministry of Forests, Lands and Natural Resource Operations policy states that minor tenure holders have to follow only select practice requirements, but doesn't specify which ones[lxx]. The Board's interpretation is that the main FRPA practice requirements that do not apply to timber harvesting are those for:

- invasive plants (section 47 of FRPA);
- natural range barriers (section 48 of FRPA);
- soil disturbance limits for area to be reforested (sections 35 and 36 of FPPR);
- restrictions on harvesting and road building in management areas next to fish streams (section 51(1) of FPPR);
- retaining wildlife trees in cutblocks (section 66 FPPR); and
- establishment of free growing stands (section 44 of FPPR).

Table 1. Key Differences in the Regulatory Frameworks related to Road Work and Timber Harvesting

	Run-of-River Project	Major Forest Licence
Detailed assessment of environmental impacts as per the EAA	Required for projects generating >50 megawatts or with new transmission line >40km.[29]	Not Required
Government objectives for: • Strategic land use plans • Soils, timber, species at risk, riparian values, fish habitat in fish-sensitive watersheds, wildlife and biodiversity, visual quality and cultural resource values (enacted through FRPA) • Spatially-defined conservation areas (enacted through the *Land Act* and *Government Actions Regulation*)	Not required by legislation[30]	The licensee must: 1. prepare an FSP specifying results or strategies that are consistent with government objectives; 2. prepare a site plan demonstrating how the results and strategies apply to roads and cutblocks; and 3. implement strategies and achieve results.
FRPA practice requirements	• Applicable for existing forestry roads authorized under *Road Use Permit* or *Road Use Agreement* • Not applicable for new roads authorized under the *Land Act*[31] • Applicable for timber harvesting authorized under an OLTC, except for some requirements regarding managing invasive plants, natural range barriers, soil disturbance limits, and establishing free growing stands[32]	Applicable[33]

[29] Projects generating less than 50 megawatts are not subject to environmental assessment, but still require land tenure, a water licence and other approvals. Expectations for the management of forest resources are provided through the ILMB handbook, *Independent Power Production in B.C.: An Inter-agency Guidebook for Proponents*, 2010.
[30] Permit and license requirements might compel a licensee to consider government objectives for managing forest resource values.
[31] Permit and license requirements might specify additional forest practice requirements.
[32] Permit and license requirements might specify additional forest practice requirements.
[33] For some FRPA objectives, a licensee can use default practice requirements set out in FRPA instead of specifying results and strategies.

Appendix 2: Proponent Commitments that Relate to Government's Objectives for Managing Forest Resources

Run-of-river project proponents are not required to manage for the government objectives for forest resources specified in the *Forest Planning and Practices Regulation* (FPPR). Nevertheless, some of the proponent's commitments[34] relate to those government objectives, and are summarized below. The Board investigated whether the proponent fulfilled commitments that link to complaint issues as described in the body of the report. The outcome of other commitments was not investigated.

Soils

FPPR Objective

The objective set by government for soils is, "without unduly reducing the supply of timber from British Columbia's forests, to conserve the productivity and the hydrologic function of soils." (FPPR, s. 5)

Proponent Commitments

Sedimentation and Erosion	65. Adequate erosion prevention and sediment control measures will be put in place both during and after construction.
Reclamation of Disturbed Areas	34. Where practicable or required to avoid potential erosion risks, disturbed areas will be re-seeded with native species, and coarse woody debris will be added to some disturbed areas. In areas where revegetation with native species is not practical, revegetation will be carried out in accordance with generally accepted forestry and resource road practices.

[34] Made through the provincial environmental assessment certificate E07-01.

Timber

FPPR Objective

The objectives set by government for timber are to: "(a) maintain or enhance an economically valuable supply of commercial timber from British Columbia's forests." (FPPR, s. 6(a))

Proponent Commitments

Restricted Harvesting Areas Adjacent to the Transmission Line	48. Locations where potential timber harvesting areas may become isolated will be examined further during the detailed design phase to limit isolation impacts where practicable in consultation with the forest companies. Routing alternatives and cost effective design changes will be considered during detailed design to reduce, to the extent feasible the impact on the Allowable Annual Cut and forestry operations with due regard for the final transmission cost, any potential time delays and site impacts.
Consultation with forestry sector	55. The Proponent will continue to liaise with the licensees of TFL 10 and TFL 39, and will liaise with BC Timber Sales, the Ministry of Forests and Range, and forest licensees.

