

GENERAL REVIEW STATEMENT

**NEW BRUNSWICK DEPARTMENT OF
SUPPLY AND SERVICES
EEL RIVER DAM REMOVAL/
DECOMMISSIONING PROJECT**

August 2006

**Prepared by:
NB Department of Environment**

**New
Nouveau  Brunswick**

Environment

1. INTRODUCTION

This General Review Statement summarizes the opinions of the Technical Review Committee (TRC) regarding the Environmental Impact Assessment (EIA) of a proposal by the NB Department of Supply and Services (DSS) to decommission (i.e., remove) the existing Eel River Dam, located south of the Town of Dalhousie, NB. Specifically, the existing dam is located 600 m upstream of NB Highway 134 at Eel River Bar, and extends from the Eel River Bar First Nation (ERBFN) on the north to the Blue Heron Campground/Park on the South (Restigouche County).

The proposed project consists of the removal of the Eel River Dam, including the earthen dyke, concrete water control structure, and ancillary infrastructure (e.g., fish passage facilities), and the installation of erosion and scour protection, as necessary. An adaptive management approach to dam removal consisting of three phases or stages will be implemented to ensure that significant negative environmental effects are avoided.

Stage 1 includes activities relating to final design, acquisition of permits and communication that must be carried out prior to creating the opening in the dam. A 150 m-wide opening will be created in the north end of the dam as part of Stage 2, with a temporary rockfill barrier put in place to control turbidity/sedimentation. The remainder of the dam will be removed during Stage 3 by excavating in a southerly direction from the initial 150 m opening. The existing control structure and gates of the dam will be removed and the original shoreline re-established.

An EIA report, entitled “Environmental Impact Assessment for the Removal of the Eel River Dam” was prepared pursuant to the *Environmental Impact Assessment Regulation (87-83)* of the Clean Environment Act and to meet the requirements of a Screening-level of assessment under the Canadian Environmental Assessment Act (CEAA). The Final EIA Report was based on Terms of Reference developed by DSS in consideration of the Final EIA Guidelines issued by the Minister of Environment on February 27, 2004. A Draft EIA Report was received on February 1, 2006 for review by the TRC. As a result of deficiencies noted, clarifications sought and additional work identified by the TRC, the Report was revised, and a Final EIA Report satisfying the Final EIA Guidelines was received from DSS on June 30, 2006. Thirty copies of the Final EIA Report (or Environmental Impact Statement, EIS) in both official languages were received on July 28, 2006.

The Technical Review Committee (TRC) established for this project includes representatives from the following agencies:

- NB Department of Environment (DENV);
- NB Department of Natural Resources (DNR);
- NB Department of Health (DH);
- NB Department of Transportation (DOT);
- NB Archaeological Services Unit (ASU);
- Restigouche District Planning Commission (RDPC);
- NB Museum (NBM);
- Canadian Environmental Assessment Agency (the Agency);
- Environment Canada (EC);
- Fisheries and Oceans Canada (DFO);

- Health Canada (HC);
- Transport Canada (TC); and
- Indian and Northern Affairs Canada (INAC).

The principle objective of the EIA Report or EIS is to predict the environmental effects that could be expected should the project proceed and to ensure adequate mitigation is developed.

If, in consideration of the advice of the TRC, the Minister is satisfied that the EIS is complete, the next step in the process is to consult/involve the public in evaluating the potential environmental effects anticipated from this project and their significance.

The General Review Statement summarizes the opinions of the TRC regarding the EIS, and identifies potential impacts that should be brought to the attention of the Minister and the public. Most projects have the potential to produce some level of impact on one or more Valued Environmental Components (VECs). The information in the EIS must identify areas or actions that have impacts that are considered significant, as well as those that are considered insignificant. Thus, a scale of reference is required for determining the significance of environmental impacts in order to compare their relative importance. This is called "Criteria/Threshold for the Determination of Significance" and is presented for each of the VECs in Section 7.0 of the EIS. The effects analysis, mitigation and follow-up and monitoring proposed for each of the VECs are also presented in Section 7.0 of the EIS.

2. REVIEW OF THE STUDY

In general, the Final EIA Report (EIS) is considered acceptable as having addressed the issues outlined in the Final EIA Guidelines (dated February 27, 2004).

2.1 PROJECT ALTERNATIVES

The Guidelines required that an analysis of alternatives be conducted as part of the EIA study. The null or "do nothing" alternative, alternative methods for removing the dam, alternative erosion and sediment control measures, and alternative methods for removing the control structure, were examined by the proponent. It was anticipated that this analysis would contribute to a further understanding of the project. The TRC is generally satisfied that the information presented provides an adequate basis for comparison.

