National Energy Board

Office national de l'énergie

NATIONAL ENERGY BOARD ENVIRONMENTAL ASSESSMENT REPORT

Pursuant to the *Canadian Environmental Assessment Act*

Brunswick Pipeline Project

April 2007

Canada

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Applicant Name:	Emera Brunswick Pipeline Company Ltd. (EBPC)
Preliminary Submission Date:	Project Description received 6 January 2006
Application Date:	23 May 2006
CEA Act Registration Date:	29 March 2006
CEA Registry Number:	06-03-17667
National Energy Board (NEB or Board) File Number:	OF-Fac-G-E236-2006-01 01 (3200-E236-1)
CEA Act Law List Trigger:	Section 52 of the *National Energy Board Act*
Date of Environmental Assessment Report:	April 2007

Canada

Cat No. NE23-137/2007E
ISBN 978-0-662-45274-4

This report is published separately in both official languages. This publication is available upon request in multiple formats.

Copies are available on request from:
The Publications Office
National Energy Board
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Phone: 403-299-3562
1-800-899-1265

For pick-up at the NEB office:
Library
Ground Floor

Printed in Canada

N^{o} de cat. NE23-137/2007F
ISBN 978-0-662-73642-4

Ce rapport est publié séparément dans les deux langues officielles. On peut obtenir cette publication sur supports multiples, sur demande.

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Imprimé au Canada

SUMMARY

The Brunswick Pipeline Project (the Project) consists of a natural gas transmission pipeline from the Canaport™ liquefied natural gas (LNG) Terminal at Mispec Point, near Saint John, New Brunswick (NB), to an export point at the Canada-United States (US) border. The Project would include a pipeline of approximately 145 km, about 35 km of which would be within the Saint John area, as well as a number of associated facilities.

The federal Minister of the Environment approved the National Energy Board's (NEB or Board) use of its own public hearing process for assessing the environmental effects of the Project as a substitute for an environmental assessment (EA) by a review panel under the substitution provisions of the *Canadian Environmental Assessment Act* (CEA Act). This Report sets out the rationale, conclusions and recommendations of the Board in relation to its review of the Project under the CEA Act and includes a discussion of recommended mitigation measures and follow-up programs. A number of recommendations were made by the Board, some of which are in this summary. The remaining recommendations are included in section 9 of the EA and are discussed throughout the Report. If the Project proceeds to regulatory approval, the Board would recommend that these be included as conditions to any Certificate issued by the Board.

This Report also provides a summary of comments received from the public. If the Project proceeds to regulatory consideration, it will be considered under the *National Energy Board Act* (NEB Act) for a Certificate of Public Convenience and Necessity, and a decision and Reasons for Decision will be issued under that Act.

The Board considered the evidence of Emera Brunswick Pipeline Company Ltd. (EBPC or the Proponent), Intervenors and Government Participants, and public comments received during its review of the Project. The Board has determined that, provided all commitments made by EBPC in its application and undertakings during the GH-1-2006 proceeding are upheld, and the Board's recommendations are implemented, the Project is not likely to result in significant[1] adverse environmental effects. The Board therefore recommends that the Project be allowed to proceed to regulatory and departmental decision-making as long as the recommendations in this Report are made part of the requirements of any Certificate issued by the NEB.

The Board was asked by Intervenors to include in its review of the Project the environmental effects of the Canaport™ LNG Terminal. However, the Board ruled that the Canaport™ LNG Terminal or the LNG tanker activity was beyond the scope of the project for the EA of the Project. The Board notes that the environmental effects of the Canaport™ Terminal were considered in the environmental assessment conducted by FAs under the CEA Act and by the Province of New Brunswick under provincial environmental assessment regulations. The Board therefore limited its review of the Terminal and tanker traffic to the extent relevant as cumulative environmental effects likely to result from the Project in combination with other projects or activities that have been or will be carried out.

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1 Significant environmental effects would typically involve environmental effects that are a combination of several of high frequency, irreversible, long term in duration, large in extent, or high magnitude.

Purpose of, Need for and Alternatives to the Project

The primary purpose of and need for the Project, according to EBPC, is to provide the necessary new infrastructure to transport natural gas from the Canaport™ LNG Terminal, currently being constructed near Saint John, to markets in Maritimes Canada and the Northeastern US. Alternatives to the Project considered included transportation of the LNG supply by ship, truck or train, but such options did not compare to the cross-border pipeline option in terms of economic feasibility and environmental appropriateness. Further, the existing Saint John Lateral pipeline would not be a technically or economically viable option for meeting the Project's objectives.

Other parties to the hearing argued that expansion of the Maritimes & Northeast Pipeline (M&NP) System would be a safe and economically feasible alternative to the Project and that EBPC's consideration of alternatives to the Project was inadequate.

The Board considered the alternatives and concluded that the need for and the purpose of the Project, for the purpose of the CEA Act EA, are to be established from the perspective of EBPC. The alternatives to the Project to be considered in this EA are to be informed by the purpose of and need for the Project. The Board is satisfied that it was reasonable for EBPC to conclude that the alternatives to the Project it considered, that would meet the purpose of and need for the Project from the Proponent's perspective, were not technically and economically feasible, and therefore are not viable alternatives to the Project. The information provided during the hearing supports EBPC's conclusion.

Alternative Means

EBPC considered several alternative means, including alternative corridors, in selecting its preferred route for the Project. Alternative corridors were considered for both the urban and rural portions of the route, and included a marine crossing of the Bay of Fundy as one of the urban alternatives.

Intervenors argued that EBPC's dismissing of the marine route option was not adequately supported, that EBPC misrepresented or over-estimated the difficulties, costs, or risks associated with the marine crossing, and that a marine crossing would be safer than the proposed route through the City of Saint John.

The Board also considered evidence related to alternative construction methods and size of pipe.

The Board finds that EBPC provided sufficient evidence regarding its consideration of a marine crossing of the Saint John Harbour, and that this evidence underwent broad questioning by parties to the hearing. EBPC's evidence was supported by credible expert witnesses and EBPC's conclusions with respect to the feasibility of a marine crossing were reasonable, based on the evidence adduced.

The Board concludes that EBPC provided adequate information on alternative corridors and construction methods that are technically and economically feasible for the Board to consider these alternative means and their environmental effects. The rationale provided by EBPC for rejecting the alternative means it considered, as well as the Intervenors' proposed alternative

means, is reasonably founded in the evidence, and supports, among other things, the selection of the preferred corridor, construction methods and size of pipe.

Public Participation

Seventy-two parties registered as Intervenors and three parties registered as Government Participants in the NEB's hearing process. In addition, 184 letters of comment from the public were entered onto the record and oral statements were provided by 19 individuals, two of whom represented organizations in Saint John. The Board has taken into consideration comments from the public in assessing the Project.

Various participants expressed dissatisfaction with the public consultation program carried out by the Project Proponent. An evaluation of EBPC's consultation program undertaken pursuant to the guidelines set out in the NEB's Filing Manual, including but not limited to consultation activities related to environmental matters, will be included in the Board's Reasons for Decision issued pursuant to its mandate under the NEB Act. The evaluation in the Reasons for Decision will provide a more comprehensive assessment of the consultation program, including consideration of the comments and concerns raised by participants. While recognizing that certain areas could have been improved, the Board is satisfied that EBPC and the NEB public hearing process have met the requirements for public participation under the CEA Act.

Environmental Effects on the Biophysical Environment

Certain potential adverse environmental effects on the biophysical environment generated particular public concern. These potential adverse environmental effects involved non-standard mitigation measures, monitoring or follow-up programs, or required the implementation of an issue-specific recommendation, and included effects on Species at Risk and Species of Conservation Concern, wetlands and Rockwood Park, as well as effects from unauthorized access to the right of way (RoW) and acid rock drainage. The Board made recommendations with respect to managing biophysical environmental effects, including:

- the development of a site-specific environmental protection plan (EPP) demonstrating evidence of consultation with relevant regulatory authorities;
- the development of an access management plan demonstrating consultation with stakeholders; and
- the design and implementation of follow-up programs related to fish and fish habitat, wetlands, access management, and reclamation of Rockwood Park.

Environmental Effects on the Socio-Economic Environment

Certain potential adverse environmental effects on the socio-economic environment generated particular public interest. These involved non-standard mitigation measures, monitoring or follow-up programs, or required the implementation of an issue-specific recommendation, and included effects on recreational use of Rockwood Park, on heritage resources, and on the current use of lands and resources for traditional purposes by Aboriginal Persons as well as effects from noise. The Board made recommendations with respect to managing socio-economic environmental effects, including:

- an update on the recommendations identified in EBPC's Traditional Ecological Knowledge (TEK) Study;
- conducting archaeological studies and associated monitoring; and
- the design and implementation of follow-up programs related to horizontal directional drill noise management.

Accidents and Malfunctions

Many of the comments received from the public regarding this Project were concerns about the consequences of a pipeline leak or rupture and potential associated fire, concerns about access to communities in the event of an emergency and the capacity of first responders to handle an emergency.

EBPC's proposed Environmental Management Framework includes programs to avoid a pipeline leak or rupture. In the event of a leak or rupture, EBPC has set out the programs it would have in place to respond to emergencies. These programs would be aimed at minimizing the negative effects of a leak or rupture, and include cooperation with first responders and consideration of access to communities.

In this Report, the Board makes specific recommendations regarding the development of an Emergency Procedures Manual and the conduct of emergency response exercises. Given the Environmental Management Framework and the Board's recommendations, the Board is of the view that it is unlikely that the Project would result in a pipeline leak or rupture leading to a fire. EBPC's Emergency Preparedness and Response Program would provide a means of preparing to respond in the event of a leak or rupture. Therefore, the Board finds that the proposed Project would not likely cause significant adverse effects as a result of an accident or malfunction.

Cumulative Environmental Effects

Concerns were expressed regarding the consideration of the Canaport™ LNG Terminal and associated tanker activity in the cumulative effects assessment. Concerns were also expressed regarding cumulative effects resulting from greenhouse gas emissions and on air quality.

The Board concludes that given the nature of the Project, EBPC's proposed mitigation measures, the recommendations of the Board, and the limited extent of any residual effects, that significant adverse cumulative effects of the Project are unlikely.

Need for and Requirements of Follow-up Programs under the CEA Act

The Board considered the need for and requirements of follow-up programs in the EA. Specific areas of follow-up that would be required by the Board include: fish and fish habitat, wetlands, access management, horizontal directional drill noise management, and reclamation of Rockwood Park.

Ongoing Commitments

The Board notes EBPC's commitment to its ongoing consultation program. The Board expects that EBPC would continue consulting with potentially affected stakeholders prior to, during and after construction of the pipeline, and over the lifetime of the Project. Some examples of ongoing consultation are the commitments by EBPC for continuing education programs for first responders and public awareness programs.

Comments on the Substitution Process

The NEB wishes to acknowledge the effort of its federal partners toward streamlining the regulatory process while maintaining the breadth and quality of the environmental assessment. The hearing process, as an integrated process considering environmental assessment as well as other issues relevant to the public interest, allowed the Board to hear from a broad spectrum of participants on a wide range of issues. The input was significant to the Board in its deliberations.

The success of this pilot project was made possible through the commitment and cooperation of the CEA Agency, federal departments involved in the environmental assessment as well as the participation of the people of New Brunswick who shared their views with the Board through written and oral presentations. The NEB also recognizes the cooperation of EBPC and its consultants.

The Board sincerely thanks all who participated in or otherwise supported this hearing and in particular the Board thanks the people of New Brunswick.

Information Sources

The analysis for this environmental assessment report is based on evidence submitted to the NEB by EBPC within the GH-1-2006 proceeding. The analysis also considers the comments received from the public (summarized in Section 5.5) and comments or recommendations received from Responsible Authorities and Federal Authorities (summarized in Appendix 1).

To view this information please refer to the NEB website at www.neb-one.gc.ca. Select "Regulatory Documents", then "Gas" under the "Facilities" list, then "Emera Brunswick Pipeline Company Ltd", and finally "2006-05-02 – Application for the Brunswick Pipeline Project (GH-1-2006)".

For more details on how to obtain documents, please contact the Secretary of the NEB at the address specified in the Section 10.0 of this Report.

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LIST OF ABBREVIATIONS

Al	aluminum
Anadarko	Bear Head LNG Corporation, Anadarko Canada LNG Marketing, Corp. and Anadarko LNG Marketing, LLC
ARD	acid rock drainage
As	arsenic
ATV	all-terrain vehicle
Board	National Energy Board
CCME	Canadian Council of Ministers of the Environment
CEA Act	*Canadian Environmental Assessment Act*
CEA Agency	Canadian Environmental Assessment Agency
CEPA 1999	*Canadian Environmental Protection Act 1999*
CO	carbon monoxide
CO_2	carbon dioxide
CO_2 e/year	carbon dioxide equivalents per year
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CSA	Canadian Standards Association
Cu	copper
DAS	Disposal at Sea
DFO	Department of Fisheries and Oceans Canada
EA	environmental assessment
EBPC, the Applicant, or the Proponent	Emera Brunswick Pipeline Company Ltd.
EC	Environment Canada
Eldridge-Thomases	Dr. Leland Thomas and Ms. Janice Eldridge Thomas
EMO	emergency management organizations
EPP	environmental protection plan
EPZ	emergency planning zone

ERP	field emergency response plan
ESEA	environmental and socio-economic assessment
FA	federal authority
Fe	iron
FORP	the Friends of Rockwood Park
GHG	greenhouse gases
ha	hectare
HADD	harmful alteration, disturbance or destruction
HC	Health Canada
HDD	horizontal directional drill
IPL	international power line
km	kilometre
kPa	kilopascal
LNG	liquefied natural gas
m	metre
M&NP	Maritimes & Northeast Pipeline Management Ltd.
mm	millimetre
Mn	manganese
MMBtu	million British thermal units
NB	New Brunswick
NBDELG	New Brunswick Department of Environment and Local Government
NBDNR	New Brunswick Department of Natural Resources
NBDOE	New Brunswick Department of Environment
NB ESA	*New Brunswick Endangered Species Act*
NB Power	New Brunswick Power
NEB	National Energy Board
NEB Act	*National Energy Board Act*
NPS	nominal pipe size

NRCan	Natural Resources Canada
OPR	*Onshore Pipeline Regulations, 1999*
OPS	operational policy statement
Pembina	the Pembina Institute
ppb	parts per billion
(the) Project	the proposed Brunswick Pipeline Project
psig	pounds per square inch, gauge
RA	responsible authority
Repsol	Repsol Energy Canada Ltd.
RoW	right of way
SARA	*Species at Risk Act*
SJFD	Saint John Fire Department
SJL	Saint John Lateral
TEK	Traditional Ecological Knowledge
UNBI	Union of New Brunswick Indians
US	United States
WAWA	Watercourse and Wetland Alteration Permit
Zn	zinc
$\mu g/m^3$	microgram per cubic metre

GLOSSARY

alternative means	the various ways that are technically and economically feasible that the project can be implemented or carried out
alternatives to	functionally different ways to meet the project need and achieve the project purpose
archaeological and heritage resources	any physical remnants found on top of and/or below the surface of the ground that inform us of past human use of and interaction with the physical environment
cumulative environmental effects	environmental effects that are likely to result effect from the Project in combination with projects or activities that have been or will be carried out (defined in the CEA Act)
construction	construction includes all activities required to construct the Project, including all clearing activities
deer wintering area	an area currently used by deer during winter, including adjacent stands that have a potential for providing shelter and food on a long-term (>50 years) basis
dry crossing	installation of the pipeline under a watercourse involving isolation of the flowing water from the pipeline trench in the watercourse by damming of the water and diverting the flowing water around the construction zone using water pumps or culverts
environmental effect	in respect to a project, (a) any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species as those terms are defined in section 2(1) of the *Species at Risk Act*, (b) any effect of any change referred to in paragraph (a) on health and socioeconomic conditions, on physical and cultural heritage, the current use of lands and resources for traditional purposes by Aboriginal persons, or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, or (c) any change to the project that may be caused by the environment (defined in the CEA Act)

Endangered	under SARA, wildlife species listed as endangered are facing imminent extirpation or extinction
Environmentally Significant Area	an area identified by the Nature Trust of New Brunswick as having a rich area diversity of species or special features (e.g., rare plants or animals)
federal authority (FA)	a) a Minister of the Crown in right of Canada, (b) an agency of the Government or other body established by or pursuant to an Act of Parliament that is ultimately accountable through a Minister of the Crown in right of Canada to Parliament for the conduct of its affairs, (c) any department or departmental corporation set out in Schedule I or II to the Financial Administration Act, and (d) any other body that is prescribed pursuant to regulations made under paragraph 59(e) (defined in the CEA Act)
follow-up program	a program for verifying the accuracy of the environmental assessment of a project, and determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project (defined in the CEA Act)
greenhouse gas	radiative gases in the earth's atmosphere which absorb long-wave heat radiation from the earth's surface and re-radiate it, thereby warming the earth (e.g., carbon dioxide and water vapour)
grubbing	the removal of roots and stumps after clearing activities
horizontal directional drill	a river, railroad, highway, shoreline and marsh crossing technique used in pipeline construction in which the pipe is installed under specified no-dig areas at depths usually greater than conventional crossings. An inverted arc-shaped hole with two sag bends is drilled beneath the no-dig area and the preassembled pipeline is pulled through it
hydrostatic test	a test in which the pipeline is filled with water and pressurized to demonstrate that no defect (e.g., weld integrity) is present that would cause an immediate failure at the operating pressure
induced potential	voltage induced on a pipeline from high voltage overhead powerlines in close proximity

launcher/receiver site	facilities used to launch and receive pipeline internal inspection and cleaning equipment
Mature Coniferous Forest Habitat	stands with the structural and spatial attributes required by old forest-dependent species such as American marten (*Martes americana*)
May be at risk	species or populations that may be at risk of extirpation or extinction, and are therefore candidates for a detailed risk assessment (designated by NBDNR)
meter station	a facility to monitor natural gas flow in pipeline systems (i.e., gas entering and leaving the pipeline system); meter stations may also allow for monitoring of natural gas quality
mitigation	in respect of a project, the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means (defined in the CEA Act)
need for the project	the problem or opportunity the project is intending to solve or satisfy
purpose of the project	what is to be achieved by carrying out the project
Regionally Endangered	under the NB ESA, any indigenous species of fauna or flora threatened with imminent extirpation throughout all or a significant portion of its range in the Province and designated by regulation as regionally endangered
responsible authority (RA)	in relation to a project, a federal authority that is required pursuant to subsection 11(1) of the CEA Act to ensure that an environmental assessment of the project is conducted (defined in the CEA Act)
right of way	the area which must be cleared (vegetation), crossed (watercourse), or developed (land) for the purpose of installing a pipeline
Sensitive	species which are not believed to be at risk of extirpation or extinction, but which may require special attention or protection to prevent them from becoming at risk (designated by NDNR)

Species at Risk	all species listed in Schedule 1 of the SARA as "extirpated", "endangered", or "threatened", or listed by the NB ESA as "endangered" or "regionally endangered"
Species of Conservation Concern	species not under the protection of the SARA or the NB ESA (i.e., listed in the SARA but not as "extirpated", "endangered", or "threatened" in Schedule 1; listed as "species of special concern" within Schedule 1 of the SARA; or ranked as "S1", "S2", or "S3" by the Atlantic Canada Conservation Data Centre and also ranked as "at risk", "may be at risk", or "sensitive" by NBDNR)
Species of Special Concern	under SARA, wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats
Threatened	under SARA, wildlife species that are likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction
Watershed Protection Area	Area in which there are limits to land use that may pose a risk to surface water supplies within the watershed
wet crossing	installation of the pipeline under a watercourse by constructing directly through the undiverted flow of the watercourse

1.0 SUBSTITUTION PROCESS FOR THE ENVIRONMENTAL ASSESSMENT OF THE BRUNSWICK PIPELINE PROJECT

1.1 Environmental Assessment Coordination

The National Energy Board (NEB or the Board) received a project description for the proposed Brunswick Pipeline Project (the Project) from Maritimes & Northeast Pipeline Management Ltd. (M&NP) on 6 January 2006. The NEB then notified potential federal and provincial authorities about the Project, pursuant to the *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements* under the *Canadian Environmental Assessment Act* (CEA Act).

The NEB, the Department of Fisheries and Oceans Canada (DFO), and Transport Canada are responsible authorities (RAs) pursuant to the CEA Act for the environmental assessment (EA) of the Project. Environment Canada (EC) and the Canadian Transportation Agency identified themselves as possible RAs for the EA.

The potential federal permits and authorizations that triggered the CEA Act and would or may be necessary for the Project are:

- a Certificate of Public Convenience and Necessity issued pursuant to section 52 of the *National Energy Board Act* (NEB Act);
- authorization by DFO pursuant to subsection 35(2) and/or section 32 of the *Fisheries Act*;
- authorization by Transport Canada under section 5(1) or 6(4) of the *Navigable Waters Protection Act* or section 108 and 109 of the NEB Act;
- authorization by EC for disposal at sea pursuant to the *Canadian Environmental Protection Act* (CEPA 1999); and
- authorization by the Canadian Transportation Agency under subsection 101(3) of the *Canada Transportation Act.*

To assist in the EA process, Natural Resources Canada (NRCan) and Health Canada (HC) provided expert advice in relation to the Project.

Comments, recommendations and specialist advice received by RAs and federal authorities (FAs)[2] during the process have been addressed in relevant sections of this EA Report and are summarized in Appendix 1.

The Project must be registered as an undertaking pursuant to the New Brunswick *Environmental Impact Assessment Regulation* under the New Brunswick *Clean Environment Act*. The New Brunswick Department of Environment (NBDOE) administers this regulation and requires that an environmental impact assessment be carried out and approved by the Government of New Brunswick before the Project can proceed.

2 The definitions of RA and FA are set out in the Glossary.

The NEB coordinated the EA process with all involved federal and provincial departments. The Canadian Environmental Assessment Agency (the CEA Agency) was also involved in coordination activities.

1.2 Process

Based on M&NP's January 2006 project description mentioned above, the NEB determined on 16 February 2006 that the Project required a comprehensive study pursuant to the CEA Act *Comprehensive Study List Regulations*. On 16 March 2006, the NEB subsequently requested, on behalf of the RAs, that the federal Minister of the Environment refer the Project to panel review. In the same letter, the NEB requested that the panel review be conducted by the NEB under the substitution provisions of the CEA Act. On 3 May 2006, the Minister of the Environment referred the Project to panel review and approved the NEB's request for substitution pursuant to subsection 43(1) of the CEA Act.

The substitution provisions of the CEA Act allow an FA to use its own process for assessing the environmental effects of a project as a substitute for an EA by a review panel under the CEA Act. In this case, the Minister's approval allowed the NEB's public hearing process to substitute for an EA by a review panel under the CEA Act. The requirements for the substituted process were set out in correspondence among the CEA Agency, the NEB, and the Minister of the Environment, attached as Appendix 2.

In a letter dated 14 March 2006, M&NP advised the NEB and the CEA Agency that upon further review, the actual applicant for the Project may be a distinct special-purpose corporate entity. The identity and ownership of the entity may change, but the physical project would remain as described in the project description.

The NEB received an application for the Project on 23 May 2006 from Emera Brunswick Pipeline Company Ltd. (EBPC, the Applicant or the Proponent), as the new owner of the Project. The NEB released the hearing order for the NEB public hearing process on 9 June 2006. Hearing Order GH-1-2006 set out opportunities for participation in the process through letters of comment, oral statements or interventions. For FAs, or provincial agencies with an EA responsibility for the Project, the Hearing Order also offered the opportunity for participation as a Government Participant. Seventy-two parties registered as Intervenors and three parties registered as Government Participants in the process.

Based on the 6 January 2006 project description submitted by M&NP, the NEB released a draft EA Scoping Document for the Project on 5 May 2006 for public comment. Several comments on the draft document were received during the comment period, which closed on 7 June 2006. EBPC replied to the public comments on 12 June 2006. A summary of all comments received by the NEB on the draft document is included in Appendix 3.

After considering comments received on the Scoping Document, the NEB determined and released the scope of the EA on 23 June 2006 (Appendix 4). Based on the requirements of the CEA Act and the factors to be considered as set out in the Scoping Document, the EA includes a consideration of the following factors listed in paragraphs 16(1)(a) to (d) and subsection 16(2) of the CEA Act:

1. the environmental effects of the Project, including the environmental effects of malfunctions or accidents that may occur in connection with the Project and any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out;
2. the significance of the effects referred to in paragraph 1;
3. comments from the public that are received during the public review;
4. measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project;
5. the purpose of the Project;
6. alternative means of carrying out the Project that are technically and economically feasible and the environmental effects of any such alternative means;
7. the need for, and the requirements of, any follow-up program in respect of the Project; and
8. the capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future.