Wildlife

FPPR Objective

The objective set by government for wildlife is, "without unduly reducing the supply of timber from British Columbia's forests, to conserve sufficient wildlife habitat in terms of amount of area, distribution of areas and attributes of those areas, for (a) the survival of species at risk, (b) the survival of regionally important wildlife, and (c) the winter survival of specified ungulate species." (FPPR, s. 7)

Proponent Commitments

Old-Growth Management Areas (OGMAs)	30. Transmission lines will be routed around OGMAs where possible. Old Growth Management Areas that are affected by the transmission line can be relocated, with consideration of the OGMA purpose, and consultation with Integrated Land Management Bureau and the licensee
Species at Risk	33. Where possible, project infrastructure will be located away from known habitats of species at risk.
Wildlife Habitat Along Transmission Line	19. The proposed transmission line will be routed to avoid sensitive wildlife areas where practicable. In some cases where road building will allow unwanted recreational vehicle access to sensitive areas, access roads to such areas will be decommissioned.
Rare Plants and Ecological Communities	32. Sensitive ecosystems and potential areas where rare plants could occur will be identified along the final alignments. Wherever practicable, sites with sensitive plant communities will be avoided, clearing in sensitive ecosystems and areas with potential rare plants will be limited, and large patches of sensitive plant communities will not be fragmented.
Sensitive Ecosystems	27. Identified sensitive ecosystems will be flagged and fenced off if located adjacent to the project footprints.
Stand Level - Commitments	*The certificate also includes many stand-level commitments for managing amphibians, birds, mountain goats and habitat for wildlife.*

Water, Fish, Wildlife and Biodiversity Within Riparian Areas

FPPR Objective

"Without unduly reducing the supply of timber from British Columbia's forests, to conserve, at the landscape level, the water quality, fish habitat, wildlife habitat and biodiversity associated with those riparian areas." (FPPR, s. 8)

Proponent Commitments

Fish and Fish Habitat	12. The proponent will comply with in-stream construction fisheries windows for all in-stream works unless a variance is reviewed by the Department of Fisheries and Oceans.
Fish and Fish Habitat	11. The proponents will commit to developing a Fish Habitat Compensation Plan (FHCP) for any harmful alteration, destruction or disruption (HADD) to fish habitat, including wetlands that cannot be avoided through mitigation measures. The rationale for the amount of fish habitat compensation will be based on residual impacts on fish habitat as identified by the Department of Fisheries and Oceans. The FHCP will include a detailed post construction monitoring plan to ensure that the compensation works are functioning as designed.
In-Stream Works	13. In-stream works will be completed in accordance with the *Water Act*.
Sedimentation and Erosion	65. Adequate erosion prevention and sediment control measures will be put in place both during and after construction.
Appropriate Standards for Road Design Will Be Met	63. Design criteria, construction plans, and mitigation for stream and other watercourse crossings along the access road corridor will meet or exceed all standards and codes established by relevant authorities for the project.
Use of Pesticides and Defoliants Along the Transmission Line	29. The proponent will not use pesticides, herbicides and defoliants, and will clear the transmission right-of-way manually or mechanically. Any use of pesticides, herbicides or defoliants will require consultation with First Nations by the proponent.

Wildlife and Biodiversity — Landscape Level

FPPR Objective

The objective set by government for wildlife and biodiversity at the landscape level is, "without unduly reducing the supply of timber from British Columbia's forests and to the extent practicable, to design areas on which timber harvesting is to be carried out that resemble, both spatially and temporally, the patterns of natural disturbance that occur within the landscape." (FPPR, s. 9)

Proponent Commitments

No comparable commitments were made (a linear transmission line is incompatible with the objective).

Wildlife and biodiversity — Stand Level

FPPR Objective

The objective set by government for wildlife and biodiversity at the stand level is, "without unduly reducing the supply of timber from British Columbia's forests, to retain wildlife trees." (FPPR, s. 9)

Proponent Commitments

Riparian Vegetation	26. Riparian vegetation clearing will be limited to the necessary footprint only to permit the construction of the works, and wildlife trees will be retained where possible.
Wildlife Habitat Retention	18. Where live or dead large trees must be removed on footprint edges, consideration will be given to creating stubs by leaving three- to five-metre tall stumps, as long as this can be done safely under current WCB regulations.