2.2 POTENTIAL IMPACTS

Background: Construction of the Eel River dam in 1963 resulted in the creation of a freshwater impoundment upstream of the dam. The impounded area currently provides a limited amount of freshwater aquatic habitat, however during extreme tide and surge conditions water overtops the gates of the control structure resulting in salt water intrusion. Downstream of the dam, an estuarine environment exists during primarily high river flow conditions in spring and during high precipitation events. Outside this period, and during low water events, a marine environment dominates, and is sharply divided from the freshwater environment by the dam, with no transitional estuarine environment between these two extreme environments to enable aquatic organisms to acclimatize.

The EIA Report predicts, and the TRC agrees, that removal of the dam is likely to reverse many of the significant negative environmental effects that have resulted since construction

of the dam, including: a dramatic improvement in fish passage in Eel River, natural re-establishment of saltmarsh wetlands upstream of the current dam location, improvement of habitat for soft-shelled clams and other shellfish upstream and downstream of the dam, and the opportunity for diadromous fish species to re-populate the Eel River estuary.

The following sections summarize the environmental effects analysis of the proposed dam removal, focusing on specific significant impacts to VECs predicted in the Final EIA Report and the opinions of the TRC.

Atmospheric Environment: The EIA Report predicts that emissions/noise generated by construction equipment during decommissioning will result in temporary, insignificant effects to air quality. The TRC is satisfied with the information presented in the atmospheric environment section and generally agrees with the findings of the EIA report.

Fish & Fish Habitat: The TRC required that the proponent implement a field monitoring program prior to finalization of the EIS to monitor temperature and oxygen levels over time. Results of the monitoring program are summarized in the Final EIA Report, and include relevant information on water characteristics, and the effectiveness of the existing fish way. Overall there will be a loss of freshwater fish species within the impoundment if the dam is removed. However, this loss is deemed insignificant given that fish passage will be restored, overall water quality will be improved, and the estuarine edge habitat (i.e., fresh-saltwater interface) will be restored. The TRC requested that details be included in the EIA Report on how the removal of the dam would impact the existing ecosystem (impoundment), and generally agrees with the findings of the EIA report.

Terrestrial, Coastal & Wetland Environments: Decommissioning will result in the loss of a small amount of freshwater beaver and muskrat habitat in the area of the impoundment. However, restoration of saltwater marsh vegetation is anticipated to result in a net gain of saltmarsh wetland habitat, including the provision of wildlife habitat functions. The TRC accepts the proponent's commitment that the project will comply with the NB *Coastal Areas Protection Policy* (CAPP), and is satisfied with the proposed mitigation/follow-up for the protection of wetland habitat.

Migratory Birds: The TRC required that existing information supplemented by field surveys (one conducted in the Spring and one in the Fall) be included in the report to adequately assess potential impacts on migratory birds. The EIS identifies that the project will result in a small loss of low quality freshwater migratory bird habitat, however it is anticipated that the project will result in an overall net gain in locally uncommon saltwater marsh habitat. The TRC is generally satisfied with the proposed mitigation/follow-up for the protection of migratory birds.

Species at Risk: As the project will result in a small loss of freshwater habitat in the impoundment, the TRC was concerned about potential impacts to species at risk that may be present in the area. To address this concern, the proponent assembled information on species at risk from existing sources (e.g., Atlantic Canada Conservation Data Centre) and field surveys conducted on foot and by canoe. The TRC accepts the results of the surveys and assessment and is satisfied with the proponent's commitment that the project will comply with the federal Species at Risk Act and the NB Endangered Species Act, and will not result in any significant adverse impacts to species designated as "at risk."

Water Resources: The only identified potentially significant, positive environmental effect of the status quo (i.e., not removing the dam) outlined in the Final EIA Report is the continued provision

of a water supply for the NB Power Thermal Generating Plant in Belledune. NB Power is the only remaining industrial user of the non-potable water from the impoundment and is currently experiencing problems with the quality of the water, which requires treatment/filtration prior to use. If the dam was not removed and NB Power's use of the water supply was to continue beyond 2006, the EIA Report states that NB Power would be facing considerable cost for required system upgrades. NB Power is currently undertaking an economic analysis of alternative water supply sources for its generating station, and the Final EIA Report summarizes a variety of potential alternate supplies. Although replacing the water supply would require additional expenditure, NB Power would bear significant capital and operating costs with the continued use of the system beyond 2006 (i.e., water supply infrastructure upgrades to the piping and spillway structure; financial compensation to ERBFN due to lost fisheries from the presence of the dam, etc.). This reason, along with poor water quality in Eel River and legal issues, may ultimately prevent the continued use of the impoundment as a water supply over the long-term. The TRC will require that the proponent give NB Power ample time to make arrangements to develop an alternative water supply prior to decommissioning of the dam, if approved.