In accordance with paragraph 16(1)(e) of the CEA Act, the EA also includes a consideration of the following additional matters:

1. the need for the Project; and
2. alternatives to the Project.

During the public hearing process, referred to as the GH-1-2006 proceeding, the NEB obtained information from EBPC through both written and oral processes. Prior to the oral portion of the hearing, the Applicant, Intervenors and Government Participants had the opportunity to provide written evidence, and responded to information requests from the NEB and other parties on this evidence. In addition, 184 letters of comment from the public were entered onto the record for the GH-1-2006 proceeding.

The oral portion of the public hearing was held in Saint John, New Brunswick (NB) from 6 to 20 November 2006. EBPC presented five witness panels which were cross-examined by Intervenors and questioned by the Board. Intervenor witness panels were also available for cross-examination. Oral statements were provided by 19 individuals, two of whom represented organizations in Saint John. The written final argument portion of the hearing concluded on 22 December 2006. The entire NEB public hearing process allowed a variety of participants to provide their views on the Project - Intervenors, Government Participants, letter of comment writers and oral statement makers, including individuals, organizations and government representatives.

In the past, panel reviews under the CEA Act have often been integrated with the NEB's public hearing process under the NEB Act, as have EAs of projects undertaken at a screening or comprehensive study level. The hearing process used for this proceeding was very similar. The primary differences between a panel review carried out in an integrated manner with the NEB public hearing process and the current substituted process are:

- all panel members are members of the NEB in the substituted process; and
- the Project was quickly referred to a panel review and a substituted process as opposed to undergoing a more extended EA track decision process which would require a public consultation process on a proposed scope of the EA followed by the preparation and submission of a track recommendation report to the Minister of the Environment.

1.3 Environmental Assessment Report

In this EA Report, the Board sets out its rationale, findings, conclusions and recommendations, including any mitigation measures that should be implemented and the NEB's recommended follow-up programs should the Project be approved under the NEB Act. This Report also provides a summary of comments received from the public (see section 5.5). Once issued, this Report will be submitted to the Minister of the Environment and the RA Ministers for the preparation of the government response.

The NEB must await the government response to this EA Report and take this into consideration before making any decision under the NEB Act. The content of this Report and the government response will be considered in the Board's deliberations, but the conclusions reached in this Report do not dictate the outcome of the Board's regulatory decision under the NEB Act, as there are additional factors beyond those considered in the EA that the Board must consider under the NEB Act in order to determine whether the Project is in the present and future public convenience and necessity.

1.4 Participant Funding

The CEA Agency administered a Participant Funding Program to assist the participation by interested individuals and organizations in the environmental review of the Project. The independent funding committee assessed applications for funding and awarded a total of $135,900 to six parties. The funds were intended to assist recipients in reviewing the application and in preparing for and participating in EA portions of the GH-1-2006 proceeding.

2.0 DESCRIPTION OF THE PROJECT

EBPC described the Project as a stand-alone, separately-owned pipeline project. It is not integrated with the system owned and operated by M&NP in Canada. M&NP commenced development of the Project on a stand-alone basis, separate from the rest of its system. On 15 May 2006, M&NP transferred all of its rights and interests in the Project to EBPC. The Project as discussed in this Report is based on the evidence submitted by EBPC as the Applicant.

2.1 Project Maps

Figures 1 through 4 provide maps of the Project that are referred to in subsequent sections.

Figure 1
Preferred Corridor and Rockwood Park Variants - Brunswick Pipeline Project

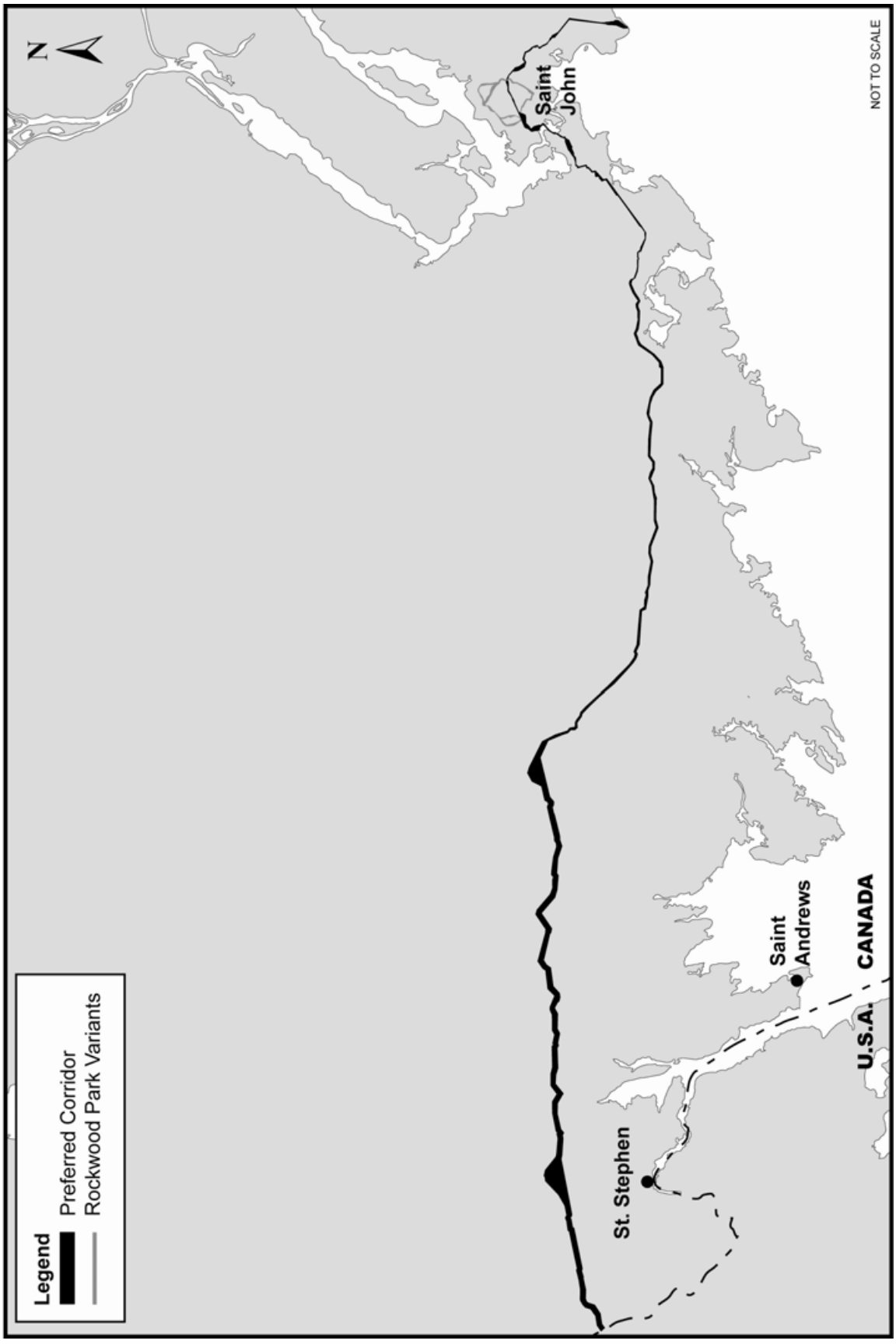


Figure 2
Proposed Pipeline Corridors - Preliminary Evaluation of Proposed Pipeline Routes

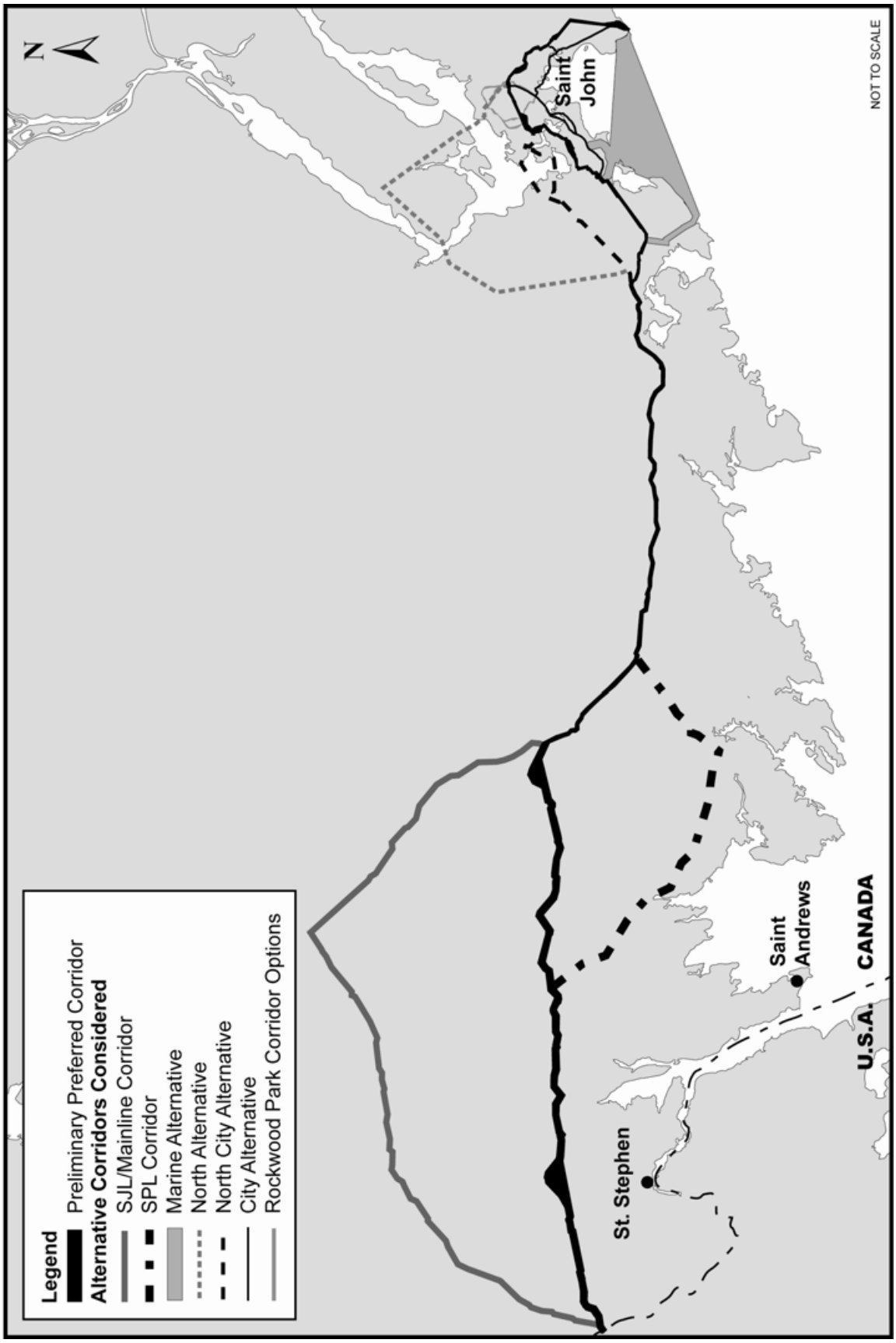


Figure 3
Proposed Urban Pipeline Corridors - Preliminary Evaluation of Proposed Pipeline Routes

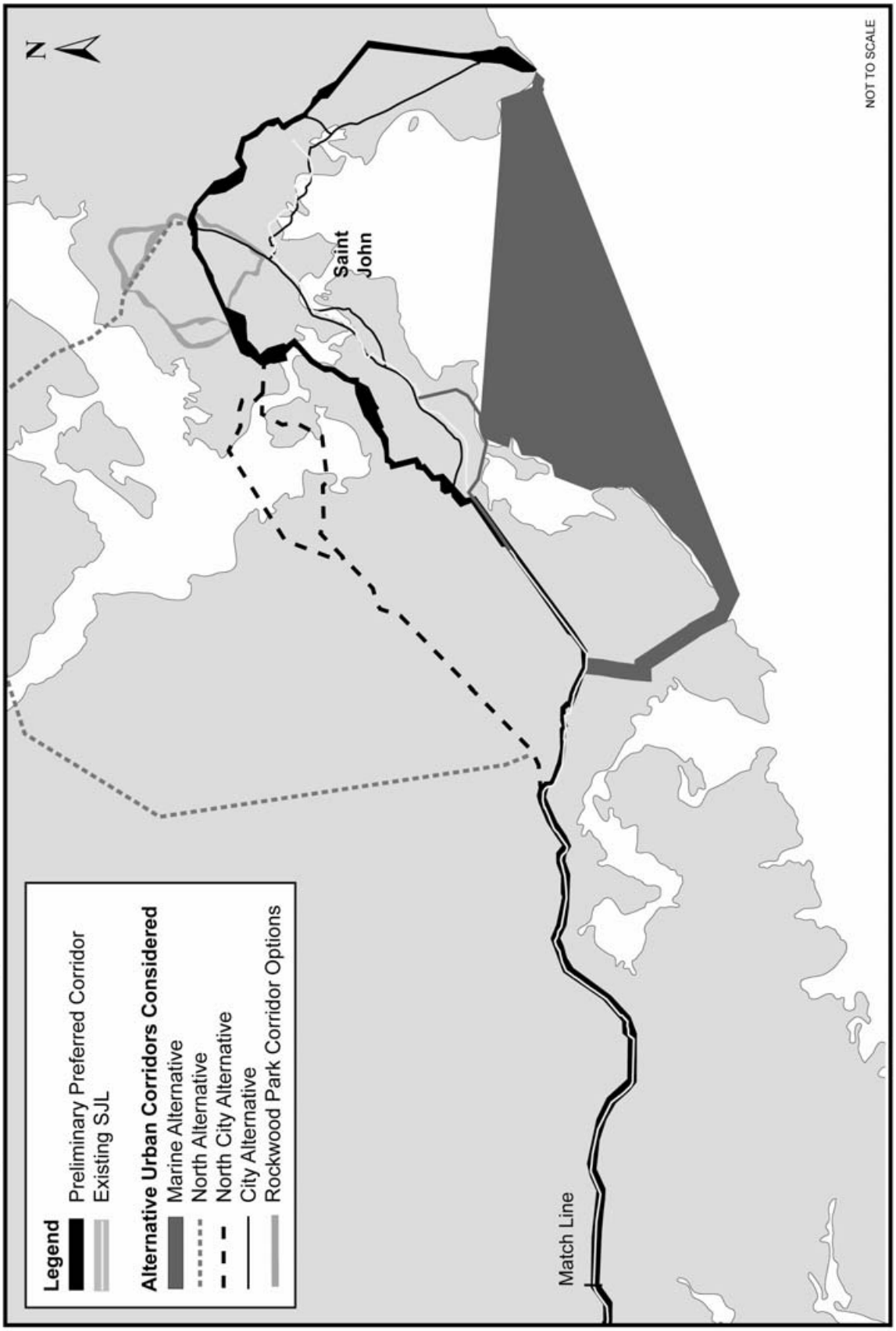
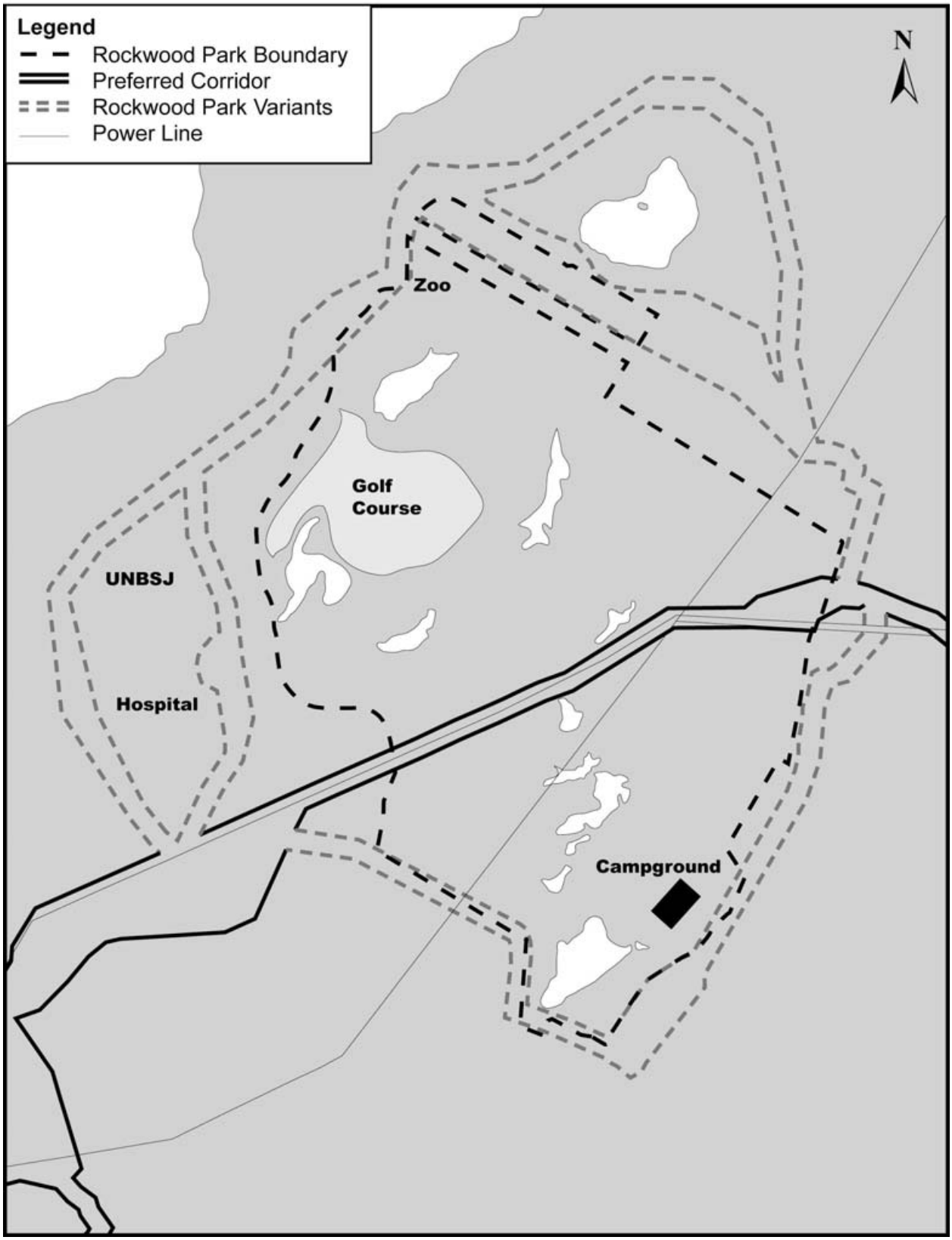


Figure 4
Rockwood Park Variants and Preferred Corridor



2.2 Project Components

The scope of the Project being assessed is in accordance with that outlined in section 2.1 of Appendix 4 – Environmental Assessment Scoping Document.

The Project consists of a natural gas transmission pipeline from the Canaport™ liquefied natural gas (LNG) Terminal (currently under construction) at Mispec Point, near Saint John, NB, to an export point at the Canada-United States (US) border. EBPC submitted that the Project would include a pipeline of approximately 145 km, about 35 km of which would be within the Saint John area, as well as a number of associated facilities, including: six valve sites, a combined meter station and launcher site, and a combined valve and launcher/receiver site. The pipeline itself would be 762 mm (30 inches) in diameter and would operate at a maximum pressure of 9 930 kPa (1,440 psig).

The following description of the Project is based on the evidence submitted by EBPC.

The pipeline, the associated facilities and the required right of way (RoW) would be located within the preferred corridor shown in Figure 1.

During construction, work would be confined to the 30 m-wide RoW with additional temporary work areas required at watercourse and road crossings, and construction staging areas. For the purposes of this Report and the recommendations herein, the term “construction” includes all clearing activities.

RoW clearing would mostly be conducted during the winter months and the remainder of project construction would be completed during the summer and fall. However, EBPC anticipates that limited construction, other than clearing, would be conducted during the winter months. Where practicable, the Project RoW would parallel and overlap existing RoWs. Marshalling yards, storage areas and access roads to the RoW would also be required on a temporary basis. EBPC anticipates that existing roads could be used for access to the RoW and planned valve sites during the operation and maintenance phase of the Project.

No compressor stations are anticipated for the Project, as sufficient pressure for transporting the natural gas would be provided at the Canaport™ LNG Terminal. The entire pipeline system would be installed subsurface with the exception of valve sites (three in urban Saint John and three in rural areas), a combined meter station and launcher site (immediately outside of the Canaport™ LNG Terminal battery limits), and a combined valve and launcher/receiver site adjacent to line valve 63 on the existing Saint John Lateral (SJL) (off of the West Branch Road, Musquash). Each of the sites would require the installation of a permanent access road.

Valve sites would be fenced areas, approximately 20 m x 20 m, which would be locked and regularly inspected for safety and security. These sites would include:

- sectional valves with manual and remote control capability;
- blowdown capabilities;
- a small building approximately 2.4 m x 3.0 m to house electronic equipment; and
- power and telecommunications supply (e.g., satellite communications dish).

The combined meter station and launcher site would be a fenced and graveled area, approximately 50 m x 50 m, which would be locked and regularly inspected for safety and security. The meter station and launcher site would include:

- station inlet and outlet valving, sectionalizing block and yoke valves with manual and remote operations capability;
- blowdown capabilities;
- check valving;
- internal inspection equipment launching facilities;
- measurement and gas analysis equipment, and associated facilities;
- a measurement building to house the custody transfer meter runs and gas sampling equipment (building size to be determined);
- a small building approximately 3.0 m x 3.4 m to house electronic equipment; and
- power and telecommunications supply (e.g., satellite communications dish).

The combined valve site and launcher/receiver site would be a fenced and graveled area, approximately 30 m x 100 m, which would be locked for safety and security. The site would include:

- sectional valves with manual and remote control capability;
- blowdown capabilities;
- launching and receiving facilities for internal inspection equipment;
- a small building approximately 2.4 m x 3.0 m to house electronic equipment; and
- power and telecommunications supply, where available (e.g., satellite communications dish).

2.3 Primary Project Activities

Table 2.3.1 below summarizes the Project activities for the construction phase (including clearing) of the Brunswick Pipeline Project. EBPC stated that clearing was anticipated to commence in the winter of 2007 with the remaining construction beginning in the summer of 2008. EBPC's expected in-service date is late in 2008.

2.3.1 Summary of Project Construction Activities

Project Phase: Construction	
Activity Category	**Physical Work and/or Activity**
Site Preparation	Project-related activities may include: ▪ clearing; ▪ grubbing; ▪ grading; ▪ duff/topsoil stripping; and ▪ blasting.

Pipe Installation	Project-related activities may include: ▪ trenching (excavation); ▪ boring (road and railroad crossings); ▪ horizontal directional drills (HDD); ▪ blasting; ▪ stringing; ▪ bending; ▪ construction of valve sites; ▪ welding; ▪ non-destructive examination of welds (e.g., x-ray, gamma ray, ultrasonic, magnetic particle); ▪ pipeline installation; ▪ installation of cathodic protection systems; ▪ backfilling and duff/topsoil replacement; ▪ hydrostatic testing and dewatering; ▪ pipeline commissioning; ▪ installation of signage and fencing; and ▪ site restoration.
Watercourse Crossings	Watercourse crossing alternatives include wet crossing, dry crossing, or HDD. Project-related activities may include: ▪ site preparation; ▪ instream trenching (excavation); ▪ temporary watercourse diversion; ▪ HDD; ▪ installation of temporary watercourse crossing structures; and ▪ site restoration.
Temporary Ancillary Structures and Facilities	Temporary ancillary structures and facilities may include: ▪ temporary site access roads; ▪ petroleum storage areas; ▪ marshalling yards; and ▪ storage areas Project-related activities include restoration of these sites.

Table 2.3.2 summarizes the Project activities for the operations and maintenance phase of the Brunswick Pipeline Project. EBPC anticipates the life of the facilities to be a minimum of 25 years.

2.3.2 Summary of Project Operations and Maintenance Activities

Project Phase: Operations and Maintenance	
Activity Category	**Physical Work and/or Activity**
Project Presence	Includes all project-related aspects that would be present for the life of the Project, including: ▪ presence of the pipeline; ▪ presence of the RoW (including signage); ▪ presence of valve sites, launcher/receiver sites, and meter and regulating stations; and

	▪ cathodic protection infrastructure.
Pipeline Maintenance	Includes all project-related activities that are required to maintain the pipeline, including: ▪ monitoring of pipeline (including internal inspection); and ▪ maintenance of valve sites, and meter and regulating stations.
RoW Maintenance	Includes all project-related activities that are required to maintain the RoW, including: ▪ maintenance of vegetation; and ▪ installation of post-construction pipeline crossings.