Visual quality

FPPR Objective

The objective set by government in relation to visual quality for a scenic area, that (a) was established on or before October 24, 2002, and (b) for which there is no visual quality objective is "to ensure that the altered forest landscape for the scenic are:

- in visual sensitivity class 1 is in either the preservation or retention category,
- in visual sensitivity class 2 is in either the retention or partial retention category,
- in visual sensitivity class 3 is in either the partial retention or modification category,
- in visual sensitivity class 4 is in either the partial retention or modification category, and
- in visual sensitivity class 5 is in either the modification or maximum modification category." (FPPR, s. 9.2)

Proponent Commitments

Potential Visual Impacts to Forestry Regarding Transmission Lines	61. The proponent has committed to working with all stakeholders to minimize visual impacts along the proposed transmission corridor. The proponent will continue to meet with both the forest company involved and with the community advisory group relative to their forest practices.

Cultural Heritage Resources

FPPR Objective

The objective set by government for cultural heritage resources is "to conserve, or, if necessary, protect cultural heritage resources that are (a) the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and (b) not regulated under the *Heritage Conservation Act*."[35] (FPPR, s. 10)

Proponent Commitments

Archaeological Resources	37. All identified archaeological resources will be conserved in compliance with the *Heritage Conservation Act*. Further, as part of the Archaeological Impact Assessment undertaken by Arcas Consulting Archaeologist Ltd (September 2006), the following recommendations of the archaeologist are to be followed: • An archaeologist and representative from the Klahoose First Nation should be present on site during construction activities to ensure that all known sites are not impacted; • An archaeologist and representative from the Sechelt Indian Band should be present on site during construction activities in sensitive areas, to ensure that sites are not impacted; • An archaeologist and representative from the Sliammon First Nation should be present on site during construction activities in any sensitive areas, should any be identified; • The proponent and their representatives inform all contractors on this project that archaeological sites in British Columbia are protected from disturbance, intentional or inadvertent, by the *Heritage Conservation Act*; and • In the event that unanticipated archaeological remains are encountered, ground disturbance in the immediate vicinity must be suspended at once, and the Archaeology Branch and appropriate First Nations' communities, are to be informed, as soon as possible, about the location and type of archaeological remains and the nature of the disturbance.
First Nations	38. The proponent will work with the Klahoose First Nation to develop and maintain the construction camp site pending their feedback and further discussions concerning the proposal.
First Nations	39. The proponent proposes to have job training programs in place and advertise contract specifications so that First Nations individuals and companies have the opportunity to participate in the project.
First Nations	40. Continue to work in adherence to the Statement on Working Relationships with First Nations" published by Plutonic Power Corporation. "
Impact Benefit Agreement	41. An Impact Benefit Agreement has been negotiated and ratified by the Klahoose First Nation. The Impact Benefit Agreement will cover agreements on principles for construction and operation, the Klahoose First Nation/proponent project liaison committee, opportunities for First Nation employment, training and contracting, access through the Klahoose First Nation IR #1 for construction, continued access for the life of the project, and other financial terms regarding access for the Klahoose First Nation.
Traditional Use	42. Incorporate a Traditional Use Monitoring Plan into the Construction Environmental Management Plan for Klahoose First Nation Traditional Territory.

[35] Forest licensees must also comply with the provisions of the *Heritage Conservation Act*.

Traditional Use	43. The proponent has relied on direct negotiations with First Nations to determine impacts to traditional use areas. The proponent will ensure there are minimal or no negative residual impacts which accrue to First Nations through intensive negotiation and consultation, including the development of Wildlife Monitoring Plans.
Cultural and Heritage Resources	44. The program of consultation and transparency will continue as the Project advances, to enable responses to any new identified issues. The Project will minimize or avoid disturbances wherever cultural or heritage resources are identified. If, after all other options have been exhausted, impacts cannot be avoided through alteration of Project design, studies will be conducted in consultation with First Nation or other stakeholders to produce mitigation plans directed at retrieving the resource values prior to any impact.
Commercial Land and Resource Use	50. In consultation between the proponent and the Klahoose First Nation, public access on the new constructed road through the Klahoose First Nation IR #1 will be restricted with a set of policies and procedures agreed to between the two parties.
Commercial Land and Resource Use	51. The proponent must obtain a Section 28(2) permit under the Indian Act for use of the road through the Klahoose First Nation IR #1.