The TRC also expressed concern over the existing and future groundwater quality in the vicinity of Eel River near the dam, and required that the assessment evaluate this concern, including the potential for saltwater intrusion. The Final EIA Report does not predict any significant negative effects on groundwater resources resulting from the proposed decommissioning project, as no groundwater users were identified within the zone of influence of the proposed project. The TRC is satisfied with the information presented in the water resources section of the report and generally agrees with the findings of the Final EIA report.

Vessel Navigation: Removal of the dam will result in a loss of small vessel navigation opportunity within the impounded area during low tide. However, the EIA Report states that this loss is not deemed significant, especially given that the project will result in an overall increase in vessel navigability (i.e., a restored contiguous navigation from the Village of Eel River Crossing to Eel River bar, improved access from Eel Bay to the Eel River estuary, and reduced aquatic vegetation in the former area of the impoundment). In addition, the TRC has clearly communicated to the proponent the requirement for a permit application (i.e., Navigable Waters Protection Act) in advance of ground-disturbing activities, should the project receive EIA approval.

Transportation Network: An assessment was undertaken to determine the potential effects of the project on transportation. Although the assessment predicts increased traffic levels during decommissioning activities and the potential for increased tourism-related traffic after removal of the dam, these effects are predicted to be insignificant, and the TRC has no major concerns with the proposed project with regards to traffic safety and transportation infrastructure.

Aboriginal Land & Resource Use: - The project is located in the immediate vicinity of the Eel River Bar First Nation (ERBFN) and therefore has the potential to affect Aboriginal land and resource use. The proponent has involved/consulted ERBFN throughout the EIA study, and has made a commitment to continue consultations during all phases of the decommissioning project. During the EIA study, ERBFN has expressed support for the proposed removal of the dam and restoration of Eel River. Issues raised to date by ERBFN include the economic loss experienced by Aboriginal fishers due to closure of the clam fishery (resulting from the presence of the dam), and the contribution of the dam to flooding, shoreline erosion, and a higher water table. Removal of the dam will result in a small loss of freshwater habitat in the impoundment for muskrat and beaver (traditionally harvested by Aboriginal peoples in the area) however this is anticipated to be offset by the potential for the restoration of traditional fish and clam populations and traditional plant communities once decommissioning is complete.

The TRC also required the proponent to assess the potential effects of the project on the Aboriginal Heritage Gardens Project, located near the impoundment. Hydrodynamic modelling conducted as part of the assessment did not predict any significant erosion issues related to the Aboriginal Heritage Gardens and/or Blue Heron Campground, and the Final EIA Report does not identify any significant adverse impacts to the Garden Project. In addition, the Aboriginal Heritage Gardens Project development plan calls for the clean-up of the Eel River impoundment and the improvement of water quality at the mouth of Eel River to encourage recreational and eco-tourism related activities along the beaches. Although the proposed decommissioning project is not strictly traditional land use, the Final EIA Report indicates that restoration of the area will likely encourage the ERBFN's use of this area for traditional purposes.

Tourism & Recreation: - The TRC expressed concern over the potential impact of dam removal on the walking trail system in the area, as the project will result in loss of the trail currently crossing over the dam. However, the Final EIA Report predicts that this will be offset by increased recreational opportunities and tourism potential expected as a result of the decommissioning project. The TRC is satisfied with the information presented in the Final EIA Report related to tourism and recreation, and generally agrees with the findings of the report

Labour & Economy: It is anticipated that the project will result in a temporary labour requirement during decommissioning, and an overall small positive effect on the local economy following removal of the dam due to an increase in tourism opportunities. The TRC is in agreement that overall the project will result in a small economic benefit to local area residents/businesses.

Archaeological & Heritage Resources: The Final EIA Report correctly identifies a gap in our knowledge of archaeological resources along Eel River in the vicinity of the existing dam. This information gap is a direct result of the construction and presence of the existing dam, and the TRC will require that a comprehensive archaeological field investigation be conducted by a professional archaeologist immediately following decommissioning (as soon as conditions safely permit). The field investigation will determine the condition of any archaeological/heritage resources present within the assessment area that may be exposed and threatened by erosion or by future human activity/development.

Public Health & Safety: The EIA Report predicts that the risk of flooding to land along the former area of the impoundment (below an elevation of 3.4 m) will be increased slightly, however it is anticipated that this will be mitigated largely by the re-establishment of saltmarsh wetland habitat.