Table 2.3.3 summarizes the Project activities for the decommissioning and abandonment phase of the Project.

2.3.3 Summary of Project Decommissioning and Abandonment Activities

Project Phase: Decommissioning and Abandonment	
Decommissioning	EBPC anticipated that the pipeline would be left in the ground, disconnected from any operating facilities, filled with an inert medium and sealed. Cathodic protection and land use monitoring would continue.
Abandonment	EBPC stated that, at the time of abandonment, applicable standards of the day would be followed. Any environmental effects associated with the abandonment phase are likely to be similar to those caused by the construction phase. Pursuant to the NEB Act, an application would be required to abandon the facility, at which time the environmental effects would be assessed by the NEB and other relevant agencies.

3.0 ENVIRONMENTAL ASSESSMENT PROCESS

3.1 How the NEB Considers Certain Factors under the CEA Act

During the hearing and in final argument, a number of parties discussed certain factors contained within section 16 of the CEA Act, which sets out the factors which an RA must consider under various types of EA, such as the one conducted for this Project. The factors most discussed in this hearing included those contained in paragraph 16(1)(e) "the need for the project and alternatives to the project"; paragraph 16(2)(a) "the purpose of the project"; and paragraph 16(2)(b) "alternative means that are technically and economically feasible and the environmental effects of any such alternative means."

"Cumulative environmental effects", contained under paragraph 16(1)(a) of the CEA Act, was another area of considerable discussion. The Board issued a number of rulings and directions with respect to its consideration of "cumulative environmental effects"; the key ones are attached as Appendices 8 and 9 of this Report. The Board's consideration of cumulative environmental effects of this Project is contained in section 7.3 of this Report.

In October 1998, the CEA Agency published an Operational Policy Statement (OPS) entitled *Addressing "Need for", "Purpose of", "Alternatives to" and "Alternative means" under the*

Canadian Environmental Assessment Act[3]. The purpose of the OPS is to provide clarification and guidance to RAs on how these factors should be considered in EAs conducted under the CEA Act. While not binding, the OPS provides some guidance to the Board in determining how certain factors may be addressed.

The Board is of the view that it may help parties to explain how these factors are considered by the Board as an RA under the CEA Act. Such an explanation is provided in sections 3.2 and 3.3 below.

The Board notes that there is some overlap between certain of these factors and the issues the Board typically considers pursuant to its mandate under the NEB Act; for example, the need for the project and the purpose of the project are often considered in Reasons for Decision on facilities applications. However, the level of detail required in considering these factors may vary both with the mandate under which the Board is considering them and the circumstances of the application before the Board. Where there are issues that may be relevant to both mandates, the Board will address those issues in this EA, in the context of the CEA Act, and in its subsequent Reasons for Decision, in the context of the NEB Act.

3.2 "Purpose of", "Need for" and "Alternatives to" the Project

3.2.1 Background

The OPS provides the following definitions for "need for" and "purpose of":

> "Need for" the project is defined as the problem or opportunity the project is intending to solve or satisfy. That is, "need for" establishes the fundamental rationale for the project.
>
> "Purpose of" the project is defined as what is to be achieved by carrying out the project.

The OPS suggests that "need for" and "purpose of" should be established from the perspective of the project proponent, and provide the context for the consideration of alternatives to the project. For private sector projects, proponents should provide a clear statement of the need for the project. Such a statement will establish the scope of the alternatives to be subsequently considered, that is, those within the control or interest of the proponent.[4]

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3 OPS-EPO/2-1998

4 In many of the Board's prior major pipeline hearings in which an EA was conducted under the CEA Act, the purpose of and need for the project generally were established from the perspective of the project proponent. See for example, *Report of the Joint Review Panel* OH-1-95, Express Pipeline Project, May 1996 (Express), at 11; *The Joint Public Panel Review Report*, Sable Gas Projects, October 1997 (Sable), at 16, 62-64; *Comprehensive Study Report* GH-3-97, Alliance Pipeline Project, September 1998 (Alliance), at p.8.; and the *Joint Review Panel Report*, GSX Canada Pipeline Project, July 2003 (GSX) at p. 193 – 205. Although the Board is not bound by its past decisions, these decisions may provide some assistance to parties in determining how the Board has consistently addressed these factors in the past.

The OPS defines "alternatives to" the project as functionally different ways to meet the project need and achieve the project purpose. The OPS recommends the following approach for addressing "alternatives to":

- "alternatives to" should be established in relation to the project need and purpose and from the perspective of the proponent; and
- analysis of "alternatives to" should serve to validate that the preferred alternative is a reasonable approach to meeting need and purpose and is consistent with the aims of the CEA Act.

In addition, the OPS states that the RA should:

- identify the alternatives to the project;
- develop criteria to identify the major environmental, economic and technical costs and benefits; and
- identify the preferred alternative to the project based on the relative consideration of the environmental, economic and technical benefits and costs.

This EA Report reflects this analysis in sections 3.2.2 through 3.2.4 below. Consideration of alternative means, including alternative pipeline corridors such as a marine crossing, is addressed in section 3.3.

Finally, the OPS indicates that analysis of "alternatives to" the project should describe the process the proponent used to determine that the project is viable (technically, economically and/or environmentally), and that the level of assessment should reflect the more conceptual nature of the "alternatives to" at this stage of the process.

3.2.2 EBPC's evidence on Purpose of, Need for and Alternatives to the Project

According to EBPC, the primary purpose of and need for the Project is to provide the necessary new infrastructure to transport natural gas from the Canaport^{TM} LNG Terminal, currently being constructed near Saint John, to markets in Maritimes Canada and the Northeastern US. EBPC submitted that the gas would be owned, supplied and shipped on the Brunswick Pipeline by Repsol Energy Canada Ltd. (Repsol), which is an indirect subsidiary of Repsol YPF, S.A, from whose supply portfolio the LNG would be sourced.

EBPC indicated in its environmental and socio-economic assessment (ESEA) that Repsol YPF, S.A. is one of the ten major private oil companies in the world with its oil and gas reserves located mostly in Latin America and North Africa. The proposed pipeline would enable the Repsol group of companies to market new gas supplies from the Canaport^{TM} LNG Terminal, commencing as early as November 2008. Specifically, the Project was designed to enable Repsol to transport up to 750,000 million British thermal units per day (MMBtu/d) of natural gas to various markets.

EBPC submitted that M&NP, as the predecessor proponent of the Project, considered a number of alternatives to the Brunswick Pipeline, and that none of the alternatives were found to satisfy the objectives of the Project in an environmentally-responsible and cost-efficient manner. EBPC concluded that here are no economically and technically feasible alternatives to using a pipeline

to reliably transport large quantities of natural gas over the distance involved in the Project. While it is possible to transport LNG supply by ship, truck or train, such options did not compare to the cross-border pipeline option in terms of economic feasibility and environmental appropriateness.

EBPC further stated that the existing SJL would not be a technically or economically viable option for meeting the Project's objectives due to the anticipated volumes of natural gas to be shipped, the insufficient size and pressure of the existing SJL, and the impact of an outage on M&NP's customers related to replacing the existing SJL with a larger pipeline.

EBPC indicated that its customer, Repsol, has consistently sought service on a stand-alone, separately-tolled, NEB-regulated international pipeline, connecting the Canaport™ LNG Terminal to the M&NP US system at the Canada-US border. It argued that in addition to the reasons outlined above, Repsol would not be willing to pursue any other transportation proposal.

EBPC also argued that the suggested alternatives to the Project submitted by other parties would not meet the purpose of or need for the Project, which was for a stand-alone pipeline to transport 750,000 MMbtu/d of gas from the Canaport™ LNG Terminal at Mispec Point to the US border to interconnect with the M&NP US system.

3.2.3 Views of the Parties

Bear Head LNG Corporation, Anadarko Canada LNG Marketing, Corp. and Anadarko LNG Marketing, LLC (collectively "Anadarko") argued that the NEB must consider and provide its own views on the issues of both need and alternatives to the Project. Further, when the evaluation of alternatives is entirely based on the tolls of the proposed Project relative to tolls on an existing pipeline system, and when these tolls are the responsibility of the NEB (i.e., tolls are not set in the market place), the Board can not defer to Repsol's and EBPC's assessment of need and the desirability of alternatives.

Anadarko also argued that no one disputed that the expansion of the existing M&NP System was capable of connecting the Canaport™ LNG Terminal to markets in Maritimes Canada and the Northeastern US. As far as markets in Maritimes Canada are concerned, the M&NP alternative would have provided a superior direct connection relative to the Brunswick Pipeline Project. According to Anadarko, there is, however, no evidence on the record to suggest or in any way prove that expansion of the M&NP System would not have been safe and economically feasible for Repsol or anyone else or from which the Board could conclude that the use of the existing M&NP System is not safe or economically feasible.

Anadarko submitted evidence by Mr. Peter Milne supporting the expansion of the existing M&NP system in Canada to meet the purpose and need for the Project. Anadarko indicated that this evidence would allow the Board to "compare the relative environment, economic and technical benefits and costs" of the Brunswick Pipeline Project relative to the use of the existing M&NP System, and shows that expansion of the M&NP System is vastly superior from a public interest perspective.

The Friends of Rockwood Park (FORP) argued that the depth to which EBPC considered the possible use of the existing SJL corridor and infrastructure was inadequate, and that EBPC

clearly had not considered hooking into the existing M&NP main line from Nova Scotia to the US border.

Dr. Leland Thomas and Ms. Janice Eldridge-Thomas (the Eldridge-Thomases) suggested one alternative to the Project could have been the construction of a line along existing RoW, to join up with the existing 30 inch M&NP infrastructure at an appropriate location near Sussex, NB, with the addition of compressors if required. Another alternative to the Project is to site a regassification facility (plant or ship) near the anchor market.

Views of the Board

In the Board's view, generally, "alternatives to" a project, in the context in which it arises in the CEA Act, may incorporate any feasible different methods for the transportation of gas; not undertaking the project at all; and any feasible different project that would achieve the objectives of the proposed project, including possible pipeline expansions or looping by other proponents.[5] Proposed alternatives that do not meet both the purpose of and need for the project, as defined by the proponent, may not be considered by the Board to constitute "alternatives to" the project under the CEA Act.[6] For projects under review which do not pose significant adverse environmental impacts, the Board may not be required to go further to make specific findings of fact or to conduct a comparative EA with respect to the alternatives to the projects under review.[7]

It is worth noting that, unlike the requirement to consider the environmental effects of alternative means, there is no legislated requirement to consider the *environmental effects* of alternatives to the project. Nor is there a legislated requirement as to the amount or adequacy of evidence to be adduced with respect to alternatives to the project. In the Board's view, the requirement to consider alternatives to a project, when included as part of the scope of factors to be considered when conducting an EA, as is the case here, does not elevate alternatives to the same position as the project under review, or necessarily require the same quantity or detail of evidence as is required for the project under review. The focus of the mandate always remains upon the project described in the formal description contained within the scoping documents. The sufficiency of the evidence with respect to the alternatives to the project considered by the Board is a matter that falls within the

5 This is consistent with the Board's prior decisions, for example, see Sable, *supra* note 4 at 87 ff., and Alliance, *supra* note 4, at 17, as supported by subsequent case law, see *Sharp*, *infra* note 7.

6 This is consistent with the Board's prior decisions, see for example, GSX, *supra* note 4, at 15

7 See *Sharp* v. *Canada (Transportation Agency)*, [1999] F.C.J. No. 948 (FCA), in which the Court found that it was within the discretion of the Agency to decide the nature and extent of its consideration of need and alternatives taking into consideration the environmental acceptability of the proposed project. The Court also said that business or commercial needs are a legitimate basis for rejecting alternatives.

judgement of the Board, and may vary with respect to the application before it.

As noted during the oral portion of this hearing[8], consideration of alternatives to the Brunswick Project raised in the context of the CEA Act should not be used to delve into a detailed economic analysis of the benefits and burdens of that alternative. For example, consideration of alternatives to the Brunswick Pipeline Project under the CEA Act does not require an analysis of what the tolls might be on a potential alternative to the Project in comparison to the tolls on the Brunswick Pipeline[9] nor an analysis of the "long-term effects of avoiding the toll on the Maritimes and Northeast Pipelines system."[10] That level of detailed analysis would greatly expand the scope of the CEA Act EA analysis without adding sufficient probative value to the decision the Board has to make on the environmental effects of the Brunswick Project, and is not required for this EA Report.

In applying the relevant case law[11] and the OPS, the Board finds that both the need for this Project and the purpose of this Project are to be considered in order to provide a basis for the consideration of alternatives to the Project in this EA Report. The Board also notes that gathering information on the need for the Project may also be of assistance if a decision must ultimately be made under the CEA Act whether, despite significant environmental effects, the Project is otherwise justified.

Furthermore, the quantity and detail of the evidence required to allow the Board, as an RA, to carry out its consideration of these factors, and the degree of scrutiny to undertake this task, will vary with the seriousness of the environmental effects of the proposed project. It is within the Board's discretion to determine the adequacy of the evidence provided for both these factors based on the circumstances of the application being considered.

In this hearing, the proponent is EBPC. Accordingly, the need for and the purpose of the Project, for the purpose of the CEA Act EA, are to be established from the perspective of EBPC.

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8 National Energy Board GH-1-2006, Emera Brunswick Pipeline Company Ltd., Transcripts, 17 November 2006, Vol. 11, para. 17126 – 17136; attached as Appendix 5 to this Report.

9 It appears that Anadarko is essentially arguing that the Board is required to consider an expansion of the existing Maritimes and Northeast pipeline and the relative economic costs and toll implications of such an expansion as part of the Board's consideration of *alternatives to* the Brunswick Pipeline project. (Anadarko Final Argument, 15 December 2006, pp. 4-13).

10 Friends of Rockwood Park Final Argument, 15 December 2006, Part 1, p. 4.

11 For example, *Sharp, supra* note 7

The Board accepts that the need for and the purpose of the Project, from the perspective of EBPC, has been sufficiently defined by EBPC, that is, to provide the necessary new infrastructure to transport natural gas from the Canaport™ LNG Terminal to markets in Maritimes Canada and the Northeastern US. The evidence further indicates that EBPC's customer, Repsol, is seeking a stand-alone pipeline from the Canaport™ LNG Terminal to the interconnect with the M&NP US system. The Board does not find it appropriate in conducting its EA of the Project under the CEA Act, and on the basis of the record and the facts of this case, to redefine the purpose of or need for the Project from that set out by EBPC. The purpose of and need for the Project are not so narrowly defined as to preclude the reasonable assessment of alternatives to the Project, nor is the rationale or the goal to be achieved by the Project unclear.

As previously mentioned, under the Board's mandate under the NEB Act, the purpose of and need for the Project will receive further consideration in determining whether the Project is in the present and future public convenience and necessity.

Accordingly, the alternatives to the Project to be considered in this EA prepared in accordance with the CEA Act are to be informed by the purpose of and need for the Project.

During the oral portion of the hearing, the Board provided a ruling related to alternatives to the Project. This ruling is attached as Appendix 5 (Questioning about Alternatives to the Project). All rulings are available on the Board's website. Given the context for its consideration of this and other factors under the CEA Act, contained above, the Board concludes that it has sufficient information about the alternatives to the Project and EBPC's analysis of those alternatives for the purpose of this EA under the CEA Act.

The Board finds that the alternatives of transporting gas by ship, truck, or train are not as reliable, environmentally-safe or secure as transporting gas through an underground pipeline. It was clear on the evidence before the Board that the existing SJL could not currently transport the amount of gas required to be transmitted by this Project. It is notable as well that the owner of the SJL, M&NP Canada, while participating in this proceeding, did not take the position that using the SJL would be feasible, and, in fact, argued the opposite position in its 6 September 2006 correspondence to the Board, based on the evidence provided by EBPC.

In the Board's view, the alternatives to the Project raised by Anadarko, FORP and the Eldridge-Thomases are not appropriately considered to be "alternatives to" the Project under the CEA Act, because they do not serve the same purpose of and need for the Project, as set out by EBPC. For example, an expansion of the M&NP Canada System would not result in a

> separately-tolled, stand-alone pipeline from the Canaport™ LNG Terminal to the interconnect to the M&NP US System at the Canada-US border. Even if they could be considered "alternatives to" the Project, these options have been rejected for commercial and business reasons by the Proponent and its shipper, and this rationale for rejection under the CEA Act is supported in the jurisprudence.[12]
>
> The Board finds that the alternatives to the Project considered by EBPC that would meet the purpose of and need for the Project from the Proponent's perspective, were reasonably concluded by EBPC to not be technically and economically feasible, and therefore are not viable alternatives to the Project. Furthermore, the information provided during the hearing supports the selection of the Project. Finally, taking into consideration its ultimate conclusion that the Project is not likely to cause significant adverse environmental effects, the Board need not undertake a more detailed assessment of the alternatives to the Project under the CEA Act.
>
> Notwithstanding the Board's finding that the "alternatives to" the Project discussed above are either inappropriate "alternatives to" the Project under the CEA Act, or were reasonably rejected by EBPC, the Board notes that further consideration of the proposals by Anadarko, FORP, and the Eldridge-Thomases may be included as part of the Board's deliberations on whether the Project is in the present and future public convenience and necessity in the Board's reasons for decision under the NEB Act.

3.3 Alternative Means

3.3.1 Background

Pursuant to paragraph 16(1)(d) of the CEA Act, an RA must consider alternative means of carrying out the project.

The OPS defines "alternative means" as the various ways that are technically and economically feasible that the project can be implemented or carried out. This could include for example, alternative locations, routes and methods of development, implementation and mitigation.

The "alternative means" may include different routes for the project to follow between the terminal points selected, or different ways of carrying out the work required to undertake the project that are both "technically and economically feasible." The RA must also consider the environmental effects of the alternative means; however, there are no legislated requirements regarding the quantity or level of detail of information that a proponent must provide and the RA must consider in order to satisfy this factor.

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12 See *Sharp, supra* note 7.

3.3.2 Views of EBPC

Consideration of Alternate Corridors

EBPC noted that, in general, the corridor alternatives identified for evaluation represented the routes from the pipeline origin to its terminal point, avoiding known concentrations of environmental constraints, and following existing RoWs wherever practicable. The preferred corridor includes both an urban and rural component.

Four main urban corridor alternatives were identified and evaluated to determine the preferred corridor from the east side of Saint John, where the Canaport™ LNG Terminal is located, to the west side of Saint John. One of the urban corridor alternatives considered consisted of a marine crossing of the Saint John Harbour. Four corridor sub-alternatives through the City were identified in an attempt to avoid built-up areas and allow the crossing of the Saint John River without undue difficulty.

Three main rural corridor alternatives were identified from the west side of Saint John to the international border near St. Stephen, New Brunswick.

See Figure 2 for the various alternative corridors considered, and Figure 3 more specifically for the urban alternative corridors.

Selection Process

According to EBPC, a multi-disciplined project team, assisted by various consultants, was initially assembled to evaluate corridor alternatives and select a preferred corridor for the Project. Collective experiences of the team included: recent knowledge of NEB-regulated corridor selection processes, including the processes applied in relation to the M&NP Mainline and SJL; environmental permitting; RoW land acquisition; and extensive east coast urban, rural and offshore pipeline construction experience.

Selection Criteria

EBPC submitted that the preferred corridor was selected on the basis of:

- safety;
- constructability;
- minimizing project cost;
- impacts to project schedule; and
- environmental constraints and minimizing disturbance through the use of existing corridors where practicable.

EBPC indicated that it had a team of experts evaluate and compare the corridors, and determine what was the preferred one, taking into account all of those criteria. The corridor selection process involved a balancing of all of the criteria in determining the preferred corridor.

The technical studies used by EBPC to support the evaluation of alternative corridors included:

- a preliminary evaluation of interferences presented by underground infrastructure and related constructability issues (Godfrey 2005);
- a technical feasibility study of potential marine crossing alternatives (PCS 2005); and
- a technical feasibility study of HDDs across major watercourses and water bodies (AK Energy 2005).

In support of its application, EBPC also submitted a quantitative risk analysis of the Project based on EBPC's preferred route (Bercha International Inc., 2005).

Consultation/Rockwood Park Variants

EBPC stated that it or its predecessor, M&NP, held discussions with various stakeholder groups and regulatory agencies to help identify potential corridor alternatives and to obtain feedback on the evaluation criteria for selecting a preferred corridor. Several challenges with the preliminary preferred corridor were identified during the public and stakeholder consultations. Specifically, some members of the public were opposed to a pipeline corridor along an existing power transmission line RoW in Rockwood Park. In response to these concerns, the variants to the preliminary preferred corridor were identified to avoid the Park. The two variants, one north and one south of Rockwood Park, were assessed in the environmental assessment for the Project. Refer to Figure 4 for an illustration of the two variants around Rockwood Park.

EBPC indicated that the proposed corridor through Rockwood Park is preferred because it follows an existing utility corridor through the Park, avoids impacts to residences, does not alter the existing land use and is the shortest option that would result in the least temporary construction impact compared to the two variants. However, EBPC submitted that each of the two variants around Rockwood Park is acceptable based on a preliminary review.

Preferred Corridor Selected

EBPC submitted that only one corridor and its accompanying variants through Saint John were found to be technically and economically feasible. This route, the Pleasant Point sub-alternative and its variants, is EBPC's preferred corridor in the urban portion of the route. The Pleasant Point sub-alternative passes through the City of Saint John and parallels a transmission line through Rockwood Park. Refer to Figure 1 for an illustration of the preferred corridor.

A route known as the International Power Line (IPL) alternative was selected as the best alternative for the rural portion of the route for environmental, technical and economic reasons. The IPL alternative follows the SJL RoW until the planned New Brunswick Power (NB Power) IPL RoW is intersected, then parallels the IPL (to the extent practicable), leaving the IPL RoW just before the St. Croix River, and crossing this river immediately adjacent to the existing M&NP Mainline. The other two rural alternatives were more costly and presented additional technical challenges, such as a potentially high risk HDD watercourse crossing. The additional environmental effects of these two alternatives and a combination of technical risk and/or increased cost resulted in their rejection.

Together, the Pleasant Point sub-alternative (and its variants) and the IPL alternative, including the portion which parallels the SJL, make up EBPC's preferred corridor for the Project.

EBPC noted that the rural section of its preferred corridor generally passes through undeveloped forested lands and, for the most part, abuts existing or proposed pipelines, roadways or power lines. Of the entire 145 km length of the preferred corridor, approximately 95 km follows, and includes within its boundaries, existing or planned RoWs, including power lines, highways and roads.

EBPC indicated that discussions with NB Power and engineering studies are underway to determine if the pipeline can be safely located approximately 13 m from the closest power line conductor. Among other things, consideration is being given to the height of construction equipment and spoil piles, ground clearance below the conductors under different operating and climatic conditions, the effects of inducted voltage on the pipeline, the effects of blasting on the tower structures, and operational requirements of NB Power. The final proposed location of the pipeline would also be based on environmental and topographical considerations. EBPC would strive to maximize the amount of easement overlap.

The delineation of the 30 m-wide pipeline RoW within the preferred corridor would be completed following regulatory approval by the NEB, if approval is granted. This delineation would be based on further site-specific constraint mapping, field investigations, and information received from the public, landowners, other interested parties, and government agencies. Urban corridors defined by EBPC for this Project were typically 100 m in width, except in specific areas where they were widened to permit the future consideration of detailed routing options. Segments of the preferred corridor in rural areas that followed the existing SJL were 200 m wide and segments of the preferred corridor in rural areas that followed the existing IPL were 500 m wide.

Marine Crossing

EBPC submitted that a marine crossing of Saint John Harbour was considered thoroughly but rejected as it would not be practical due to the higher safety, technical, cost, schedule, and environmental risks as compared to the preferred corridor. The key difficulties identified with a corridor that includes a marine crossing of the harbour compared to an on-land route included:

- greater safety risks associated with a marine crossing, including occupational safety risks for divers and other marine construction workers on barges and on other vessels;
- greater construction risks associated with a marine crossing, such as the technical challenge of the bottom-lay portion of the marine crossing and HDD installations at the entry and exit to the water due to the tidal changes;
- the environmental risk and potential impacts of a marine crossing to marine fish habitat and shoreline habitat, including the Saints Rest Marsh area, particularly if HDD installations were not successful;
- the cost estimate for a pipeline constructed in a corridor that included the marine crossing used in EBPC's application was 85% greater than the capital cost for the preferred corridor; and

- very high risk of delays to the Project for completing a marine crossing in winter months.