Appendix 3: Summary of Monitoring and Enforcement Authority Related to Run-of-River Projects

Authority is described as it existed when the project was under development.

Ministry of Forests and Range (MFR). The *Forest and Range Practices Act* (FRPA)provides MFR with broad powers to enforce forestry planning and practice requirements. Its enforcement activities generally begin with monitoring and inspections. If problems are discovered, FRPA provides a number of tools available to the ministries to promote compliance. These tools escalate in severity through written compliance notices, stop-work orders, administrative penalties, suspension of license and prosecution.

Integrated Land Management Bureau. The *Land Act* allows the director to authorize a license of occupation under the *Land Act*, which may include provisions for managing forest resources. While the Act does not provide the Minister with enforcement authority, the director can pursue any breaches of contractual obligations through the Courts. The licence of occupation issued under the *Land Act* is a two-party agreement between the Crown and the licensee. Under the agreement, failure to meet conditions may, after 60-day notice, result in termination of agreement and right to use land ceases (pp 12, 13 of agreement).

Department of Fisheries and Oceans (DFO). DFO's authority includes managing fisheries under the federal *Fisheries Act*. The Act regulates impacts on fish and fish habitat associated with works, undertakings, operations and activities occurring in or around fresh and marine waters throughout Canada. It prohibits a person from undertaking work that results in the harmful alteration, disruption or destruction of fish habitat (section 35 (1)) unless authorized by the Minister under section 35(2). While a project does not need a 35(2) authorization to proceed, if harmful alteration, disruption or destruction of fish habitat results but was not authorized, the proponent may be guilty of an offence. The penalties for violating subsection 35(1) include fines of up to $1,000,000, up to three years imprisonment, or a combination of both.

Ministry of Environment. Among other legislation, the ministry enforces the *Environment Management Act*, *Park Act*, *Water Act*, *Wildlife Act*, *Forest and Range Practices Act*, *Wildfire Act* and the federal *Fisheries Act.* It is also responsible for the *Environmental Assessment Act*.

Environmental Assessment Office (EAO). The *Environmental Assessment Act* allows the minister or delegate to inspect work connected with the reviewable project, issue stop work orders, and order remediation to mitigate the effects of non-compliance. Also, the minister can apply for a supreme court order to enforce ministerial orders. The minister may suspend some or all or the rights granted under an environmental certificate for failing to comply with a minister's or supreme court order. Violations are punishable with fines of up to $200,000.

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Forest Practices Board

NEWS RELEASE

For Immediate Release
June 9, 2011

Investigation of run-of-river power project concludes

VICTORIA – An investigation into a complaint about a run-of-river power project in Toba Inlet, north of Powell River, found that harvesting and road building followed requirements to protect the environment, according to a Forest Practices Board report released today.

"The requirements for this project were similar to those required of forestry operations and, in some cases, were more stringent," said board chair Al Gorley. "For example, they hired an independent monitor to oversee the construction work, and public involvement and consultation exceeded what is required for forestry operations."

"We also found that, in future, government and independent power proponents could improve some aspects of their work, for example, co-ordinating government monitoring and enforcement, and including previous development activity when assessing cumulative environmental effects," Gorley said.

The complaint was made by the Sierra Club of BC and the Friends of Bute Inlet, who were concerned about environmental impacts, government monitoring efforts, and effectiveness of consultation and project monitoring. While the board does not have authority to investigate all aspects of the complaint, it investigated logging, road building and related planning under the Forest and Range Practices Act.

The Toba Montrose Creek hydroelectric project, a private run-of river facility to provide electricity to the B.C. system, was approved by both the provincial and federal governments in 2007 and began operating in August 2010.

The Forest Practices Board is B.C.'s independent watchdog for sound forest and range practices, reporting its findings and recommendations directly to the public and government. The board is required to investigate public complaints about forest planning and practices.

- 30 -

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