Eel River Cove is presently closed to direct shellfish harvesting due to bacteriological contamination, and bacterial levels in the impoundment area also currently exceed acceptable levels. The Final EIA Report predicts that the project will result in a reduction in bacterial levels in the impoundment area, and that over the longer term, the project will contribute to helping improve water quality in the area increasing the potential for re-establishment of the soft-shelled clam fishery.

The TRC is satisfied with the information presented in the Final EIA Report related to public health and safety, and generally agrees with the findings of the report. In addition, the TRC will require the proponent to characterize the volume and quality of any sediment to be excavated from the impoundment as part of the project prior to removal, to ensure/determine appropriate disposal methods.

Effects of the Environment on the Project: The proposed project is an environmental restoration effort and does not involve permanent infrastructure. As a result, the project is not particularly sensitive to effects of the environment, and any effects are predicted to be temporary and limited to the decommissioning period. However, the TRC required that the proponent evaluate potential effects of the environment on the project, including the potential effects of the environment on the status quo (i.e., on the dam, if it were left in place). The EIA Report states that potential sediment transport/mobilization, tidal prism, flooding and weather all have the potential to affect Stage 2 of the Project (i.e., creation of a 150 m-wide opening in the north end of the dam, and placement of a temporary rockfill barrier). However, it is anticipated that the rockfill barrier will minimize and control flow velocities to prevent excessive scour and provide a safe working environment during decommissioning. By contrast, the effects of the environment on the status quo if the dam were to be left in place will likely persist in the form of sediment plugs, ice jams, and the on-going need for maintenance/retrofitting as a result of climate change and sea level rise.

Cumulative Environmental Effects: The Final EIA Report assessed the potential cumulative effects of the project in combination with a variety of past, current and planned projects/activities, including the Aboriginal Heritage Gardens, the Restigouche Naturalist Club waterfront habitat restoration activities, the Village of Charlo Tourism Development, the Village of Balmoral sewage aeration system, the Village of Atholville water supply evaluation, and commercial fishing activities.

In summary, the assessment found that the potential cumulative environmental effects of the status quo on the biophysical environment will be negative and significant, and will work to negate the positive environmental effects of other identified projects (e.g., improved water quality as a result of the Village of Balmoral Sewage Aeration System). In addition, the status quo is predicted to cumulatively act to worsen the environmental effects of commercial fishing on diadromous fish that use Eel River.

Decommissioning of the dam is predicted to have positive cumulative environmental effects on the biophysical environment in combination with other identified projects/activities (e.g., improvement of overall water quality in the Eel River estuary). In addition, the project will have positive cumulative environmental effects on the socio-economic environment, including the Aboriginal Heritage Gardens and the Village of Charlo Tourism Development. This is expected to further the promotion of tourism and recreation in the region, which will subsequently be positive for the local economy.

The TRC is satisfied with the information presented in the cumulative effects section and generally agrees with the findings of the Final EIA report.

3. SUMMARY

The primary negative effects of the Project on the biophysical environment are on those components of the environment that are dependent upon the freshwater habitat in the impoundment. Freshwater fish species and freshwater wetland plant and wildlife species will lose their freshwater habitat. Some freshwater fish and other freshwater aquatic wildlife will be able to migrate up into the freshwater portion of the river, while others will no longer be able to exist in the natural, restored estuarine system. However, these negative environmental effects are anticipated to be greatly outweighed by the overall benefits of the restoration of natural estuarine conditions.

The Project will also result in many positive environmental effects on the socio-economic environment. There is currently very little recreational activity or opportunity in the Eel River impoundment and estuary. Removing the dam will restore the tidal flow and the natural wetland environment. This will provide improved opportunity for navigation of small motor boats, canoes and kayaks, as well as improved natural recreational opportunities such as bird watching. The restored natural conditions will also benefit the Aboriginal Heritage Gardens, where traditional uses of the natural lands and resources in the area will be featured.

The primary negative environmental effects of the Project on the socio-economic environment are related to temporary disruptions to the road transportation network from increased traffic during the removal of the dam, and temporary elevated noise and dust also generated by activities associated with dam removal. In addition, there could be some temporary degradation in water quality from sediment generated by removal of the dam and released from the area of the impoundment once tidal flow is restored. However, due to the temporary nature of these effects, and the environmental protection measures outlined in the Final EIA Report, the environmental effects are not considered to be significant.

It is concluded that the Final EIA Report is a satisfactory document on which to base a public discussion of the Project and its impacts.