EBPC submitted that pipeline operation risks and commercial risks were additional issues related to a marine crossing.

Other Alternative Means

In addition to considering various corridors, the Proponent considered the use of nominal pipe size (NPS) 24 inch, NPS 30 inch and NPS 36 inch outside diameter pipe. EBPC submitted that the NPS 24 and NPS 36 options were eliminated after considering the necessary contract flow rate and maximum operating pressure as well as the associated costs.

3.3.3 Views of the Parties

FORP submitted an analysis prepared by Accufacts Inc. on the application as it pertained to two major route options affecting the City of Saint John, NB. The analysis suggested that the application was seriously incomplete in at least two areas:

1. the declaration dismissing the marine route option that would essentially bypass the City of Saint John as "not feasible" was not adequately supported, raising significant questions as to the claimed difficulty, cost, or scheduling impact of this option; and
2. the Bercha quantitative risk assessment was missing critical information to support or justify the risk transects determined for the on-land route through the City of Saint John.

FORP submitted that the application appears to be misrepresenting or over-estimating the difficulties, costs, or risks associated with the harbour crossing, while understating the risks associated with an on-land route through the City. In addition, the Saint John Harbour marine crossing options did not appear to have been thoroughly or properly evaluated or documented as a *bona fide* pipeline route. FORP argued that additional information was warranted to permit an informed and proper decision concerning a prudent Brunswick Pipeline route selection.

FORP opposed EBPC's plan to construct the Project through Rockwood Park and the City of Saint John, and instead advocated a marine route across the outer harbour of Saint John, a safe route away from the City and its population. FORP submitted an affidavit indicating that FORP collected signed petitions with approximately 15,269 signatures requesting that the NEB only permit an undersea route for any approved natural gas pipeline.

FORP and other Intervenors argued that EBPC failed to properly evaluate the alternative means to carry out the Project and failed to carry out its obligations under Section 16 of the CEA Act.

Mr. Horst Sauerteig submitted that a submarine pipeline circumventing the City is safer for its residents and for the environment, and could be constructed safely by an experienced marine contractor at a cost comparable with EBPC's estimate of a pipeline through the City of Saint John. Mr. Sauerteig proposed a marine pipeline route alternative to the marine crossing considered by EBPC. He disputed the estimated cost of the marine crossing put forward by EBPC, and estimated a much lower cost for EBPC's marine crossing than did EBPC. Mr. Sauerteig submitted that EBPC's preferred corridor through the City of Saint John is not in the best interest of its citizens, and that many of the burdens of EBPC's preferred corridor to the

citizens can be eliminated by adopting his proposed marine pipeline alternative. Mr. Sauerteig argued that EBPC failed to investigate in a professional manner all "alternative means of carrying out the project."

EC submitted that planning for the Project should consider the potential for Project activities to result in the disposal of materials into the marine environment and the associated need for a Disposal at Sea (DAS) permit under CEPA 1999. The three scenarios described in EBPC's ESEA that may include activities subject to the DAS provisions of CEPA 1999 include a pipeline crossing of Saint John Harbour, open cuts of the Saint John River, and disposal of sulphide-bearing materials at sea. EC recommended that activities that may be pursued on a contingency basis and could require a DAS permit be described and assessed in sufficient detail to support a potential DAS permit application.

Many of the letters of comment received and oral statements made, as well as the evidence submitted by several Intervenors expressed concern over and opposition to a pipeline route through the City of Saint John, and many suggested a strong preference for a marine crossing.

3.3.4 EBPC Response to Intervenors

In response to evidence from Intervenors disputing estimated costs for the marine crossing, EBPC submitted that its revised estimated costs for the marine crossing had increased since its initial estimation. The revised estimated cost for the marine portion reflected order of magnitude increases based on recent quotes received for similar marine projects.

EBPC indicated that the success of the Canaport™ LNG Terminal is very dependent upon the commercial arrangements between Repsol Canada and EBPC, and achieving a timely in-service date in accordance with the current land route construction schedule for completion of the Brunswick Pipeline. A conclusion was reached early on that, considering the likely costs and scheduling delays, a marine crossing would not be feasible. As a result, the detailed engineering and environmental studies with respect to a marine crossing were not undertaken.

EBPC submitted that it did look at the alternative marine route proposed by Mr. Sauerteig. EBPC indicated that the information Mr. Sauerteig provided would not result in a materially different result to EBPC's analysis of a marine route in general. EBPC still preferred its preferred corridor for the Project when compared to Mr. Sauerteig's alternative.

EBPC submitted that the construction and operation of the on-shore pipeline in the preferred corridor described in the application is environmentally-acceptable, economical, safe and efficient as experience across North America has demonstrated over the years. Both EBPC and Repsol have concluded that a marine crossing is not feasible. EBPC indicated that the Brunswick Pipeline will not be built across Saint John Harbour.

In response to claims that EBPC has not adequately considered the alternative means of a marine crossing, EBPC argued that the Board has been provided with an abundance of evidence regarding the feasibility of a marine crossing. EBPC:

- has provided feasibility studies that considered two marine corridors;

- answered extensive interrogatories with respect to the marine alternatives and its feasibility analysis;
- evaluated the Intervenors' evidence on the marine alternatives and made related information requests;
- responded to the Intervenor evidence with respect to the marine crossings with further reply evidence; and,
- made its marine experts available for cross-examination for approximately seven days.

In its response to EC's concerns about the potential for a DAS permit, EBPC indicated that at the time the ESEA was submitted, no disposal at sea of sulphide-bearing rock was being considered for the Project. EBPC also noted that during the construction of the SJL, most sulphide-bearing rock encountered was relatively low in reactivity and a combination of blending into the RoW grade materials and/or adding limestone was sufficient mitigation.

EBPC proposed an HDD to cross the Saint John River as part of the Project, and its ESEA was based on that crossing method. EBPC indicated that it would prepare a contingency plan in the event that the HDD was not feasible.

EBPC further indicated that should it become apparent that a DAS permit may be required for the Project, the appropriate studies and plans would be discussed with EC and undertaken for this activity.

Views of the Board

During the hearing, a number of parties raised concerns with respect to the preferred corridor, and suggested that alternative means, including alternative corridors, were not sufficiently examined by EBPC. The Board provided a ruling related to alternative means to provide some guidance to parties. This ruling is attached as Appendix 6. Additional guidance related to the Board's consideration of alternative means is contained below.

In relation to the Board's consideration of "alternative means", there is no obligation to select the alternative with the least environmental impact. The approach of the CEA Act is to require a finding that the alternative *chosen* not be likely to cause significant adverse environmental effects.[13]

In the Board's view, "alternative means" of carrying out the Project are methods which are technically and economically feasible and include those means that are within the scope and control of EBPC.[14] The consideration of "alternative means" does not involve a consideration of alternative means that would involve different end points for the pipeline,

13 *Inverhuron & District Ratepayers' Assn. v. Canada (Minister of the Environment)* [2001] F.C.J. No. 1008 (FCA) at para. 50; application for leave to appeal to SCC dismissed without reasons [2001] SCCA No. 463.

14 See also Sable, s*upra* note 4, at 87; Alliance, s*upra* note 4, at 31; GSX, *supra* note 4, at 21.

nor does it necessarily require that all possible reasonable alternative means must be examined. Furthermore, in the absence of a legislated requirement as to the quantity or detail of the evidence that must be considered, the extent to which the Applicant has provided information on alternative means, the adequacy of information provided for the Board's consideration and the Board's determination as to whether consideration of this factor under the CEA Act has been fulfilled is a question of judgment.[15]

The Board finds that EBPC provided sufficient evidence regarding its consideration of a marine crossing of the Saint John Harbour, and that this evidence underwent broad questioning by parties to the hearing. EBPC's evidence was supported by credible expert witnesses and EBPC's conclusions with respect to the feasibility of a marine crossing were reasonable, based on the evidence adduced.

Although EBPC was not required to consider or provide information on *all* possible alternative means, the Board finds that, in any event, EBPC sufficiently examined and provided an adequate level of information in response to those alternative means proposed by Intervenors, such as Mr. Sauerteig's proposed alternative marine route, to supplement the information provided on the record by other parties and to allow for sufficient consideration of these alternative means, their technical and economical feasibility, and their environmental effects.

Evidence was also provided with respect to the other on-land corridors considered by EBPC in this proceeding, as described in section 3.3.2 above. These on-land alternative means were also extensively explored by parties in the proceeding. EBPC's conclusion with respect to the selection of an on-land corridor were reasonable, based on the evidence adduced.

Further, EBPC provided evidence that it considered various sizes of pipe and the feasibility of using HDD at several watercourses. The Board notes that this evidence was only briefly questioned, if at all, or argued upon by parties.

The Board concludes that EBPC has provided adequate information on alternative corridors and construction methods that are technically and economically feasible for the Board to consider these alternative means and their environmental effects. In the Board's view, the rationale provided by EBPC for rejecting the alternative means it considered, as well as the Intervenors' proposed alternative means, is reasonably founded in the evidence, and supports, among other things, the selection of the preferred corridor, construction methods and size of pipe.

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15 *Alberta Wilderness Assn. v. Express Pipelines Ltd.*,[1996] F.C.J. No. 1016 (FCA).

Further consideration of the evidence may be required by the Board in order to fulfill its mandate under the NEB Act, and will form part of the content of separate Reasons for Decision.

The Board notes EC's recommendation that activities that may be pursued on a contingency basis and that could require a DAS permit be described and assessed in sufficient detail to support a potential DAS permit application. However, EBPC has indicated that it will not pursue a pipeline crossing of the Saint John Harbour. An open cut of the Saint John River was not considered as part of the environmental assessment for the Project. EBPC has indicated that an open cut of the Saint John River would only be pursued as a contingency, and that it would prepare an environmental assessment of the open cut.

If the Project were to receive regulatory approval, the Board would recommend a condition be imposed to require that EBPC construct the crossing(s) of the Saint John River using the HDD method or, if this is not feasible, apply to the Board for approval of an alternative crossing technique, and include an EA of the proposed alternative with its application. Therefore, the Board has included a recommendation to this effect in section 9.2 as recommendation I.

The Board expects that EBPC would include sufficient detail to support a potential DAS permit application as part of the environmental assessment of the proposed alternative crossing of the Saint John River.

The remainder of this Report focuses on the Project as proposed by EBPC and described in section 2.0 (Project Description).

4.0 DESCRIPTION OF THE ENVIRONMENT

The following descriptions of the environmental and socio-economic settings are based on the evidence submitted by EBPC and focus on the preferred corridor as proposed by EBPC. Any comments provided by interested parties with respect to the environmental and socio-economic elements below are addressed in sections 5.5 and 7.0, and Appendix 1 of this Report.

4.1 Environmental Setting

Physical Environment

- Topography varies from gently undulating/level to hummocky/rolling with more than 90% of the urban and rural corridor having a slope of less than 10%.
- Approximately 64% (22.8 km) of the urban section and approximately 67% (74.5 km) of the rural portion of the preferred corridor crosses through potential sulphide-bearing or acid-generating rock that contain various sulphide minerals.
- Five earthquakes with a magnitude greater than 2.6 on the Richter scale have occurred in the Bay of Fundy in the last 30 years.

- The Bay of Fundy moderates the local air temperature and stabilizes the flow of large air masses. This stability can greatly influence the dispersion of exhaust plumes from sources located on the coast of the Bay of Fundy.

Water Resources

- Two Watershed Protection Areas have been identified within the preferred corridor: Dennis Stream Watershed near St. Stephen and the Spruce Lake Watershed, west of Saint John.
- The boundary of a third Watershed Protection Area, the East and West Musquash Watershed, is within 50 m of the preferred corridor.
- The preferred corridor intersects valleys and hillsides in several locations where springs may occur.
- Records for 19 wells within 500 m of the preferred corridor were available from a provincial database.
- Aerial photography suggests that there may be more than 105 domestic wells within 500 m of the preferred corridor that have not been included in the provincial database.
- A total of 123 watercourses or water bodies are within or adjacent to the preferred corridor.

Fish and Fish Habitat

- Three species of fish considered either Species at Risk pursuant to the *Species at Risk Act* (SARA) or Species of Conservation Concern occur within the assessment area[16]. These include anadromous Atlantic Salmon, listed as "May be at Risk" by New Brunswick Department of Natural Resources (NBDNR), striped bass (*Morone saxatilis*), listed as "May be at Risk" by NBDNR and also "Threatened" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and shortnose sturgeon (*Acipenser brevirostrum*), listed as a "Species of Special Concern" under SARA.
- In NB, the Inner Bay of Fundy Atlantic salmon (*Salmo salar*) is listed as "Endangered" under SARA and the Lake Utopia dwarf smelt (*Osmerus sp.*) is listed as "Threatened" under SARA. Neither of these species is known to exist within watercourses crossed by the preferred corridor.
- Recreational fish species in the preferred corridor, as determined by DFO, include various salmonids, smallmouth bass and American eel and gaspereau (alewife); striped bass are also commonly fished in the Saint John River.
- Brook trout were determined to be the dominant recreational fish species in the preferred corridor.

16 The assessment area for fish and fish habitat included the watercourses that may be crossed by the preferred corridor or Rockwood Park variants and where activities associated with the Project could potentially result in environmental effects on fish, fish habitat, and surface water quality.

Vegetation

- The southern-most areas of the preferred corridor may support tolerant hardwoods such as sugar maple and yellow birch, but are dominated by red maple, white birch, balsam fir and white spruce.
- Where the preferred corridor parallels the NB Power IPL RoW, tolerant hardwoods such as sugar maple and hemlock are able to persist; butternut (a federal Species at Risk) are present but are mostly restricted to the Saint John River valley; the more common quaking aspen are also characteristic in regenerating areas that have been disturbed by deforestation or fire.
- Invasive vascular plants that can be expected within the study area include purple loosestrife, Eurasian watermilfoil, glossy buckthorn and reed canary grass.
- A total of 14 plants of conservation concern were encountered within approximately 50 m of the preferred corridor during field surveys.
- A total of 80 wetlands were identified during the desktop study and field surveys as occurring within the preferred corridor, with a total area estimated to be 800 hectares (ha).
- The preferred corridor intersects with, or is near, three vegetation-based environmentally significant areas and runs through the southern edge of the Loch Alva Protected Area.

Wildlife and Wildlife Habitat

- The eastern NB population of cougar is listed as "Endangered" under the NB *Endangered Species Act* (NB ESA) and the Canada lynx is listed as "Regionally Endangered" under the NB ESA. Both lynx and cougar tend to be wide-ranging and suitable habitat for both species is likely distributed throughout the Project area; however, the preferred corridor is not known to represent important limiting habitat for either species.
- The Gaspé shrew is listed as "Special Concern" on Schedule 3 of SARA; however, based on its restricted range, it is unlikely to inhabit areas in the preferred corridor.
- Other mammal species that have been assessed to be "Sensitive" by NBDNR include the eastern pipistrelle, little brown bat and northern long-eared bat; however, the preferred habitats of these species are avoided by the preferred corridor.
- The long-tailed shrew is considered "May be at Risk" by NBDNR but are unlikely to inhabit areas of the preferred corridor based on their habitat preferences.
- Eight species of birds with the potential to be in the area of the Project are listed on Schedule 1 of SARA, including Piping Plover, Eskimo Curlew and Roseate Tern as "Endangered"; Least Bittern and Peregrine Falcon as "Threatened" and Harlequin Duck, Yellow Rail and the eastern population of Barrow's Goldeneye as "Special Concern"; however, it is not likely that any of these species inhabit the preferred corridor given their known ranges and preferred habitats.
- Bald Eagle is considered "Regionally Endangered" under NB ESA, and while there were no nests along the preferred corridor, there was one Bald Eagle recorded during the field surveys.

- Red-shouldered Hawk, Short-eared Owl and Bicknell's Thrush are listed as "Special Concern" on Schedule 3 of SARA; there is suitable habitat within the vicinity of the preferred corridor for both the Red-shouldered Hawk and Short-eared Owl, and although the preferred breeding habitat for Bicknell's Thrush is not common in this area, there was one recorded during bird surveys.
- Wood turtle is listed as "Special Concern" on Schedule 3 of SARA and were observed at Black Brook and Dennis Stream during surveys in August 2001 for the NB Power IPL.
- Dusky salamander is considered "Sensitive" by NBDNR, a database search of the area within 5 km of the preferred corridor returned three records for dusky salamander.
- Maritime ringlet butterfly is listed as "Endangered" on Schedule 1 of SARA but as they are only known to occur near the City of Bathurst, this species is not likely to occur along the preferred corridor.
- Monarch butterfly is listed as "Special Concern" on Schedule 1 of SARA, a database search of the preferred corridor and the surrounding 5 km returned two records for monarch butterfly.
- In the Project area, the most limiting mammal habitat is wintering areas for white-tailed deer and moose; the preferred corridor traverses nine deer wintering areas.
- An area designated as mature coniferous forest habitat intersects the preferred corridor; total area is approximately 690 ha, of which approximately 290 ha fall within the preferred corridor.
- Five wildlife-based environmentally significant areas have been identified in the vicinity of the preferred corridor and only the Utopia Wildlife Refuge intersects the preferred corridor.

Atmospheric Environment

- Southern NB has a relatively heavy industrial base that includes various commercial and industrial facilities, which contribute to sources of air contaminants.
- Data for conventional air contaminants for selected industrial facilities in southern NB (maintained by NBDOE) show a slightly increasing trend; however, sulphur dioxide emissions appear to be following a downward trend (data is from 1997-2003).
- Annual average values for nitrogen dioxide for all sites monitored in Saint John ranged from 10-30 $\mu g/m^3$, which were well below the ambient annual average standard of 100 $\mu g/m^3$.
- The 1-hour and 24-hour ambient sulphur dioxide standard (450 and 150 $\mu g/m^3$ respectively) were exceeded occasionally during 2003 at several monitoring stations in and around the Saint John area.
- No exceedances of the California/Greater Vancouver Regional District 24-hour standard of 50 $\mu g/m^3$ of particulate matter less than 10 microns were recorded at any of the monitoring sites in the Saint John network for 2002-2003.

- Particulate matter less than 2.5 microns monitored during the period of 2000-2003 is in compliance with the Canada-Wide Standard (30 µg/m^3 as a 24-hour average over 3 years).
- During 2002 and 2003, ground level ozone concentrations (monitored at 4 locations in the Saint John network) did not exceed the 1-hour National Ambient Air Quality Objective (160 µg/m^3 or 80ppb).
- There were a total of 5 hours during 2003 where the Canada-Wide Standard for 8-hour average ground level ozone (130 µg/m^3) was exceeded.
- Peak hourly values of carbon monoxide, for sites monitored from 1996-2003, were below the applicable standard of 35,000 in 2003. There were no exceedances of the 8-hour standard (15 000 µg/m^3 in 2003).

Rockwood Park

- In Rockwood Park, the preferred corridor for the Project follows an existing power transmission line RoW which spans a distance of 2.4 km.
- Within the Park, the A-frame building, horse barns, and interpretive centre depend on wells for water supply.
- Potential for contaminated soils exist within the preferred corridor of Rockwood Park.
- The Project potentially crosses at least six watercourses that may be fish-bearing.
- No known fish Species at Risk exist in watercourses crossed in Rockwood Park.
- Yellow Slipper, a vascular plant Species of Conservation Concern, was found at the edge of the preferred corridor, and would not be affected by the Project.
- There are three wetlands identified in the Park.
- There are a number of caves in Rockwood Park; however, these are avoided by the preferred corridor. Caves within the Park would not be affected by activities related to the Project.
- White-tailed deer are known to make use of corridors and trails such as power line RoWs (e.g., in Rockwood Park), pipeline RoWs (e.g., SJL) and abandoned railroad tracks. Deer are relatively abundant in southern NB and are generally not limited by habitat.
- No deer wintering areas were identified in Rockwood Park.
- No wildlife Species of Conservation Concern or habitat for such species has been noted within the proposed corridor for the Park.

4.2 Socio-Economic Setting

Aboriginal Interests

- There are 15 First Nation communities in the NB[17]. These communities are made up of two separate, although closely related, Nations: the Maliseet and the Mi'kmaq.
- The Project falls within the traditional territory of the Maliseet, with the closest community, Oromocto First Nation, approximately 65 km away from the preferred corridor. All of the Mi'kmaq communities are located over 100 km from the assessment area, with the furthest being located approximately 300 km away.
- As the Project would parallel, to the extent practicable, the existing NB Power IPL and SJL RoWs, the Traditional Ecological Knowledge (TEK) information gathered for those projects was used for EBPC's ESEA in addition to information gathered through open houses held at each of the 15 Aboriginal communities.
- Concerns raised in past studies for the SJL included disturbance to: traditional hunting, fishing and gathering areas; burial and/or ceremonial sites; and unidentified archaeological sites.
- Current consultation efforts identified similar issues, including a general concern for Aboriginal sacred lands and for historical Aboriginal settlements, although no specific areas have been identified.

Land and Resource Use

- The Project would pass through one incorporated municipality, the City of Saint John. Outside of Saint John, the pipeline extends from Lorneville to the international border at the St. Croix River near St. Stephen.
- The preferred corridor is set in both an urban and rural environment and passes through or near existing/proposed residential subdivisions, Rockwood Park in the north end of Saint John, the environmentally significant areas of Musquash Harbour, Saints Rest Marsh, and the extreme southern portion of the protected Spruce Lake Watershed.

Urban Setting

- Saint John Census Metropolitan Area is NB's largest urban centre, with a population of approximately 140,000.
- Part of the Project is located within the urban setting of Saint John (approximately 35 km), including areas with substantial underground infrastructure, complex road networks, heavy industry and residences.
- Several large industries are located near the preferred corridor, including a port, an oil refinery, a pulp and paper plant, transportation infrastructure (e.g., roads and railways),

17 The six Maliseet First Nation communities in New Brunswick are Madawaska, Tobique, Woodstock, Kingsclear, St. Mary's and Oromocto. The nine Mi'kmaq communities in New Brunswick are Eel River Bar, Pabineau, Burnt Church, Metepenagiag, Eel Ground, Big Cove, Indian Island, Buctouche, and Fort Folly.

and numerous small businesses and other commercial properties that support the industry base.

- The urban portion of the preferred corridor parallels existing utility RoWs, to the extent practicable, while generally avoiding most of the recreational areas and attractions located in Rockwood Park.
- Rockwood Park is a popular destination for Saint John residents and visitors. In various seasons, Rockwood Park offers the following attractions: Kiwanis Playpark at Fisher Lakes; Rockwood Park Municipal Golf Course & Aquatic Driving Range; Rockwood Park Campground; Cherry Brook Zoo & Vanished Kingdom Park; beaches at Fisher Lakes and Lily Lake; hiking, biking, cross-country skiing, and running trails; picnic sites at Fisher Lakes and throughout the wilderness zone of the Park; Rockwood Stables & Turn of the Century Trolleys; and horseback riding.
- Approximately one third of the urban portion of the preferred corridor is located within close proximity of residential homes. These areas include Champlain Heights, Lancaster, Spar Cove Road, Milford, and Millidgeville. New subdivisions are currently being developed or are planned within the urban portion of the preferred corridor.

Rural Setting

- The remainder of the Project is within the rural setting of southwestern NB (approximately 110 km); the preferred corridor travels through both forested and agricultural areas, and intersects the protected Dennis Stream Watershed, Route 1 and a number of secondary highways.
- The rural portion of the preferred corridor is located adjacent to existing RoWs, to the extent practicable, in an effort to minimize land use conflicts for the Project.
- Primarily crossing through woodland, the preferred corridor does pass through intermittent residential and industrial land use and cross various roads and utility RoWs.
- Numerous trails used by all-terrain vehicle (ATV) operators and seasonal hunters occur in the rural portion of the preferred route, although no properties are specifically set aside for recreational purposes.
- Agricultural lands occur within the preferred corridor, including two blueberry farms in addition to the more traditional farms of hay and grains.

Infrastructure and Services

- The preferred corridor interacts with numerous water mains, as well as sanitary and storm sewers within Saint John.
- The preferred corridor intersects with the CN Rail line in two different locations.
- Three hospitals and other health and long-term/chronic care facilities (e.g., the Worker's Compensation Rehabilitation Centre) are located in Saint John. The largest of these units, the Saint John Regional Hospital, is a 700-bed acute care teaching hospital, and is accessed via either University Avenue or Sandy Point Road. It is NB's largest regional hospital and one of the largest in eastern Canada.

- Within the urban region of the preferred corridor, there are 33 establishments that provide overnight accommodation, 27 of which provide year-round lodging. Within the vicinity of the rural section of the preferred corridor, there are 54 places identified that provide overnight accommodation, 31 of which provide year-round lodging.

- Archaeological and Heritage Resources
- The preferred corridor was preliminarily divided into areas of low archaeological potential and moderate to high archaeological potential. Areas of moderate to high archaeological potential may include both pre-contact and historic period resources.
- Sites of high archaeological potential were identified, including along the shoreline of the Saint John River, on the Musquash River, at St. David Ridge, on the west side of Magaguadavic River and at most of the other watercourses crossed by the preferred corridor.
- Based on the history of the area, and the level of disturbance and studies from past projects, the archaeological potential for most of the preferred corridor was considered by EBPC to be low to moderate.

5.0 PUBLIC PARTICIPATION

5.1 Public Participation under the CEA Act

Public participation is a central element of the CEA Act. The importance and function of public participation is cited in both the preamble and purpose of the CEA Act:

> ...Whereas the Government of Canada is committed to facilitating public participation in the environmental assessment of projects to be carried out by or with the approval or assistance of the Government of Canada and providing access to the information on which those environmental assessments are based;...

and

> The purposes of this Act are...
>
> (d) to ensure that there be opportunities for timely and meaningful public participation throughout the environmental assessment process.

The intent of the CEA Act clearly supports the principle of early and meaningful public participation. The requirements of the CEA Act regarding public participation for panel reviews, for which the NEB public hearing process is a substitute for this Project, are as follows:

- every assessment by a review panel of a project shall include a consideration of... comments from the public... (paragraph 16(1)c of the CEA Act)
- a review panel shall: ensure that the information required for an assessment by a review panel is obtained and made available to the public (subsection 34(a) of the CEA Act); hold hearings in a manner that offers the public an opportunity to participate in the assessment (subsection 34(b) of the CEA Act); prepare a report setting out… a summary of any comments received from the public… (paragraph 34(c)ii of the CEA Act)

- a hearing by a review panel shall be public unless… (subsection 35(3) of the CEA Act)
- regarding public notice... the Minister shall make the report available to the public in any manner the Minister considers appropriate to facilitate public access to the report, and shall advise the public that the report is available (section 36 of the CEA Act).

5.2 Key Elements of Meaningful Public Participation

The public should be afforded an opportunity to provide their views to decision-makers, by participating in a meaningful public process, before decisions are made that affect their lives. For a public participation process to be meaningful, the CEA Agency recommends that it should exhibit all of the following elements:

- **Early notification** - Where notification is to be given, it needs to be done early enough to allow the public to have the opportunity to influence the planning of a project and its EA process before any irrevocable decisions are made.
- **Accessible information** - The RA should ensure that all participants are provided with the information they need to participate effectively on a timely basis. Consideration should be given to the appropriate language for this information and the need to use culturally-sensitive means of communication. Access to information should only be limited in accordance with the laws relating to access to information and privacy.
- **Shared knowledge** - A project should be developed on the basis of both technical and scientific knowledge, and community and Aboriginal traditional knowledge. Knowledge, concerns, values and viewpoints should be shared in an open, respectful and timely manner. This includes information on the potential consequences of a project. Any rights flowing from the ownership of information that participants may have need to be respected.
- **Sensitivity to community values** - Public participation processes need to be carried out in a manner that respects different community values and needs.
- **Reasonable timing** - A public participation process should provide the public with a fair and reasonable amount of time to evaluate the information presented and to respond to project proposals and to proposed decisions by proponents and RAs.
- **Appropriate levels of participation** - A public participation process should provide for levels of participation that are commensurate with the level of public interest.
- **Adaptive processes** - Public participation processes should be designed, implemented and revised as necessary to match the needs and circumstances of the project and to reflect the needs and expressed preferences of participants. This process may be iterative and dynamic in keeping with the reasonable expectations of participants.
- **Transparent results** - Public participation is based on the premise that the public's contribution will be considered in the decision-making process. A public participation process should, at its conclusion, provide information and a rationale on whether or how the public input affected the decision.

5.3 Engagement Activities by EBPC

EBPC submitted that it conducted an extensive consultation program, commencing in mid-2005. EBPC stated that its consultation efforts would not stop with the selection of the corridor or filing of the application, but that it would continue through the development of the detailed route within the preferred corridor, and the operations phase of the Project. The goals of the ESEA (including corridor selection) consultation program for the Project, as stated by EBPC, were to:

- identify stakeholders who have interests in the Project area and who could potentially be affected by the Project as soon as practicable in the planning phase of the Project;
- inform potential stakeholders throughout the various phases of the Project by sharing information on key project specifics in a clear and timely manner;
- create opportunities for meaningful input and advise stakeholders of their opportunities to communicate with EBPC or regulatory agencies if they so desire;
- understand and respond to any issues or concerns in an effort to ensure those issues or concerns are resolved or mitigated to the extent practicable; and
- identify communications with stakeholders leading up to the construction phase with a view to developing the long-term relationships required during project construction, and operation and maintenance.

Regulatory Consultation

EBPC indicated that a number of federal and provincial regulatory agency experts were contacted during the initial project scoping and corridor selection process to contribute expert advice, identify major constraints and important factors to be considered, or to express concerns regarding the Project with respect to their specific mandates. The corridor alternatives, constraints, and evaluation criteria were reviewed with local regulators, including DFO, EC, and NBDOE. Initial process discussions on the Project were also initiated with the NEB, the CEA Agency, and the NB Department of Energy. EBPC submitted that these consultations will continue throughout the regulatory approval process for the Project.

Public Consultation

According to EBPC, consultation with the public is required to fulfill EBPC's vision for consultation and to obtain regulatory approval for the Project. In the context of this Project, public consultation was directed at providing information to, and obtaining feedback from, interested parties, members of the public and potentially affected landowners on the selection of a preferred corridor and corridor alternatives. A variety of techniques were used to provide information to the public and to elicit feedback about the Project, including:

- open houses;
- questionnaires;
- newspaper advertisements;
- radio spots;
- a 1-800 phone number;

- an e-mail address;
- a Project website;
- newsletters, including a corridor map delivered to every mailing address in Saint John and the communities along the proposed corridor;
- site visits; and
- one-on-one and group meetings.

The geographic region included in the public consultation program covered the area between the Canaport™ LNG Terminal on Mispec Point in Saint John, NB to the international border near St. Stephen, NB. Communities within 10 km of the preliminary preferred corridor were solicited to participate in the open houses and public consultation program for the Project. EBPC stated that it attempted to ensure that all those located within the corridor were contacted directly, while those located beyond the corridor would receive general public notification, including open houses, mailings and other commonly-used means of notification. EBPC submitted that stakeholder groups with an interest in the Project were identified, and potentially affected landowners in the area were provided with information on the Project and encouraged to participate in the open houses.

Three open houses were held for the Project in late September 2005 in three NB communities along the preliminary preferred corridor. A fourth open house was held in Saint John in early December 2005 in response to requests for an additional consultation opportunity to focus on the urban section of the corridor, particularly Rockwood Park, and to provide the public with any new information on the preliminary preferred corridor obtained since the previous open houses. During the summer of 2006, three community meetings and walk-arounds were held (Milford, Millidgeville and Champlain Heights) at the request of the general public and their elected leaders.

Stakeholder Consultation

EBPC submitted that numerous meetings were held with key stakeholders (e.g., community groups, commercial landowners with large tracts of property that may be affected, or parties with an interest in lands that would be intersected by the pipeline corridor). These meetings are and would be continuing throughout the design and construction phases of the Project. The objective of these consultations was to provide a brief presentation on project activities and to solicit comments and concerns.

Aboriginal Consultation

According to EBPC, in order to meet the goals for Aboriginal consultation, an Aboriginal consultation plan and TEK study have been prepared and initiated for the Project. An Aboriginal consulting firm, Aboriginal Resources Consultants, was retained to facilitate the consultation process and the TEK plan. EBPC stated that the objectives of these efforts were:

- to respond to questions and concerns with regard to potential environmental effects to Aboriginal interests resulting from project activities;

- to inform the Aboriginal communities that the EA is one way to participate in the project approval process; and
- to gather information on the nature and extent of potential environmental effects on current land and resource use for traditional purposes.

The Aboriginal consultation plan was implemented to gather environmental and socio-economic information for use in the ESEA. The TEK study is ongoing and the information being gathered through this process will be used to enhance the detailed route process. As part of the Aboriginal consultation plan, open houses and direct consultation were identified as the primary forms of communication with First Nation communities and organizations. Through direct contact with the Chiefs, all 15 communities were given information about the Project and permission was requested to hold an open house in each of their communities. Of these, 13 agreed to allow the open houses. One community, Fort Folly, declined a session in their community (citing that any information would come from their Tribal council, the Union of New Brunswick Indians (UNBI)[18]) and another, Buctouche, requested only a presentation to its council.

The report on the Aboriginal consulting process submitted by EBPC contained a number of recommendations based on the outcomes from direct consultation with the community Chiefs, participants at the open houses, and the two representative organizations (MAWIW Council[19] and UNBI). These are reproduced below (Aboriginal Resource Consultants, 2006):

- Provide copies of the consultation process report to each of the 15 NB First Nation communities.
- Provide to each of the NB First Nations a copy of the final ESEA, as well as the finalized ESEA map sets at the earliest opportunity.
- Develop specific detailed protocols, in concert with the organizational liaisons, addressing processes for the dissemination of information on employment and contracting opportunities, as well as a reporting process to measure results, and share them with the First Nation leadership of the 15 NB First Nation communities.
- Develop a detailed informational package on the Proponent's safety procedures and distribute to each of the NB First Nation communities.

EBPC was able to conclude formal agreements with both the UNBI and the MAWIW Council prior to the commencement of the oral portion of the hearing. The agreements include provisions for environmental monitoring and protection of Aboriginal heritage and cultural resources.

18 UNBI is the Aboriginal organization representing the following 12 First Nations in New Brunswick: Madawaska, Woodstock, Kingsclear, St. Mary's, Oromocto, Eel River Bar, Pabineau, Metepenagiag, Eel Ground, Indian Island, Buctouche, and Fort Folly

19 The MAWIW Council was formed by the Chiefs of the three most populous First Nations in New Brunswick: Big Cove, Burnt Church, and Tobique.

5.4 Engagement Activities by the NEB

The NEB encourages effective public participation in its public hearing process to allow people, who could be affected by a project, the opportunity to provide their views to the Board before the Board makes a decision about a company's application for a project. Some people may be in favour of a project, others may be against it, and some people may be uncertain of what the presence of a project might mean to them. It is important that all of these points of view are heard so that the Board can make a fully-informed regulatory decision.

To provide an opportunity for public participation in this NEB public hearing process, the NEB undertook a number of activities to identify issues and concerns of those potentially affected by the Project, to provide access to project information, and to facilitate participation.

Public Meetings

- 5 April 2006 – NEB staff held a public information session in Saint John. The purpose of this session was to share information about the NEB's role, responsibilities and mandate, and to explain how the public could become involved in the NEB's regulatory process.
- 5 June 2006 – NEB staff held an information session for UNBI in Oromocto. The purpose of this session was to share information about the NEB's role, responsibilities and mandate, and to explain how the public could become involved in the NEB's regulatory process.
- 19 and 20 June 2006 – NEB staff held public information sessions in Saint John. The purpose of these sessions was to assist individuals in selecting a method of participation and preparing for effective and meaningful participation in the public hearing process for the Brunswick Pipeline Project.
- 12 October 2006 –The NEB panel and staff held pre-hearing planning sessions in Saint John. The sessions were designed to assist parties in their preparation for the NEB public hearing on the Brunswick Pipeline Project, and to invite Intervenor feedback to assist in the planning for the oral portion of the hearing.

Communications

- When the decision to hold a public hearing was made, a hearing notice was issued on 9 June 2006. It was published in the newspapers that have the largest circulation in the areas most affected by the Project, as well as in the *Canada Gazette*. The notice outlined the subject of the hearing, where and when it would be held and how a copy of Hearing Order GH-1-2006 could be obtained.
- Invitation to the first public information session held by the Board was advertised in local newspapers; notice was provided in the Hearing Order or directly to participants for the other sessions.
- All parties to the hearing and individuals who requested to make an oral statement received notice by mail of the pre-hearing planning sessions.
- NEB staff answered numerous procedural questions via telephone inquiries.

- The Board issued a document called "What Can I Expect at the Hearing?" that provided definitions and explanations on the hearing process in order to assist Intervenors and Government Participants.
- The hearing was audio broadcast live from Saint John, which allowed the public and the parties to the hearing to follow the proceedings without having to travel and attend the hearing.
- Hard copies of exhibits were available in the hearing room, with a computer and printer available for public use.
- Transcripts of the oral hearing, in hardcopy and electronic form, were made available after each day of the proceeding.

Public Access to Documents

- The NEB requested that EBPC make available for public viewing, at six locations, all documents relating to this application and public hearing process.
- Electronic copies of documents issued by the NEB and parties to the hearing, and letters of comment were available at the National Energy Board's Website (www.neb-one.gc.ca).

These activities were designed to facilitate effective public participation in the EA and the NEB public hearing process. Persons potentially affected by the Project were given the opportunity to participate, either in full or in part, in the public hearing. Members of the public could participate in this hearing in one of three ways – by filing a letter of comment on the Project, by providing an oral statement or by seeking Intervenor status. The procedure for becoming a participant was described in Hearing Order GH-1-2006.

There were 72 Intervenors and three government participants in the NEB hearing, all of whom were provided the opportunity to present evidence, conduct cross-examination and make final arguments. The letter of comment option was intended to allow interested persons who did not wish to appear at the hearing an opportunity to provide their views and opinions on the Project. There were 184 letters of comment filed in this proceeding. The oral statement option was intended to allow interested persons who did not wish to intervene an opportunity to give their views to the Board. There were 19 oral statements presented during the oral portion of the hearing. In addition, written evidence was filed, there was an information request process, the oral portion of the hearing extended over 13 days, and written final argument was filed.

5.5 Summary of Public Comments

Comments from the public were received during the NEB public hearing process in a variety of ways:

- through information provided by EBPC about the results of its consultation program;
- via letters of comments; and
- through written and oral presentations of information during the proceeding.

Many members of the public provided comments with respect to public safety, including concerns about:

- consequences of an accident or malfunction, including malfunctions resulting from vandalism or terrorism, on public safety;
- emergency access to and from communities in the event of an accident or malfunction;
- capacity of first responders and the hospital in the event of accidents or malfunctions; and
- psychosocial health impacts related to anxiety and stress.

Many people also expressed concerns about the Project crossing through Rockwood Park. These concerns included:

- industrial development occurring on land designated for use as a park;
- environmental effects from the Project in Rockwood Park, such as effects on surface water, wildlife, caves; and,
- effects to recreational use of the Park.

The NEB also received comments regarding specific environmental effects of the Project, including concerns about:

- environmental effects to the Loch Alva Protected Natural Area and environmentally significant areas;
- off-road vehicle access along the RoW;
- effects on water resources in the urban area;
- urban wildlife;
- greenhouse gas (GHG) emissions;
- air emissions and tree removal with the potential to affect air quality;
- interference with land use; and
- effects on blueberry fields in Milford area.

Comments about socio-economic issues included concerns about:

- property damage resulting from pipeline construction;
- noise;
- disruptions in the City, e.g., traffic, dust, disturbance to zoo;
- health effects from dust; and,
- development of one pipeline leading to future development of more pipelines.

Many individuals indicated opposition to a route through the City and Rockwood Park, and near occupied buildings, such as schools, the hospital, and residences, but would accept or support a marine route for the pipeline.

Some comments were received in support of the Project, based on potential economic benefits to the community, benefits of natural gas supply and confidence in the Applicant's ability to meet environmental and safety standards.

The Board has given due consideration to all comments raised throughout this proceeding. For consideration under the CEA Act, public comments must be related to the likely environmental effects of the proposed Project. The comments and concerns that relate to the Board's CEA Act mandate have been considered in the preparation of this EA Report.

In addition, the Board received comments on a number of other matters. Those comments that relate to matters that may be more appropriately considered under the Board's mandate under the NEB Act will be considered in the Reasons for Decision to be issued at a later date. These included concerns about:

- lack of benefits to the City and citizens of Saint John;
- effects on property value and property insurance rates resulting from proximity to the Project;
- interference with future property developments;
- costs to the City resulting from the Project, such as from effects on City infrastructure;
- the consultation program conducted by M&NP and then EBPC and a general lack of information about the Project;
- corporate social responsibility of companies associated with the Proponent (Nova Scotia Power, Repsol);
- lack of consultation with the Passamaquoddy;
- the need for the Project, the economic feasibility of the Project; and potential commercial impacts of the Project; and
- consideration of alternative routes for the Project (e.g., a marine crossing).

Other comments received from the public include concerns about:

- the LNG Terminal and the pipeline Project have not been assessed together as one project; and
- environmental effects from the LNG Terminal and LNG tanker activity.

The comments regarding consideration of the LNG Terminal and LNG tanker activity have been addressed in the Board's ruling on scope in Appendix 4 and are discussed further in section 7.3.

Views of the Board

The Brunswick Pipeline Project marks the first time that the NEB's public hearing process has been substituted for an EA by a review panel under the CEA Act. Throughout the process, considerable effort has been focused on ensuring that the requirements of the CEA Act regarding public participation have been met. The Board greatly appreciates the

participation of the public in the EA of the proposed Project, and is of the view that the NEB public hearing process has fulfilled the public participation requirements of the CEA Act for review panels.

Paragraph 16(1)(c) of the CEA Act states that every assessment by a review panel of a project shall include a consideration of comments from the public. The Board has taken into consideration comments from the public in assessing the proposed Project. For example, in assessing the environmental effects of the Project, the Board used an issue-based approach, which relied on the identification of issues by both technical experts and by people who could be affected by the pipeline.

Subsection 34(a) of the CEA Act states that a review panel shall ensure that the information required for an assessment by a review panel is obtained and made available to the public. The Board notes that the information required for the EA was made available to the public. This information could be accessed through a variety of means, including:

- documents relating to this application and public hearing process were available for public viewing at six Saint John locations and at the oral portion of the public hearing;
- electronic copies of documents were available on the NEB's Website;
- EBPC attempted to ensure that all those located within the corridor were contacted directly and provided with information on the Project; and
- 15 First Nation communities were given information about the Project.

Subsection 34(b) of the CEA Act states that a review panel shall hold hearings in a manner that offers the public an opportunity to participate in the assessment. For this Project, the public was given an opportunity to participate in the NEB public hearing process in a variety of ways (e.g., Intervenors, letters of comment, oral statements). The Board acknowledges and appreciates the time and effort the public devoted to the process and the personal contributions they made.

Paragraph 34(c)(ii) of the CEA Act states that a review panel shall prepare a report setting out a summary of any comments received from the public, and the Board notes that section 5.5 of this Report provides a summary of public comments. Subsection 35(3) of the CEA Act states that a hearing by a review panel shall be public, and the Board notes that the NEB public hearing process was open to the public.

Regarding the intent of the CEA Act to clearly support the principle of early and meaningful public participation, the Board notes that several members of the public have argued that project consultation was inadequate. With respect to early public participation, the Board is

satisfied that the consultation program commenced in a timely manner as it was initiated shortly after the precedent agreement was signed between M&NP and Repsol in July 2005. With respect to meaningful public participation, claims from members of the public suggest that EBPC and the NEB could have done a better job in relation to the key elements of meaningful public participation. In accordance with the philosophy of continuous improvement, the Board is interested in learning from its first substituted public hearing process. Section 8 of this Report provides a summary of the Board's comments on the substitution process and identifies potential areas that could be enhanced. While recognizing that certain areas could have been improved, the Board is satisfied that EBPC and the NEB public hearing process have met the requirements for public participation under the CEA Act.

An evaluation of EBPC's consultation program undertaken pursuant to the guidelines set out in the NEB's Filing Manual, including but not limited to consultation activities related to environmental matters, will be included in the Board's Reasons for Decision issued pursuant to its mandate under the NEB Act. The evaluation in the Reasons for Decision will provide a more comprehensive assessment of the consultation program, including consideration of the comments and concerns raised by participants.

6.0 METHODOLOGY OF THE NEB'S ENVIRONMENTAL ASSESSMENT

Factors Being Assessed

Section 6.0 outlines the methodology used in the NEB's EA analysis in section 7.0 of this Report. The section 7.0 analysis considers the following factors from the scope of the EA.

1. The environmental effects of the Project, including the environmental effects of malfunctions or accidents that may occur in connection with the Project and any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out;
2. the significance of the effects referred to in paragraph 1;
3. comments from the public that were received during the public review; and
4. measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project.

Baseline Information and Sources:

The analysis for this EA Report is based on:

- EBPC's application, supplementary evidence and responses to information requests;
- evidence submitted by other parties to the hearing and associated responses to information requests;

- testimony provided at the oral portion of the hearing, including that provided in oral statements; and
- letters of comment received.

For more details on how to access or obtain the documents and information upon which this EA is based, please contact the Secretary of the Board at the address specified in section 10.0 of this Report.

Methodology of the Analysis:

In assessing the environmental effects of the Project, the NEB used an issue-based approach to fulfill the requirements of the CEA Act. Environmental effects are defined in the CEA Act, in respect of a project, as

> (a) any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species as those terms are defined in section 2(1) of the *Species at Risk Act (SARA)*, (b) any effect of any change referred to in paragraph (a) on health and socioeconomic conditions, on physical and cultural heritage, the current use of lands and resources for traditional purposes by Aboriginal persons, or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, or (c) any change to the project that may be caused by the environment.

In its analysis within section 7.1, the NEB identified interactions expected to occur between the proposed project activities (identified in section 2.3) and the surrounding environmental elements. Environmental effects were classified as either adverse or positive.

Based on guidance from the CEA Agency (1994), key factors that can be considered for determining adverse environmental effects include:

- adverse environmental effects on the health of biota;
- loss of rare or endangered species;
- reductions in biological diversity;
- loss or avoidance of critical/productive habitat;
- fragmentation of habitat or interruption of movement corridors and migration routes;
- transformation of natural landscapes;
- discharge of persistent or toxic chemicals;
- toxicity effects on human health;
- loss of, or detrimental change in, current use of lands and resources for traditional purposes; foreclosure of future resource use or production; and
- adverse environmental effects on human health or well being.

A positive environmental effect is one that:

- improves ambient air quality or reduces ambient sound pressure levels;
- improves quantity or quality of water resources;
- increases indigenous plant or wildlife species populations or diversity, or enhances or increases the area of habitat for indigenous species;
- enhances the quality, the indigenous species' diversity, or the area of a wetland;
- decreases the likelihood (from present conditions) that a serious injury or loss of life could arise;
- enhances land and resource use for residential, commercial, public, forestry, agricultural or recreational use; or
- enhances understanding of local, regional, or cultural heritage through increased knowledge, or provides physical protection for a site that might otherwise have been destroyed through natural or non-project events, in the absence of the Project.

Also included in this EA was the consideration of potential accidents and malfunctions that may occur due to the Project and any change to the Project that may be caused by the environment.

If there were no expected interactions between the Project and the environmental element then no further examination was deemed necessary. Similarly, no further examination was deemed necessary for interactions that would result in positive potential effects. In circumstances where the potential effect was unknown, it was categorized as a potential adverse environmental effect. All potential adverse effects that were identified underwent further analysis in either section 7.2.3 or section 7.2.4.

Section 7.2.3 provides an analysis for all potential adverse environmental effects that are normally resolved through the use of standard design or routine mitigation measures. In these cases, mitigation measures are outlined or explanations are provided as to why mitigation measures are not required.

Section 7.2.4 provides a detailed analysis for each potential adverse environmental effect that generated particular public concern, involves non-standard mitigation measures, monitoring or follow-up programs, or requires the implementation of an issue-specific recommendation. The analysis specifies those mitigation measures, monitoring and/or follow-up programs, views of the NEB and any issue-specific recommendations and ratings for criteria used in evaluating significance.

The CEA Act requires that significance of environmental effects be considered as part of the EA, but does not define a "significant environmental effect". The CEA Agency (1994) provides guidance on determining whether an adverse environmental effect is significant. It suggests that environmental standards, guidelines, and objectives are often used to determine significance. Where threshold standards or guidelines do not exist, other methods may be needed. The CEA Agency suggests that criteria for determining significance include magnitude, geographic extent, duration and frequency, irreversibility and ecological context. Criteria for determining likelihood include probability of occurrence and scientific uncertainty.

Table 6.1, below, defines the criteria used by the NEB for evaluating the significance of the effects discussed in section 7.2.4. These criteria are largely based on criteria submitted by EBPC. However, where EBPC's criteria were unclear, in particular in the category of frequency, the NEB adopted other criteria to provide more clarity to its evaluation. "Significant" environmental effects would typically involve environmental effects that are a combination of several of high frequency, irreversible, long term in duration, large in extent, or high magnitude.

Table 6.1 – Significance Criteria Definitions

Criteria	Definition
Frequency	Low: at sporadic intervals during one phase of the project lifecycle Medium: continuous during one phase of the project lifecycle High: continuous throughout all phases of the project lifecycle
Duration	1 = < 1 month 2 = 1-12 months 3 = 13-36 months 4 = 37-72 months 5 = > 72 months
Reversibility	Reversible: effect is not permanent Irreversible: effect is permanent
Geographic Extent	1 = <1 km^2 2 = 1- 10 km^2 3 = 11-100 km^2 4 = 101-1000 km^2 5 = 1001 – 10 000 km^2 6 = > 10 000 km^2
Magnitude	<u>For atmospheric environment</u> Low: within normal variability of baseline conditions Medium: increase/decrease with regard to baseline but within regulatory limits and objectives High: singly or as a substantial contribution in combination with other sources causing exceedances or impingement upon limits and objectives beyond the project boundary <u>For water resources</u> Low: affecting the available quantity or quality of water resources at levels that are indiscernible from natural variation Medium: limiting the available quantity or quality of water resources, such that these resources are occasionally rendered unusable to current users for periods up to two weeks at a time High: limiting the available quantity and quality of water resources, such that these resources are rendered unusable or unavailable for current users during the life of the Project or for future generations beyond the life of the Project

Criteria	Definition	
	For fish and fish habitat, vegetation, wetlands, wildlife and wildlife habitat	
	Low:	localized environmental effect on a specific group, habitat, or ecosystem, returns to pre-project levels in one generation or less, within natural variation
	Medium:	portion of a population or habitat, or ecosystem, returns to pre-project levels in one generation or less, rapid and unpredictable change, temporarily outside range of natural variability
	High:	affecting a whole stock, population, habitat or ecosystem, outside the range of natural variation, such that communities do not return to pre-project levels for multiple generations
	For health and safety	
	Low:	no environmental effects beyond accident location, no lost time injuries, affecting only those involved in the accident, malfunction, or unplanned event.
	Medium:	environmental effects temporarily beyond accident location, lost time injuries, affecting persons not directly involved in the accident, malfunction, or unplanned event.
	High:	long-term environmental effects at or beyond accident location, serious injury or loss of life, affecting regional population.
	For land and resource use	
	Low:	specific group, residence or neighbourhood affected such that adjacent land use activities will be disrupted and current activities cannot continue even after short periods of time.
	Medium:	part of a community affected such that adjacent land use activities will be disrupted such that current activities cannot continue for extended period of time longer than two years.
	High:	community affected such that adjacent land use activities will be disrupted such that current activities cannot continue for extended periods of time longer than two years and are not compensated for.
	For archaeological and heritage resources	
	Low:	minor impairments to cultural resources appreciation or environmental effects to non-significant historic period heritage feature, e.g., stone fence line, field stone pile; loss of individual artifact.
	Medium:	loss of historic or cultural resources not of major importance, or predisturbed heritage site/artifacts present, however, no or little chance of intact features.
	High:	intact “significant” heritage site, pre-contact and/or contact period, features present, portion or all of site will be destroyed or lost.

Section 7.3 addresses cumulative effects, section 7.4 addresses capacity of renewable resources, section 7.5 addresses follow-up programs and section 9.2 lists recommendations for any subsequent regulatory approval of the Project.

7.0 ENVIRONMENTAL EFFECTS ANALYSIS

7.1 Project - Environment Interactions

	Environmental element	Project interaction? Y/N/U	Description of interaction (How, When, Where)	Type of potential effect P/Adv	Potential adverse environmental effect	Effects and mitigation measures
Biophysical	Soil and Soil Productivity	Y	▪ Grubbing, topsoil stripping and compaction during construction activities	Adv	▪ Loss of soil capability to support vegetation	▪ Section 7.2.1 ▪ Table 7.2.3
	Vegetation	Y	▪ Clearing and grubbing for site preparation ▪ Installation of watercourse crossings ▪ Construction of temporary ancillary structures and facilities ▪ Vegetation control along pipeline RoW during pipeline operation ▪ Unauthorized access along RoW by ATVs or other motorized vehicles	Adv	▪ Loss of vegetation and change in quality of habitat for vegetation ▪ Potential for invasive species to become established ▪ Potential loss of Species at Risk or Species of Conservation Concern	▪ Section 7.2.1 ▪ Table 7.2.3 ▪ Effects from unauthorized access to RoW are addressed in Table 7.2.4.2 ▪ Species at Risk or Species of Conservation Concern are addressed in Table 7.2.4.1

Legend: Y (Yes); N (No); U (Uncertain); P (Positive); Adv (Adverse)

	Environmental element	Project interaction? Y/N/U	Description of interaction (How, When, Where)	Type of potential effect P/Adv	Potential adverse environmental effect	Effects and mitigation measures
Biophysical	Water Quality and Quantity	Y	▪ Blasting of rock ▪ Ground disturbance and equipment traffic at project sites ▪ Trench excavation ▪ Watercourse crossings ▪ Water withdrawal for hydrostatic testing of pipeline ▪ Herbicide application for vegetation control during operations and maintenance ▪ Presence of pipeline trench ▪ Unauthorized access along RoW by ATVs or other motorized vehicles	Adv	▪ Alteration of water well yields from blasting and other construction activities ▪ Sedimentation of shallow wells and watercourses ▪ Degradation of water quality from acid generated from sulphide-bearing rock (acid rock drainage) ▪ Temporary lowering of surface water levels or nearby well yields from water withdrawal for hydrostatic testing ▪ Change in physical or chemical quality of water resources from discharge of test waters, exposed contaminated soils, hazardous materials spills, or herbicide application ▪ Change in water flow systems from presence of pipeline trench	▪ Section 7.2.1 ▪ Table 7.2.3 ▪ Effects from acid rock drainage are addressed in Table 7.2.4.3 ▪ Effects from unauthorized access to RoW are addressed in Table 7.2.4.2
	Fish and Fish Habitat	Y	▪ Installation of pipeline through watercourses ▪ Blasting in or near waterbodies ▪ Unauthorized access along RoW by ATVs or other motorized vehicles	Adv	▪ Change in surface water and fish habitat quality ▪ Direct mortality of fish species ▪ Potential loss of Species at Risk or Species of Conservation Concern	▪ Section 7.2.1 ▪ Table 7.2.3 ▪ Effects from unauthorized access to RoW are addressed in Table 7.2.4.2 ▪ Species at Risk or Species of Conservation Concern are addressed in Table 7.2.4.1

Legend: Y (Yes); N (No); U (Uncertain); P (Positive); Adv (Adverse)

	Environmental element	Project interaction? Y/N/U	Description of interaction (How, When, Where)	Type of potential effect P/Adv	Potential adverse environmental effect	Effects and mitigation measures
Biophysical	Wetlands	Y	▪ Site preparation and construction activities in or near wetlands ▪ Exposure of sulphide-bearing rock from excavation and trenching ▪ Seeding along RoW near wetlands during site reclamation after construction ▪ Herbicide use for vegetation control during operations ▪ Unauthorized access along RoW by ATVs or other motorized vehicles	Adv	▪ Loss of wetland function from a change in wetland quality or quantity from site preparation, pipe installation and site restoration activities ▪ Acidification of wetland from exposed sulphide-bearing rock ▪ Establishment of invasive species of vegetation in wetlands ▪ Potential for alteration of wetland habitat quality from use of herbicides	▪ Section 7.2.1 ▪ Effects from acid rock drainage are addressed in Table 7.2.4.3 ▪ Loss of wetland function is addressed in Table 7.2.4.4 ▪ Effects from unauthorized access to RoW are addressed in Table 7.2.4.2
	Wildlife and Wildlife Habitat	Y	▪ Vegetation removal during clearing ▪ Noise from blasting activities ▪ Trenching and pipeline installation ▪ Unauthorized access along RoW by ATVs or other motorized vehicles	Adv	▪ Habitat fragmentation ▪ Change in quality of habitat for wildlife ▪ Direct mortality of wildlife ▪ Potential loss of Species at Risk and Species of Conservation Concern ▪ Increased access to wildlife habitat along RoW	▪ Section 7.2.1 ▪ Table 7.2.3 ▪ Effects from unauthorized access to RoW are addressed in Table 7.2.4.2 ▪ Species at Risk or Species of Conservation Concern are addressed in Table 7.2.4.1
	Species at Risk (federal) and Species of Special Status (provincial, territorial, local)	Y	▪ Disturbance of Species at Risk or Species of Conservation Concern and associated habitat throughout construction	Adv	▪ Potential loss of Species at Risk or Species of Conservation Concern ▪ Potential loss of critical habitat for Species at Risk or Species of Conservation Concern	▪ Section 7.2.1 ▪ Table 7.2.4.1

Legend: Y (Yes); N (No); U (Uncertain); P (Positive); Adv (Adverse)

	Environmental element	Project interaction? Y/N/U	Description of interaction (How, When, Where)	Type of potential effect P/Adv	Potential adverse environmental effect	Effects and mitigation measures
Biophysical	Air Quality	Y	▪ Emissions from vehicles and equipment during construction ▪ Dust from blasting activities ▪ Fugitive emissions from pipeline during operation	Adv	▪ Change in local air quality during construction ▪ Release of methane during operations into atmospheric environment	▪ Section 7.2.1 ▪ Table 7.2.3
Socio-economic	Heritage Resources	U	▪ Construction could interact with previously unidentified heritage resources ▪ Construction could interact with identified heritage resources	Adv	▪ Disturbance to, or destruction of, heritage resources	▪ Section 7.2.1 ▪ Table 7.2.4.7
	Human Health/ Aesthetics	Y	▪ Increased noise levels in Milford and Pokiok, associated with HDD activities, could disrupt nearby residents	Adv	▪ Noise impacts on residents of Milford and Pokiok	▪ Section 7.2.1 ▪ Table 7.2.4.8
		Y	▪ Elevated noise emissions (including vibrations) during construction (including blasting) near buildings or residents	Adv	▪ Increased noise levels from construction activities with potential for disturbance along the RoW ▪ Property damage from vibrations during construction	▪ Section 7.2.1 ▪ Table 7.2.3
		Y	▪ Unauthorized access to the RoW during construction	Adv	▪ Injuries to the public	▪ Section 7.2.1 ▪ Table 7.2.3
		Y	▪ Increased air emissions and dust during construction (refer to Air Quality section above for additional details)	Adv	▪ (addressed in the Air Quality section above)	

Legend: Y (Yes); N (No); U (Uncertain); P (Positive); Adv (Adverse)

	Environmental element	Project interaction? Y/N/U	Description of interaction (How, When, Where)	Type of potential effect P/Adv	Potential adverse environmental effect	Effects and mitigation measures
Socio-economic	Human Occupancy/ Resource Use	Y	▪ Construction activities in Rockwood Park could interfere with recreational pursuits	Adv	▪ Disruption to recreational pursuits in Rockwood Park	▪ Section 7.2.1 ▪ Table 7.2.4.6
		Y	▪ Restoration and future improvements to Rockwood Park could enhance recreational pursuits	P	▪ No adverse environmental effect	▪ Effect not discussed further
		Y	▪ Construction activities could interfere with recreational use	Adv	▪ Temporary restrictions on water-courses deemed navigable ▪ Temporary restricted access to hunting, fishing, biking and ATV use locations, and other recreational areas	▪ Section 7.2.1 ▪ Table 7.2.3
		Y	▪ Construction activities and existence of the pipeline could interact with agricultural land use	Adv	▪ Disruption of agricultural operations	▪ Section 7.2.1 ▪ Table 7.2.3
		Y	▪ Construction activities could result in disruption to traffic flow, which in turn could interfere with access to residences and businesses	Adv	▪ Traffic interruptions	▪ Section 7.2.1 ▪ Table 7.2.3
		Y	▪ Construction activities could impact the quality and quantity of potable water (refer to Water Quality and Quantity section above for additional details)	Adv	▪ (addressed in Water Quality and Quantity section above)	

Legend: Y (Yes); N (No); U (Uncertain); P (Positive); Adv (Adverse)

	Environmental element	Project interaction? Y/N/U	Description of interaction (How, When, Where)	Type of potential effect P/Adv	Potential adverse environmental effect	Effects and mitigation measures
Seocio-economic	Social and Cultural Well-being	U	▪ The operation of the pipeline may increase safety concerns of residents in close proximity to the pipeline	Adv	▪ Increased stresses on residents	▪ Section 7.2.1 ▪ Table 7.2.3
	Traditional Land and Resource Use	U	▪ Construction in areas currently used by Aboriginal persons for hunting, fishing, trapping and gathering ▪ Unauthorized access along RoW by ATVs or other motorized vehicles	Adv	▪ Effects on the current use of lands and resources for traditional purposes by Aboriginal persons, such as hunting, fishing, trapping, gathering	▪ Section 7.2.1 ▪ Effects from unauthorized access to RoW are addressed in Table 7.2.4.2 ▪ Disruption of current use of lands is addressed in Table 7.2.4.9
Other	Accidents/ Malfunctions	Y	▪ Hazardous materials spill during construction or operation from equipment refueling or malfunction ▪ Sediment control failure ▪ Temporary watercourse crossing washout during construction ▪ Accidental fire ignited during construction activities	Adv	▪ Contamination of soil and water resources ▪ Sedimentation of watercourses ▪ Damage to vegetation and to wildlife habitat, and reduced air quality, in the event of a fire	▪ Section 7.2.1 ▪ Table 7.2.3
		Y	▪ Pipeline rupture or leak during operation, and potential ignition of gas	Adv	▪ Direct mortality to humans, wildlife and vegetation in the area in the event of a fire	▪ Section 7.2.4.10

Legend: Y (Yes); N (No); U (Uncertain); P (Positive); Adv (Adverse)

	Environmental element	Project interaction? Y/N/U	Description of interaction (How, When, Where)	Type of potential effect P/Adv	Potential adverse environmental effect	Effects and mitigation measures
Other	Effects of the Environment on the Project	U	▪ Weather (severe rainfall and flooding) ▪ Seismic activity (earthquakes) ▪ Sinkholes ▪ Induced potential	Adv	▪ Erosion of pipeline cover during operation from severe rainfall or flooding ▪ Damage to pipeline from seismic activity ▪ Damage the pipeline through subsidence related to a sinkhole ▪ Danger to personnel and damage to coatings and pipe from fault currents resulting from lightning or upset conditions of electrical facilities inducing electrical potential in the pipe	▪ Section 7.2.1 ▪ Table 7.2.3

Legend: Y (Yes); N (No); U (Uncertain); P (Positive); Adv (Adverse)

7.2 Potential Adverse Environmental Effects

7.2.1 Environmental Management Framework

To mitigate and manage the potential adverse environmental effects of the Project, EBPC indicated that it would implement its Environmental Management Framework. The Project's Environmental Management Framework would be comprised of the following major program components:

- a Pipeline Design and Quality Assurance Program;
- an Environmental Protection and Safety Management Program;
- an Emergency Preparedness and Response Program; and
- a Public Awareness Program.

The Project would be designed in accordance with the design criteria, specifications, programs, manuals, procedures, measures, and plans identified in the Canadian Standards Association (CSA) Z662 standard. A quantitative risk analysis (Bercha International Inc., 2005) was conducted on the proposed pipeline consistent with the risk assessment guidelines established in the CSA Z662 standard. A Quality Assurance Program would be implemented to ensure that the pipe and pipeline components used in construction of the pipeline meet the specifications provided for in the pipeline design to reduce the probability of material defects.

EBPC's Environmental Protection and Safety Management Program would include a construction safety manual and a maintenance safety manual to ensure work is performed safely and in accordance with applicable health and safety regulations. It would also include an environmental protection plan (EPP) for construction, based on the current policies and procedures, environmental management practices, and contingency plans of M&NP and Duke Energy Gas Transmission for pipeline projects. The EPP would include:

- roles and responsibilities for implementation of environmental protection measures, descriptions of major construction activities and a definition of their sequence;
- qualifications and training requirements for personnel implementing the EPP;
- a definition of major construction activities and definition of their sequence, as well as the mitigation measures and applicable procedures to be implemented for various construction activities;
- measures to minimize disruption to local communities as a result of construction;
- identification of the environmental resources present along the pipeline route and the specific mitigation measures to be implemented to protect these resources;
- a description of monitoring and follow-up measures to be implemented; and
- contingency and emergency response plans for accidents, malfunctions and unplanned events, such as hazardous spill response procedures, soil erosion and sediment control guidelines, fire response, plans in the event contamination sites are encountered, response plans for wildlife encounters, and procedures and guidance in the event a heritage, paleontological, or archaeological resource is encountered during construction.

EBPC stated that it would use a site inspection and monitoring program to ensure the effectiveness of EPP implementation, including having an inspector onsite to ensure compliance with the EPP. The inspector would work with project personnel to address environmental issues and take immediate action to address any work in non-compliance with the Environmental Protection and Safety Management Program, including stopping or relocating work if necessary.

The Environmental Protection and Safety Management Program would include other components; for example, comprehensive operation and maintenance manuals describing safe work plans and procedures and requirements for worker and contractor training related to health and safety. A Pipeline Integrity Management Plan would be prepared and implemented to detect pipeline defects and prevent pipeline ruptures. Routine pipeline monitoring and surveillance programs, including line patrol surveys, would be conducted to identify potential operation problems, security issues, and unauthorized activities on the RoW.

Audits and site inspections would be conducted to ensure that the Environmental Protection and Safety Management Program policies and procedures are being implemented effectively, deficiencies recorded, and corrective action taken.

The Emergency Preparedness and Response Program would be comprised of standards addressing emergency response training and the scope and frequency of emergency response exercises, continuing education programs for first responders and Emergency Planning Zone residents, and a formal liaison program for both lead and supporting government agencies. It would include a Field Emergency Response Plan.

A Public Awareness and Education Program would be implemented to alert the public of the requirements and restrictions associated with activities conducted in and around the pipeline RoW. The program would include ongoing communication and consultation.

Since the Environmental Management Framework described above applies to all management and mitigation of all potential environmental effects of the Project, the elements of the framework will only be discussed further in this EA Report in the context of those specific effects where elaboration is required.

In response to possible Certificate conditions issued by the Board for comment during the GH-1-2006 proceeding, EBPC expressed concerns about a possible condition that would require EBPC to specify, at least 30 days prior to construction, a detailed list of the number and type of each inspection position in its inspection program, including job descriptions, qualifications, roles, responsibilities, and decision-making authority. EBPC suggested that it would be unduly restrictive given the likelihood that construction inspection staffing levels, duties and responsibilities must be adjusted to accommodate the work flow, which is impacted by weather, landowner requirements, certain site-specific environmental matters and other unforeseen conditions.

Views of the Parties

Parties to the hearing provided few comments on EBPC's Environmental Management Framework in general. The vast majority of the comments made focused on EBPC's Emergency

Preparedness and Response Program. These comments are addressed later in this Report, at section 7.2.4.10.

Views of the Board

The Board finds that EBPC's proposed Environmental Management Framework as described would be consistent with the *Onshore Pipeline Regulations, 1999* (OPR) and is appropriate.

The Board recognizes EBPC's concern that the details of its inspection program would need to be flexible in order to address conditions during construction. To address this concern while still providing the Board with information demonstrating the adequacy of EBPC's inspection program, the Board has amended the proposed condition that would be recommended should the Project receive regulatory approval, to require that EBPC file preliminary information about its program and how any changes to its program would be determined.

If the Project were to receive regulatory approval, the Board recommends that the following general conditions be attached to the Certificate.

- EBPC shall file with the Board for approval, at least sixty days prior to construction, a project-specific EPP. This EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in EBPC's application for the Project, subsequent filings, evidence collected during the hearing process, or as otherwise agreed to during questioning or in its related submissions. The EPP shall describe the criteria for the implementation of all procedures and measures, and shall use clear and unambiguous language that confirms EBPC's intention to implement all of its commitments. Construction shall not commence until EBPC has received approval of its EPP from the Board.

  The EPP shall address, but is not limited to, the following elements:
  a. environmental procedures including site-specific plans, criteria for implementation of these procedures, mitigation measures and monitoring applicable to all project phases, and activities;
  b. a reclamation plan which includes a description of the condition to which EBPC intends to reclaim and maintain the right of way once the construction has been completed, and a description of measurable goals for reclamation; and
  c. evidence of consultation with relevant regulatory authorities that either confirms satisfaction with the proposed mitigation or summarizes any unresolved issues with the proposed mitigation.

- EBPC shall file with the Board for approval, at least thirty days prior to construction, a construction inspection program. The program shall include:

  a. a preliminary list of the number and type of each inspection position, including job descriptions, qualifications, roles, responsibilities, decision-making authority;
  b. a discussion of how any changes to the items outlined in (a) would be determined during the course of construction; and
  c. the reporting structure of personnel responsible for inspection of the various pipeline construction activities, including environment and safety.

- Within 6 months following commencement of operation of the Project, and on or before the 31st of January following each of the second (2nd) and fourth (4th) complete growing seasons following commencement of the operation of the Project, EBPC shall file with the Board a post-construction environmental report that:

  a. identifies on a map or diagram any environmental issues that arose during construction;
  b. provides a discussion of the effectiveness of the mitigation applied during construction;
  c. identifies the current status of the issues identified, and whether those issues are resolved or unresolved; and
  d. provides proposed measures and the schedule EBPC shall implement to address any unresolved issues.

Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations B, E, and O.

The Board expects that EBPC would include in its EPP all commitments made during the course of the GH-1-2006 proceeding. This includes all commitments made in response to comments or recommendation from other parties, including government departments. Through consultation with relevant regulatory authorities, the Board expects that any outstanding comments from government departments, such as EC, about mitigation measure details would be addressed in the development of the EPP for the Project.

7.2.2 Routing

One of the primary forms of mitigation of potential effects from pipeline projects is appropriate route selection. As discussed in section 3.3, EBPC considered various alternative routes for the Project and evaluated routing options based on criteria that included environmental constraints and minimizing disturbance through the use of existing corridors where practicable.

EBPC noted that three vegetation-based environmentally significant areas intersect with, or are located near, the preferred corridor. These areas are along the shores of rivers. The site where the

preferred corridor would cross these rivers may be some distance from the biological feature for which the environmental significant area was established to protect. The preferred corridor also runs through the southern edge of the Loch Alva Protected area, which contains 21 925 ha of two neighbouring ecoregions.

EBPC indicated that detailed routing within the preferred corridor would be based on further site-specific constraint mapping, field investigations, and information received from the public, landowners, other interested parties, and government agencies. EBPC referred to avoidance of environmental features during detailed routing as a form of mitigation.

Views of the Board

The Board is satisfied that EBPC has selected an appropriate corridor with respect to minimizing adverse environmental effects and finds that EBPC has demonstrated a commitment to avoidance of environmental features in the final route selection process.

7.2.3 Analysis of Potential Adverse Environmental Effects to be Mitigated through Standard Measures

This section identifies proposed standard design or mitigation measures committed to by EBPC. These measures have been summarized in this section. The Board expects that detailed standard design or mitigation measures would be provided by EBPC in its EPP and other documents as part of its Environmental Management Framework as discussed in section 7.2.1.

Potential Adverse Environmental Effect	EBPC's Proposed Standard Design or Mitigation Measures
Loss of soil capability to support vegetation	▪ Avoid agricultural lands where practicable ▪ Compensate affected landowners during construction ▪ Suspend work in wet conditions ▪ Maintain soil layers ▪ Maintain a single travel path over agricultural lands
Loss of vegetation and change in quality of vegetation habitat	▪ Limit area of disturbance ▪ Avoid plant Species at Risk and Species of Conservation Concern by route selection ▪ Plan for watercourse crossings using NB Department of Environment and Local Government's (NBDELG) 2002 Watercourse Alteration Technical Guidelines ▪ Use erosion control measures ▪ Manage contaminated soils in accordance with the NBDELG's 2003 Guideline for Management of Contaminated Sites ▪ Limit use of herbicide during RoW maintenance, use herbicide of short persistence and low ecological toxicity, and follow manufacturer's guidelines for spraying
Potential for invasive species to become established	▪ Revegetate exposed soils with native vegetation to ensure long-term stabilization ▪ Seed mixes to be free of weed species to extent feasible ▪ Use cleaning stations for equipment and vehicles where required to reduce the spread and introduction of invasive species of plants

Potential Adverse Environmental Effect	EBPC's Proposed Standard Design or Mitigation Measures
Alteration of water well yields from blasting and other construction activities	▪ Monitor wells and water supply lakes and rivers within 50 m of excavation ▪ Identify wells within 500 m of blasting ▪ Inspect wells within 100 m of blasting and identify low yield wells ▪ Collect water samples from wells closest to blasting ▪ Design blasts to minimize vibration ▪ Follow regulatory guidelines for blasting ▪ Remediate or replace permanently affected wells ▪ Provide temporary water supplies when required
Sedimentation of shallow wells and watercourses	▪ Use sediment and erosion control measures ▪ Treat or replace water supply if required ▪ Provide temporary water supplies if necessary
Temporary lowering of surface water levels or nearby well yields from water withdrawal	▪ Adjust water withdrawal procedures in accordance with watersource water levels
Change in physical or chemical quality of water resources from discharge of test waters, exposed contaminated soils, hazardous material spills, or vegetation control measures	▪ Minimize dewatering for hydrostatic testing by transferring water from one test section to another ▪ Return test waters to a vegetated area in the same watershed from which the water was taken ▪ Evaluate hydrostatic test waters qualitatively, and if required, sample and analyze for a set of indicative water quality parameters ▪ Take mitigation action if water quality parameters exceed the Canadian Council of Ministers of the Environment (CCME) Environmental Quality Guidelines ▪ Dispose of contaminated soils as per applicable permits and regulations ▪ Enforce a minimum setback from water resources for use of hazardous materials ▪ No chemical spraying of herbicides on the RoW, use only herbicides of low persistence and low ecological toxicity within the confines of the valve and metering sites ▪ Treat or replace water supply if required
Change in water flow systems from presence of pipeline trench	▪ Install groundwater flow barriers to prevent flow along trench ▪ Use backfill with hydrological properties that avoid alteration to groundwater flow ▪ Avoid placing high traffic work sites (e.g., marshalling or storage yards) in protected watersheds, slopes and recharge areas
Change in surface water and fish habitat quality Direct mortality of fish	▪ Obtain DFO approval for blasting near/through watercourses ▪ Develop watercourse crossing plans using DFO and Watercourse Alteration Technical Guidelines ▪ Apply for, and follow requirements of, Watercourse and Wetland Alteration (WAWA) permit ▪ Use sediment and erosion control measures ▪ Limit area of disturbance, especially within 30 m of a watercourse ▪ For winter clearing, maintain a 30 m buffer zone at watercourse crossing locations ▪ Dispose of hydrostatic test waters within the same watershed from which water was obtained ▪ Test hydrostatic test waters for total suspended solids, metals and general water chemistry ▪ Monitor water discharge areas for erosion

Potential Adverse Environmental Effect	EBPC's Proposed Standard Design or Mitigation Measures
	▪ Monitor approach roads, abutments and bridge decks regularly; correct deficiencies immediately ▪ Minimize instream work, isolate work from the water flow where practicable ▪ Obtain DFO authorization for wet crossings, dry crossings, and instream blasting ▪ Use floating silt curtains and pump around for instream sediment control during wet crossings ▪ Instream equipment should be clean and inspected for drips and leaks prior to entering a watercourse and inspected regularly for leaks while instream ▪ Restore stream to preconstruction condition ▪ Contour, stabilize, armor and vegetate disturbed stream banks ▪ Adhere to DFO's harmful alteration, disturbance, or destruction of fish habitat (HADD) authorization conditions ▪ At the Dennis Stream: make every reasonable effort to use an isolated (dry) crossing method. If a wet crossing is required, use additional measures to limit sedimentation as outlined in EBPC's ESEA ▪ Designate fuel storage areas to be at least 100 m from watercourses ▪ Designate refueling areas to be at least 30 m from watercourses ▪ Use proper containment measures for hazardous materials storage tanks ▪ For annual maintenance activities involving travel along the length of the RoW, obtain permits to ford watercourses ▪ During operation, limit use of herbicides to station facilities, and use low toxicity, short persistence herbicides
Habitat fragmentation	▪ Locate RoW adjacent to other linear disturbances (e.g., SJL, IPL Route) ▪ Minimize RoW width and clearing to greatest extent practicable ▪ Minimize size of temporary workspaces ▪ Confine clearing and grubbing to RoW ▪ Minimize removal of shrubs and grubbing within 30 m of all streams ▪ Revegetate work areas
Change in quality of habitat for wildlife	▪ Retain surface soils for reinstatement following maintenance or repairs ▪ A WAWA permit would be obtained for any mechanical vegetation management within 30 m of a wetland greater than 1 ha or contiguous to a watercourse ▪ Manage contaminated soils in accordance with NBDELG's 2003 Guideline for Management of Contaminated Sites ▪ Avoid sensitive wildlife areas by route selection
Direct mortality of wildlife	▪ Check open trenches prior to backfilling for wildlife, such as wood turtles ▪ Minimize length of time that trenches are left open ▪ Erect fencing around boreholes and pits to protect wildlife ▪ Carry out RoW vegetation control to occur outside of the breeding season of bats ▪ Use manual and mechanical means of vegetation control along RoW; use chemical spraying only within the confines of graveled meter stations and other station facilities ▪ No chasing, harassing, or feeding wildlife by personnel ▪ Operate vehicles at appropriate speed and yield to wildlife ▪ Properly store and dispose of construction site wastes that might attract wildlife

Potential Adverse Environmental Effect	EBPC's Proposed Standard Design or Mitigation Measures
Change in local air quality during construction	▪ Use dust suppressants, such as water, during periods of heavy activity and dry periods ▪ Follow equipment maintenance schedules ▪ Use low sulphur fuels where feasible ▪ Preserve natural vegetation where practicable ▪ Minimize activities that generate large quantities of dust during high winds
Release of methane during operations into atmospheric environment	▪ Use a regular preventive maintenance program, including a leak detection and repair program and cathodic protection system to prevent leaks ▪ During major maintenance activities, isolate the pipeline section to minimize natural gas released ▪ Ensure pipeline operations staff are trained on best practices to reduce methane emissions
Increased noise levels from construction activities with potential for disturbance along the RoW	▪ Use noise controls where warranted (e.g., sound barriers) ▪ Use timing restrictions where warranted ▪ Keep the equipment in good working order (with mufflers) and restrict construction activities to daytime hours (10-12 hours per day) where practicable ▪ Due to the relatively isolated location of the proposed HDD for the St. Croix River, EBPC did not anticipated that a considerable amount of noise reduction mitigation would be required at that location. However, the proximity of any new residences in the area would be reviewed prior to commencement of the HDD and noise mitigation would be reconsidered if there were new residences that could be adversely affected by the noise created by the HDD activities. ▪ Noise associated with activities for the Saint John River HDD is addressed in section 7.2.4.8 Noise impacts on residents of Milford and Pokiok
Property damage from vibrations during construction	▪ Pre-blast surveys would be conducted for structures such as homes and cemeteries within a 200 m radius of planned blasting activities to ascertain baseline conditions and verify, with post-blast review, that blasting does not adversely affect these structures ▪ If there were an adverse effect on these structures, then EBPC would either rectify the damage, or compensate for it
Injuries to the public	▪ Use blast mats to prevent flying debris ▪ The Construction Safety Manual would prescribe protective measures (e.g., preparation of safe work procedures, use of personal protective equipment) to mitigate potential hazards (e.g., noise, hazardous chemical handling and conventional construction hazards) and to ensure the Proponent's policy and applicable regulations are met (e.g., Canada Labour Code, *Transportation of Dangerous Goods Act* and *Regulations, Workplace Hazardous Materials Information System Regulations,* Environmental Protection and Safety Management Program) ▪ Use signage, natural barriers, fencing ▪ A comprehensive and detailed program to effectively restrict unsupervised access to the RoW during construction would be developed in consultation with the construction contractor. This plan has not yet been developed as the contractor would not be hired until early 2007. However, the following methods would be incorporated into the program: signage; 24-hour security; and notice to schools, churches, community centres and recreation users.
Temporary restrictions on watercourses deemed navigable	▪ Signage would be implemented warning boaters and fishers of work in progress in the project area ▪ Approval from the Minister of Transport (Transport Canada) under the *Navigable Waters Protection Act* would be obtained

Potential Adverse Environmental Effect	EBPC's Proposed Standard Design or Mitigation Measures
Temporary restricted access to hunting, fishing, biking, ATV use locations, and other recreational areas	▪ Existing access across the RoW would be maintained during construction with only very minor temporary interruptions ▪ All trail systems, including the system in Rockwood Park, would only be partially affected in the vicinity of the construction activities and would be fully restored once construction is completed ▪ All areas to be affected by pipeline construction activities would be restored following the completion of construction and EBPC's anticipated that current recreational activities would resume after clean-up ▪ Shamrock Park may be used as a staging area for the Saint John River HDD; however, that work is planned for the winter of 2007/2008 when recreational use of the Park is limited and it is anticipated that the soccer and baseball fields would be restored for use in the summer of 2008
Disruption of agricultural operations	▪ The topsoil layers would be removed and piled separately during construction, and replaced during site restoration ▪ In any location where the topsoil has to be stored for extended periods, or over winter, it will be protected from wind and water erosion by covering it with hay mulch and seeding ▪ Farmers/landowners whose agricultural fields are within the eventually selected 30 m RoW would be compensated for lost production during the construction phase of the Project ▪ Areas with crop growth that are directly affected by construction activities may experience reduced crop yields for a brief period after construction. EBPC would work with farmers/landowners to monitor any residual crop loss and, if required, implement additional mitigation in order to return the land to its pre-construction capacity. Farmers/landowners would be compensated for reduced crop yields during this post-construction period.
Traffic interruptions	▪ EBPC and its construction contractors would work with City officials and local law enforcement officials to minimize traffic interruptions and ensure that traffic continuity is maintained, if periodically slowed down ▪ A traffic management plan would be developed for the access areas to both HDD sites. The development of this plan may warrant consultation with City of Saint John officials. ▪ Along major transportation corridors such as Route 1, or at corridors with high traffic volumes such as Rothesay Avenue, the pipeline would likely be installed by bore (i.e., placed under the road with no interruption to traffic) ▪ Any temporary traffic disruptions would be coordinated with the appropriate municipal or provincial authorities and would meet all applicable bylaws or regulations. At no time would access to any area be completely cut off. Alternate access, if required, would always be available in case of emergency. ▪ Site restoration would immediately follow pipeline installation
Increased stresses on residents	▪ EBPC would develop and implement an Environment, Health & Safety Policy that establishes its commitment to protecting the environment, and ensuring the health and safety of its employees, customers and members of the public. ▪ An Environmental Management Framework, comprised of a Pipeline Design and Quality Assurance Program, an Environmental Protection and Safety Management Program, an Emergency Preparedness and Response Program, and a Public Awareness Program, would be implemented to ensure that the Proponent's Environment, Health & Safety Policy objectives are achieved. Specific plans and procedures would be prepared within this Environmental Management Framework to mitigate potential

Potential Adverse Environmental Effect	EBPC's Proposed Standard Design or Mitigation Measures
	adverse environmental effects to public and worker health and safety identified from the assessment of project activities. ▪ EBPC emergency planning, first responder training and public education would be subject to NEB requirements under the OPR and CSA Z731 ▪ EBPC would engage the Saint John Fire Department (SJFD) and other first responders in southern NB in the development and finalization of an Emergency Response Plan. This plan would be compliant with regulatory requirements and achieve the concurrence of the SJFD. ▪ Higher grades of steel together with the thicker wall pipe would be used in built-up areas, which means that design parameters would exceed code requirements in many areas. This would give the Brunswick Pipeline a safety factor greater than that required by the applicable Codes. ▪ EBPC's consultation efforts would continue through the development of the detailed route within the preferred corridor, and the operations phase of the Project.
From accidents and malfunctions: Contamination of soil and water resources Sedimentation of watercourses Damage to vegetation and to wildlife habitat, and reduced air quality, in the event of a fire	▪ Handle fuel and other hazardous material in compliance with the *Transportation of Dangerous Goods Act* and *Workplace Hazardous Materials Information System*, away from vulnerable areas ▪ Set out spill response procedures in the EPP and Field Emergency Response Plan ▪ Implement and inspect sediment and erosion control measures, with particular attention during and after extreme precipitation events, and take remedial action where necessary ▪ Use procedures to prevent fires, and train workers and contractors in fire prevention and response
Erosion of pipeline cover during operation from severe rainfall or flooding Damage to pipeline from seismic activity	▪ Design pipeline in accordance with CSA Z662 Standard taking into account environmental stresses such as earthquakes ▪ Implement EBPC's Quality Assurance Program ▪ Include actions to respond to environmental perturbations in development of a Maintenance Safety Manual
Damage to the pipeline through subsidence related to a sinkhole	▪ Complete a detailed geotechnical evaluation along the proposed RoW ▪ Avoid areas where subsidence or sinkholes are a concern
Danger to personnel and damage to coatings and pipe from fault currents resulting from lightning or upset conditions of electrical facilities inducing electrical potential in the pipe	▪ Design and construct Project to meet requirements of CSA Z662, CSA-C22.3 No. 6 Principles and Practices of Electrical Coordination between Pipelines and Electric Supply Lines
EBPC's ESEA and Environmental Manual for Construction specify further details on standard mitigation.	

Views of the Board

The Board finds that for this Project, if EBPC follows the above-mentioned standard design or mitigative measures, these potential adverse environmental effects are not likely to be significant. Further, should the recommendations in section 9.2 be included as conditions of approval in any Certificate that the NEB may issue, implementation of the design and mitigation measures would be assured.

7.2.4 Detailed Analysis of Potential Adverse Environmental Effects

The discussion in these sections includes a summary of mitigation measures committed to by EBPC. The Board expects that detailed mitigation measures would be provided by EBPC in its EPP and other documents as part of its Environmental Management Framework as discussed in section 7.2.1.

7.2.4.1 Loss of Species at Risk or Species of Conservation Concern/Loss of Critical Habitat for these Species

Background/Issues	Based on existing surveys for the SJL and additional surveys carried out for the Project, the Applicant identified several Species at Risk or Species of Conservation Concern with the potential to inhabit areas on or near the project corridor, as noted in section 4.1. EC recommended that baseline information on Species at Risk and Species of Conservation Concern, which may be impacted by the Project, be provided and that appropriate mitigation and monitoring measures be identified. EBPC completed additional surveys in 2005 and 2006, the results of which were submitted to the Board, EC and NBDOE on 15 January 2007. The additional surveys examined fish and fish habitat, rare plants, wetlands, and birds, and visual observations were noted of wildlife Species of Conservation Concern during the biological fieldwork. EBPC's analysis indicated that no new results warranted additional mitigation above that already set out in its application. Any species of concern that were identified during these surveys and any additional mitigation for Species at Risk or Species of Conservation Concern would be included in the EPP. EBPC indicated that it would consult with regulatory agencies, including EC, in 2007 following the submission of the survey results with respect to any specific issues and mitigation to be developed. As part of its evidence, FORP submitted the results of surveys for rare aquatic vascular plants in Rockwood Park, data from the Atlantic Canada Conservation Data Centre about occurrences of rare and endangered fauna and flora in or near the preferred corridor in the City of Saint John, and a report on damselflies and dragonflies in Rockwood Park.
Mitigation Measures	EBPC committed to the following: ▪ Avoiding environmentally sensitive areas and Species at Risk and Species of Conservation Concern by route selection ▪ Limiting areas of disturbance ▪ Developing site-specific EPP measures to protect Species at Risk and Species of Conservation Concern ▪ Including vascular plant Species at Risk and Species of Conservation Concern in employee awareness training ▪ Flagging or fencing environmentally sensitive areas prior to commencement of construction (including clearing)

	▪ Field identifying and flagging critical Atlantic salmon spawning and rearing habitat in watercourse 109 (Dennis Stream) with Atlantic Salmon Federation personnel ▪ Avoiding critical Atlantic salmon spawning and rearing habitat in watercourse 11 (Dennis Stream) in consultation with DFO ▪ For isolated watercourse crossings, isolating work area and ensuring no wood turtles present before commencing work ▪ Checking open trenches for wildlife, such as wood turtles, prior to backfilling ▪ Conducting majority of clearing and site preparation work in winter months ▪ Confining clearing and grubbing to 30 m-wide RoW ▪ Minimizing footprint of temporary workspaces within forested areas ▪ Minimizing grubbing and grading within 30 m of all streams ▪ Establishing new RoW adjacent to existing linear developments and areas of disturbance (approximately 66% of preferred corridor includes existing RoWs) ▪ Working with appropriate regulating agency to develop any additional mitigation measures based on fish and fish habitat surveys, vegetation surveys and bird surveys conducted late 2006, and including these measures in the EPP ▪ Working with EC and provincial representatives to develop any mitigation measures for any Species at Risk identified during construction

Monitoring	EBPC committed to the following:
	▪ Inspections of open pipeline trenches to ensure that no wildlife (particularly herpetiles) become trapped or buried in the trenches
	▪ To address the potential for sedimentation to affect fish species, surface water compliance monitoring would consist of the following core elements for all wet-crossings, HDDs, dry-crossings rated as having medium or high sensitivity fish habitat (as outlined in applicable permits), and as determined in consultation with provincial and federal agencies:
	  ▪ Sampling of total suspended solids when precipitation events result in the visible overland flow of water;
	  ▪ Regular sampling of pH in watercourses where interaction with sulphide-bearing rock has been identified;
	  ▪ Inspection of all sediment and erosion control measures;
	  ▪ Inspection of hazardous materials storage areas (including potential sediment generating materials);
	  ▪ Inspection of temporary bridge structures for verification of correct installation, and for subsequent signs of erosion or degradation;
	  ▪ Development and maintenance of a log of erosion-prone areas; and
	  ▪ Exceedance thresholds (e.g., CCME Guidelines) and remedial actions.
	▪ Monitoring at meter stations and other station facilities for the potential environmental effects of herbicide use to vascular plant Species at Risk or Species of Conservation Concern

Follow-up Programs	EBPC has committed to developing a follow-up program to assess the effectiveness of proposed mitigation for fish and fish habitat with the following objectives: ▪ verify that mitigative strategies used during construction, operation and maintenance have been effective; ▪ determine the total amount of HADD that occurred as a result of the Project; ▪ verify that HADD compensation is completed effectively; and ▪ identify the need for any additional HADD compensation.

NEB Evaluation of Significance	Frequency	Duration	Reversibility	Geographical Extent	Magnitude
	Low	2	Reversible	2	Low
	Adverse Effect				
	Not likely to be significant				

Views of the Board

The Board notes that EBPC has committed to including project-specific mitigation measures for fish, wildlife (including birds), and vegetation Species at Risk and Species of Conservation Concern, as identified in the 2006 surveys, in the EPP. The Board expects EBPC to develop mitigation in consultation with the appropriate regulatory agencies, specifically EC, DFO and provincial departments as appropriate.

If the Project were to receive regulatory approval, the Board recommends that the following conditions be imposed:

- as part of the recommendation to submit an EPP outlined in section 7.2.1 above, the EPP shall address site-specific plans for habitat harboring Species at Risk and of Conservation Concern where it cannot be avoided; and
- EBPC shall file with the Board for approval, at least sixty days prior to construction, follow-up programs as required by the CEA Act. A program shall be designed to verify the accuracy of the EA predictions and to assess the effectiveness of mitigation for fish and fish habitat as outlined in the Brunswick Pipeline Project ESEA (Volume 1). Copies of all correspondence demonstrating consultation with the appropriate regulatory agencies and stakeholders shall be included in the submission to the Board. The follow-up program shall include a schedule for the submission of follow-up reports to the Board and the results of the follow-up program shall be filed with the Board based on that schedule.

Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations B (3), C and P.

Given the proposed mitigation measures, including avoiding environmentally sensitive areas, Species at Risk and Species of Conservation Concern by route selection within the corridor, EBPC's commitment to work with appropriate regulatory agencies in developing additional specific mitigation and to include additional specific mitigation in its EPP, and the above recommendations of the Board, the Board concludes that the Project is not likely to result in significant adverse effects to Species at Risk or Species of Conservation Concern.

7.2.4.2 Unauthorized Access to RoW

Background/Issues	Unauthorized access by ATVs was identified by EBPC as a potential interaction as a result of the Project. Potential adverse environmental effects include: change in quality of surface water, wetlands, fish habitat, vegetation habitat and wildlife habitat and direct mortality of fish, vegetation and wildlife. EBPC noted that human disturbance by ATVs was an environmental effect noted through monitoring studies of wetlands carried out on the SJL. Unauthorized access to the RoW was raised as a concern in several comments from the public. Various parties voiced concern over the impact ATV access may have to wetlands, vegetation, water resources, fish and fish habitat, and wildlife and wildlife habitat along the pipeline RoW. EBPC objected to a possible Certificate condition, circulated by the Board in advance of the oral portion of the hearing, which would require EBPC to file an Access Management Plan should the Project receive regulatory approval. EBPC argued that it has committed to address the issue of unauthorized ATV RoW access, reassess the effectiveness of the initial response, and refine its approach on an as-needed basis. Based on these commitments and in light of other anticipated Certificate conditions that would compel EBPC to implement these commitments, EBPC argued that the Access Management condition would be duplicative and unnecessary.
Mitigation Measures	EBPC indicated that measures to control access typically employed include installation of natural barriers using the natural topography to advantage (e.g., placement of rock barriers, planting of tree and shrub barriers), fencing and posting of signs prohibiting trespass. EBPC committed to developing specific measures to mitigate unauthorized access to the RoW after the detailed pipeline route has been selected and after discussions with landowners, stakeholders and regulatory agencies. EBPC also indicated that its Public Awareness Program would include a discussion of trespass and the potential consequences of unauthorized or unlawful entry onto properties along the RoW. EC recommended that EBPC prepare a plan to prevent, monitor, report and remediate damage from ATV access to wetlands that reflects lessons learned from the SJL experience. Such a plan should also include the following elements: ▪ site-specific measures to prevent ATV use in wetlands along the RoW; ▪ provisions for ensuring that revegetated areas around wetlands damaged by ATV use are routinely monitored and restored as appropriate; and ▪ identification of the long-term threats posed by unauthorized access to the RoW, taking into account that once ATV trails have been established, access could continue post-decommissioning. EBPC acknowledged that the main lesson learned from the experience to date, such as with the SJL, is that one type of control measure does not fit all scenarios. These measures must be tailored to the site conditions, landowner preferences, and the severity of undesired ATV traffic. Site-specific measures to address ATV traffic would be noted in the EPP.
Monitoring	EBPC committed to routinely monitoring the pipeline RoW for unauthorized activities during the course of the project operation and maintenance phase. If unauthorized activities in the RoW were detected, additional measures to stop or discourage unauthorized activities would be implemented after discussions with landowners, stakeholders and regulatory agencies, as appropriate. EC indicated that it was unclear whether information collected through the monitoring program would be collected at regular intervals and provided to the appropriate federal and provincial government authorities for review.
Follow-up Programs	EBPC did not commit to developing a follow-up program specifically for access management.

NEB Evaluation of Significance	Frequency	Duration	Reversibility	Geographical Extent	Magnitude
	High	5	Reversible	1	Low
	Adverse Effect				
	Not likely to be significant				

Views of the Board

If the Project were to receive regulatory approval, to ensure that EBPC designs an effective Access Management Plan that would be implemented, monitored and reported on, the Board recommends that the following conditions be imposed:

- EBPC file with the Board for approval, at least thirty days prior to the planned start of construction, a project-specific Access Management Plan that includes:
  a. EBPC's goals and measurable objectives regarding the Access Management Plan;
  b. the methods and procedures to be used to achieve the mitigation goals;
  c. the criteria to determine if the mitigation goals have been met;
  d. the frequency of monitoring activities along the right of way;
  e. a description of the adaptive measures that would take place in the event that access management measures are ineffective; and
  f. evidence of consultation with relevant regulatory authorities and landowners that either confirms satisfaction with the proposed mitigation or summarizes any unresolved issues with the proposed mitigation.

Construction shall not commence until EBPC has received approval of its Access Management Plan from the Board.

- EBPC file with the Board for approval, at least sixty days prior to construction, follow-up programs as required by the CEA Act. A program shall be designed to verify the accuracy of the EA predictions and to assess the effectiveness of mitigation for access management as outlined in the Access Management Plan. Copies of all correspondence demonstrating consultation with the appropriate regulatory agencies and stakeholders shall be included in the submission to the Board. The follow-up program shall include a schedule for the submission of follow-up reports to the Board and the results of the follow-up program shall be filed with the Board based on that schedule.

Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations C, G and P. For the purpose of clarity, the

term “construction” as used in the Board’s recommendations, and throughout this document, includes all clearing activities.

Although EBPC provided a comment that the first recommendation would be duplicative based on commitments already made by EBPC, unauthorized ATV access to the RoW resulted in adverse effects on the SJL and is cause for concern for several parties. The Board is of the view that the elements of the recommended condition set out specific requirements for information to be filed that are more explicit than that previously committed to by EBPC. It is up to EBPC to determine how it meets the condition and how it structures the Access Management Plan within or separate from other documents, such as its EPP. The Board has removed one requirement under the first recommendation from the version circulated for comment related to a schedule of expected reporting to the Board on the progress and success of the measures implemented. This requirement would be duplicative of the requirements in the second recommendation.

The Board notes EC’s concern about whether information collected as part of EBPC’s monitoring program would be regularly collected and filed with appropriate government authorities. As part of the second recommendation, the Board expects that EBPC would consult with relevant authorities on the development of the follow-up program and would develop a schedule for such filing of results in the follow-up program design.

Given the proposed mitigation measures and the above recommendations of the Board, the Board finds that the Project is not likely to result in significant adverse effects as a result of unauthorized access to the RoW.

7.2.4.3 Acid Rock Drainage

Background/Issues	EBPC acknowledged that Acid Rock Drainage (ARD) is an issue with potential impacts on water resources and aquatic life. Exposure of sulphide-bearing rock as a result of construction activities can result in acid drainage that can degrade water quality of down-gradient water. Approximately 64% of the urban portion of the corridor and approximately 67% of the rural portion of the corridor passes through potential sulphide-bearing rock. EBPC submitted an ARD Management Plan, included as Appendix D of the Duke Energy Gas Transmission Manual for Construction Projects, that sets out mitigation measures to control ARD. EBPC would carry out a detailed drilling and sampling program to delineate the potential acid rock generating formations along the corridor. NRCan submitted comments and recommendations regarding ARD. EBPC responded to all of these comments and recommendations. EBPC agreed that the best strategy is to avoid disturbing highly reactive rocks and committed to considering this approach where appropriate. EBPC committed to correcting errors and inconsistencies in the ARD Management Plan and resubmitting it to NRCan and other regulatory authorities. EC recommended that a project-specific ARD Management Plan be developed including the following:

	▪ the results of geophysical work and sampling, and identification of specific areas containing sulphide-bearing rock presenting an ARD risk; ▪ a description of options for disposing sulphide-bearing rock off-site if necessary (e.g., scenarios involving significant quantities of rock); and ▪ a water quality monitoring program that describes sampling sites, outlines requirements for the collection of baseline and effects data (e.g., timing, parameters, frequency), and provides for a review of monitoring needs after one year of post-construction sampling and analysis. In response, EBPC indicated that the results of geophysical investigation would be presented to regulatory authorities as appropriate. EBPC provided discussion of options for disposal of sulphide-bearing rock off-site. EBPC indicated that groundwater and surface water quality monitoring was set out in its ESEA. EC also recommended that a post-construction review of plan effectiveness be conducted and the results reported. EBPC agreed to this recommendation. Health Canada made a recommendation regarding specific parameters to be analysed as part of groundwater monitoring. EBPC agreed with this recommendation. EBPC committed to: ▪ completing and submitting detailed geotechnical studies and related sampling to determine the areas of ARD potential to the Board, NRCan and any other appropriate regulating agency; ▪ submitting an updated version of their ARD Management Plan, based on NRCan's comments, to NRCan and the Board; and, ▪ undertaking a post-construction review of the ARD Management Plan and providing results to regulatory agencies.
Mitigation Measures	EBPC committed to the following: ▪ Conducting a drilling and sampling program with emphasis on bedrock areas near domestic water wells and in designated Watershed Protection Areas that present an acidic drainage risk ▪ Taking an inventory of water wells within 500 m and down-gradient of the acidic drainage risk zones ▪ Collecting baseline water samples for pH, aluminum (Al), iron (Fe), manganese (Mn), arsenic (As), copper (Cu), zinc (Zn), alkalinity, and sulphate for wells within 100 m of excavation zones in acid-generating bedrock and for watercourses in designated Watershed Protection Areas where the detailed RoW is within 250 m of a watercourse in acid-generating bedrock ▪ Carrying out excavation work and disposing of waste rock materials in accordance with appropriate regulatory guidelines, such as the *Nova Scotia Sulphide Bearing Material Disposal Regulations* ▪ Minimizing over-break of bedrock during excavation blasting ▪ Minimizing the extent of excavations in acid-generating bedrock areas ▪ Diverting surface water and shallow groundwater away from excavation in acid-generating bedrock areas ▪ Minimizing the volume of sulphide-bearing material requiring storage or disposal (e.g., by minimizing excavation, using excavated materials as backfill with capping where possible, and adjusting trench blasting activities to minimize over-breakage) ▪ Isolating the mineralized portion of the trench with impermeable fills ▪ Minimizing groundwater through flow along trenches using impermeable plugs or barriers ▪ Remediating any affected wells by deepening the well, using grouted casing or liners, or replacing the well and ▪ Engaging a qualified professional to conduct an initial screening for evidence of

<table>
<tr><td></td><td>acidic drainage (drop in pH or visual evidence of iron precipitate) within seven days of the implementation of acid rock mitigation
Additional details regarding ARD about mitigation measures to be used were provided by EBPC in its ARD Management Plan.</td></tr>
<tr><td>Monitoring</td><td>EBPC committed to the following.
Pre-construction monitoring of all water wells identified within 500 m and down-gradient of the acidic drainage risk areas would be located and documented on appropriate maps.
Pre-construction monitoring of all water wells within 100 m of Project RoW (when determined) and down-gradient of bedrock excavation zones in acidic drainage risk areas would have baseline water samples collected for pH, Al, Fe, Mn, As, Cu, Zn, alkalinity, and sulphate.
Post-construction monitoring within ARD areas that coincide with residential wells along the preferred corridor, the nearest down-gradient residential well within 500 m of the RoW would be used as a monitoring well. This well would be checked on a quarterly basis for two years for general chemistry in order to identify any changes in groundwater quality that might be indicative of acidic drainage.
Post-construction monitoring in areas where bedrock with ARD potential were exposed within 250 m of a watercourse within a designated Watershed Protection Area, quarterly monitoring for ARD indicator parameters would be done for two years for general chemistry in order to identify any changes in stream water quality that might be indicative of acidic drainage.</td></tr>
<tr><td>NEB Evaluation of Significance</td><td><table>
<tr><td>Frequency</td><td>Duration</td><td>Reversibility</td><td>Geographical Extent</td><td>Magnitude</td></tr>
<tr><td>High</td><td>3</td><td>Reversible</td><td>1</td><td>Low</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Not likely to be significant</td></tr>
</table></td></tr>
</table>

Views of the Board

As a result of the concern from interested parties, RAs and FAs about the potential for acid rock drainage and its effects, if the Project were to receive regulatory approval, the Board recommends that the following condition be imposed:

- As part of the recommendation to submit an EPP outlined in section 7.2.1 above, the EPP shall address project-specific acid rock drainage mitigation measures.

Therefore, the Board has included a recommendation to this effect in section 9.2 as recommendation B(4).

The Board expects that the measures set out in the EPP to address ARD would be included in EBPC's revised ARD Management Plan, and that this Plan would be provided to NRCan, EC and other regulatory authorities being consulted on the EPP. The Board also notes that a post-construction review of the ARD Management Plan's effectiveness would be conducted and submitted to the appropriate regulatory agencies.

Given the proposed mitigation measures and the above recommendations of the Board, the Board finds that the Project is not likely to result in significant adverse effects as a result of ARD.

7.2.4.4 Loss of Wetland Function

Background/Issues	Eighty wetlands were identified during desk-top studies and field studies as occurring within the preferred corridor with approximately 800 ha of total area occupied by wetland habitat. EBPC submitted that studies conducted for the NB Power IPL and for the SJL contain sufficient biophysical information for the purposes of completing wetland functional analysis reports. EBPC completed additional wetland surveys in 2005 and 2006, the results of which were submitted to the Board, EC and NBDOE on 15 January 2007. These additional surveys provided the remainder of the information required to complete wetland functional analysis reports. Wetland function may be lost during various construction activities: site preparation, pipe installation, watercourse crossings and temporary ancillary structures and facilities. EC and NBDOE have set goals for no net loss of wetland function.
Mitigation Measures	EBPC committed to the following: ▪ Avoidance of wetlands by route selection, wherever practicable ▪ Limiting area of disturbance ▪ Developing a crossing and rehabilitation plan for wetlands, to be included in the EPP, that assesses alternative construction methods to minimize impacts to wetlands to protect wetland function ▪ Obtaining WAWA permits and following permit conditions, including compensation to ensure no net loss of wetland function ▪ Obtaining approval to blast from DFO and following DFO's blasting guidelines ▪ Maintaining water flow and drainage within or across wetland ▪ Using designated roadways and access; limit off-road activity ▪ Avoiding locating temporary work areas in wetland, where practicable ▪ Stockpiling surface wetland soils separately and then return them to wetland ▪ Avoiding seeding in and within 30 m of wetland ▪ Using cleaning stations for equipment and vehicles where required to reduce the spread and introduction of invasive species of plants ▪ Avoiding directing runoff water flow toward wetland ▪ Using erosion control measures ▪ Storing fuel at least 100 m from wetlands ▪ Refueling at least 30 m from wetlands ▪ Installing trench plugs in open trench to avoid water flow along the trench ▪ Restricting herbicide use during pipeline operation to fenced area of valve sites and using herbicide of short persistence and low ecological toxicity ▪ Using measures to address unauthorized access to the RoW by off-road vehicles (discussed in Table 7.2.4.2)
Monitoring and Follow-up Programs	EBPC committed to developing a follow-up and monitoring program for wetlands in consultation with regulatory authorities. EBPC recommended wetlands post-construction monitoring (typically at one, three, and five years after construction) to assess issues such as wetland hydrology, introduction of invasive plant species and use by ATVs. Beyond the wetland monitoring, operations and maintenance personnel would monitor the entire length of the pipeline system (including wetlands) to identify any issues. Details of monitoring and surveillance during operations and maintenance would be included in the

<table>
<tr><td></td><td>Operations and Maintenance Manual.
EC recommended that:
▪ a monitoring, mitigation and maintenance program associated with construction activities in wetland areas be undertaken, and that monitoring and maintenance continue as necessary until wetland functions are restored to a pre-construction state; and
▪ a plan for compensating for unavoidable loss of wetlands be prepared taking into account federal and provincial wetland conservation policies, as applicable.
EBPC committed to meeting with EC and provincial representatives to discuss information gathered on wetlands. It also committed to discussing compensation for loss of wetland function with EC and the Province after the proposed five-year monitoring period.
In its final argument, EC reiterated that wetland monitoring should continue until wetland functions are restored, as opposed to the five-year limit proposed by EBPC. EC also reiterated that a plan for compensating for unavoidable loss of wetlands be prepared, and was not satisfied with EBPC's commitment to only address losses identified following completion of a five-year monitoring program.</td></tr>
<tr><td>NEB Evaluation of Significance</td><td>
<table>
<tr><td>Frequency</td><td>Duration</td><td>Reversibility</td><td>Geographical Extent</td><td>Magnitude</td></tr>
<tr><td>Low</td><td>1</td><td>Reversible</td><td>1</td><td>Low</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Not likely to be significant</td></tr>
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</td></tr>
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Views of the Board

If the Project were to receive regulatory approval, the Board recommends that the following conditions be imposed.

- As part of the recommendation to submit an EPP outlined in section 7.2.1 above, the EPP shall address site-specific construction plans for wetlands where they cannot be avoided; and

- EBPC file with the Board for approval, at least sixty days prior to construction, follow-up programs as required by the CEA Act. A program shall be designed to verify the accuracy of the EA predictions and to assess the effectiveness of mitigation for wetlands as outlined in the Brunswick Pipeline Project ESEA (Volume 1, p. 350). Copies of all correspondence demonstrating consultation with the appropriate regulatory agencies and stakeholders shall be included in the submission to the Board. The follow-up program shall include a schedule for the submission of follow-up reports to the Board and the results of the follow-up program shall be filed with the Board based on that schedule.

Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations B (2), C and P.

In developing site-specific plans for wetlands in its EPP and in designing the follow-up program for wetlands, the Board expects that EBPC would consult with EC and NBDOE. It would be appropriate that the follow-up program schedule and associated reporting schedule be designed to address any effects that may endure beyond EBPC's proposed five-year monitoring period. The follow-up program should also set out a process for establishing compensation for unavoidable loss of wetlands identified during the implementation of the follow-up program.

Given the proposed mitigation measures and the above recommendations of the Board, the Board concludes that the Project is not likely to result in significant adverse effects to wetlands.

7.2.4.5 Biophysical Effects to Rockwood Park

<table>
<tr><td>Background/Issues</td><td>Biophysical effects in Rockwood Park would be similar to the biophysical effects throughout the RoW previously addressed in Table 7.2.3. However, concerns were raised by many interested people around effects specific to Rockwood Park. Among the comments received from the public, concerns were expressed regarding industrial development occurring in land designated for use as a park and potential effects in Rockwood Park on surface water, wildlife and caves.
FORP, as part of its evidence submitted to the Board, filed the following studies or reports:
▪ Rare aquatic vascular plants of Rockwood Park;
▪ Odonata of Rockwood Park;
▪ Atlantic Canada CDC Data Response – rare flora and fauna in study area;
▪ Geological Considerations vis-à-vis the proposed siting of a natural gas pipeline through Rockwood Park; and
▪ Status and Conservation of Dissolution Caves in Rockwood Park.
In response to FORP's evidence, EBPC indicated that it consulted with the Horticultural Society and the City, which together have responsibility for the Park. Consultation resulted in the proposal of specialized construction plans and improvements within the Park that would enhance public access and enjoyment in the future. EBPC also indicated that it is prepared to endow the Park with a grant to fund Park improvements and future Park operations should the preferred corridor be approved.</td></tr>
<tr><td>Mitigation Measures</td><td>EBPC committed to the following:
▪ Mitigation measures for minimizing environmental effects on biophysical elements consistent throughout the Project (refer to Tables 7.2.3, 7.2.4.1-7.2.4.4)
▪ Developing a specialized construction plan for the Park</td></tr>
<tr><td>Monitoring</td><td>EBPC committed to the following:
▪ Monitoring as described in section 7.1 and Tables 7.2.4.1 through 7.2.4.4
▪ Additional monitoring would be addressed in the EPP</td></tr>
<tr><td>Follow-up Programs</td><td>EBPC did not propose a follow-up program specific to Rockwood Park.</td></tr>
<tr><td>NEB Evaluation of Significance</td><td>
<table>
<tr><th>Frequency</th><th>Duration</th><th>Reversibility</th><th>Geographical Extent</th><th>Magnitude</th></tr>
<tr><td>Medium</td><td>2</td><td>Reversible</td><td>2</td><td>Low</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Not likely to be significant</td></tr>
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Views of the Board

In light of the concerns raised with respect to Rockwood Park, if the Project were to receive regulatory approval, the Board recommends that the following conditions be imposed:

- as part of the recommendation to submit an EPP outlined in section 7.2.1 above, the EPP shall address a construction and reclamation plan for Rockwood Park with evidence demonstrating consultation with stakeholders; and

- EBPC shall file with the Board for approval, at least sixty days prior to construction, follow-up programs as required by the CEA Act. A program shall be designed to verify the accuracy of the environmental assessment predictions and to assess the effectiveness of mitigation used for the reclamation of Rockwood Park. Copies of all correspondence demonstrating consultation with the appropriate regulatory agencies and stakeholders shall be included in the submission to the Board. The follow-up program shall include a schedule for the submission of follow-up reports to the Board and the results of the follow-up program shall be filed with the Board based on that schedule.

Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations B (5), C and P.

Given the proposed mitigation measures and the above recommendations of the Board, the Board finds that the Project is not likely to result in significant adverse effects as a result of biophysical effects to Rockwood Park.

7.2.4.6 Disruption to Recreational Pursuits in Rockwood Park

Background/Issues	Rockwood Park is a popular destination for Saint John residents and visitors. In various seasons, Rockwood Park offers the following attractions: Kiwanis Playpark at Fisher Lakes; Rockwood Park Municipal Golf Course & Aquatic Driving Range; Rockwood Park Campground; Cherry Brook Zoo & Vanished Kingdom Park; beaches at Fisher Lakes and Lily Lake; hiking, biking, cross-country skiing, and running trails; picnic sites at Fisher Lakes and throughout the wilderness zone of the Park; Rockwood Stables & Turn of the Century Trolleys; and horseback riding.
Mitigation Measures	EBPC committed to developing a specialized construction plan for Rockwood Park in collaboration with the stewards of the Park and other stakeholders. During construction, trails that cross the RoW may be temporarily disrupted during pipe installation but the existing topography and surface would be restored to the extent practicable, and other mitigation measures would be implemented in consultation with the Saint John Horticultural Society, the City of Saint John (Leisure Services), and other stakeholders. Certain activities within or near the proposed pipeline RoW (e.g., campfires, excavations, installation of fence posts) would require that the Proponent be notified in advance of the

<table>
<tr><td></td><td>activity, in accordance with the OPR, to ensure that the activity does not compromise the integrity of the pipeline.
There would be no above-ground obstructions or features in the RoW that would limit access to any of the Park's trails or facilities.
The existing topography of the land within the Park adjacent to the power transmission line RoW would be restored to the maximum extent practicable.</td></tr>
<tr><td>Views of the parties</td><td>Numerous Intervenors, oral statement makers, and letters of comment raised serious concerns regarding the disruption to recreational pursuits in Rockwood Park including, for example: industrial development not enhancing a nature sanctuary, horse riding trails being negatively impacted by the pipeline, and use of trails with blasting, bulldozers and heavy equipment all around.</td></tr>
<tr><td>Views of EBPC</td><td>According to EBPC, activities that currently occur in the Park would not be altered after construction, and all recreational activities that currently occur in Rockwood Park, in any season, would be allowed to continue during the operation and maintenance phase of the Project.
EBPC stated that it is prepared to endow Rockwood Park with a grant to fund Park improvements and future Park operations, should the preferred corridor be accepted and the pipeline built.
EBPC argued that the environmental studies and mitigation regarding the protection of the environment, as well as the protection of members of the public using Rockwood Park, further the preservation of the current activities within Rockwood Park. As well, participation of the Park stakeholders regarding the restoration of the proposed RoW in Rockwood Park may serve to enhance the current activities taking place within the Park.</td></tr>
<tr><td>NEB Evaluation of Significance</td><td>
<table>
<tr><th>Frequency</th><th>Duration</th><th>Reversibility</th><th>Geographical Extent</th><th>Magnitude</th></tr>
<tr><td>Low</td><td>2</td><td>Reversible</td><td>1</td><td>Low</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Not likely to be significant</td></tr>
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</td></tr>
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Views of the Board

The Board notes that some recreational pursuits in Rockwood Park would be temporarily disrupted during construction activities. These short-term disruptions would be minimized with the development, in collaboration with the stewards of the Park, of a specialized construction plan for Rockwood Park. The Board also notes that there would be minimal impacts on recreational pursuits during the operations phase of the pipeline, and it is even possible that there would be enhancements with the creation of a trust fund to provide an annual income for the Horticultural Society. Given the proposed mitigation measures, in particular the specialized construction plan for Rockwood Park, and the commitment by EBPC to establish a trust fund for the Horticultural Society, the Board finds that the proposed Project would not likely cause significant adverse effects to recreational pursuits in Rockwood Park.

7.2.4.7 Disturbance to, or Destruction of, Heritage Resources

Background/Issues	The Archaeological Services Unit (ASU) of the Heritage Branch of the NB Culture and Sports Secretariat administers archaeological resources in NB. Archaeological sites are considered to be non-renewable resources and the unauthorized disturbance of such resources may not legally take place except under strictly controlled conditions imposed by the terms of an Archaeological Field Research License, which is issued to qualified personnel by the provincial government through ASU. ASU is also responsible for approving or modifying recommended mitigation measures applied to archaeological and heritage resources. The archaeological survey work outlined in the ESEA is underway. One archaeological site has been recorded to date and the mitigation of that site has been initiated, in consultation with the ASU. This site, at Dennis Stream, has been visited by members of the MAWIW Environmental Response Team, who actively participated in the excavations. Further, reports of a Native burial ground at Point Pleasant were noted and this area was identified for archaeological testing. Testing is ongoing and results will be reported to the UNBI, MAWIW, the NEB and ASU. To date, no evidence of any burials has been encountered. The archaeology surveys are ongoing and will be completed this year or in the spring of 2007. It is anticipated that the results of these surveys will be submitted to the NEB and ASU prior to April 2007. Archaeological work undertaken in the spring of 2007 will be reported as it is completed.
Mitigation Measures	EBPC committed to the following: ▪ The entire length of the detailed route would be subject to a walkover and survey once the 30 m RoW is determined. Archaeological testing would also be conducted in areas where it is considered warranted. Where there are limitations in flexibility for watercourse crossing locations, each option would be tested prior to confirming the route. This methodology has been discussed and developed in conjunction with ASU, and is approved by the Province. This methodological approach would ensure that the majority of archaeological and heritage resources within the detailed route would be identified, recorded and mitigated prior to construction. ▪ If a significant archaeological or heritage resource were encountered within the RoW during the pre-construction survey, then appropriate mitigation would be developed in consultation with the provincial regulating agency (ASU) and implemented. ▪ Adjustment of the RoW would be considered as the preferred mitigation to avoid significant archaeological sites discovered during the detailed route. ▪ If avoidance of the resource is not practicable, then the archaeological or heritage site would be mitigated by recording, testing, and excavation, as determined by the archaeologist and in consultation with ASU. ▪ Provide opportunity for access to exposed rock to paleontologists. ▪ Areas where there are known archaeological or heritage resources located near to, but not within the boundaries of, the RoW would be demarcated and/or fenced, and the construction in the adjacent areas may require monitoring. ▪ EBPC would develop a set of archaeological protocols in the EPP to address any encounters with archaeological/heritage resources during construction, and would implement this protocol.
Monitoring	EBPC indicated that areas that still considered to have elevated potential for archaeological or heritage resources would be recommended for archaeological monitoring during the construction phase of the Project.

NEB Evaluation of Significance	Frequency	Duration	Reversibility	Geographical Extent	Magnitude
	Low	1	Irreversible	1	Low
	Adverse Effect				
	Not likely to be significant				

Views of the Board

If the Project were to receive regulatory approval, the Board recommends that the following conditions be imposed:

- EBPC shall consult with the ASU of NB on further studies and a monitoring plan for areas with high potential for heritage resources, once the locations for the detailed right of way, facility sites and temporary work space have been determined. EBPC shall file with the Board, at least thirty days prior to construction:

  a. for approval, a report that documents how archaeological and heritage resources within the detailed route have been identified, recorded and mitigated;
  b. copies of any correspondence from, or a summary of any discussions with the ASU of NB regarding the acceptability of EBPC's report and proposed mitigation measures; and
  c. for approval, a copy of any proposed monitoring plan.

- EBPC shall notify the Board, at the time of discovery, of any archaeological or heritage resources and, as soon as reasonable thereafter, file with the Board for approval a report on the occurrence and proposed treatment of the archaeological/heritage resources, any changes to the archaeological/heritage monitoring plan, and the results of any consultation, including a discussion on any unresolved issues.

Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations F and J.

Given the proposed mitigation measures, the commitment by EBPC to complete archaeology surveys, the commitment by EBPC to consult with the ASU prior to construction on further studies and a monitoring plan for areas with high potential for heritage resources, and the above recommendations, the Board finds that the Project would not likely cause significant adverse effects on heritage resources.

7.2.4.8 Noise Impacts at Milford and Pokiok

Background/Issues	The major watercourse crossing of the Saint John River in urban Saint John would require HDD, which has the potential to cause an adverse environmental effect on sound quality. An HDD is planned to cross the Saint John River from Pokiok to Pleasant Point in the City of Saint John. The Saint John River HDD would occur 24 hours per day for approximately 20 weeks, during which relatively high sound pressure levels may be experienced on a more or less continuous basis. The typical equipment required consists of a drilling rig, electric mud pumps, portable generators, mud mixing and cleaning equipment, mobile cranes, forklifts, loaders, trucks, and portable light sets.
Mitigation Measures	EBPC committed to undertake a detailed noise mitigation study and develop detailed noise mitigation and monitoring plans specific to the areas potentially affected by the HDD activity, and would submit these plans to the NEB and Health Canada at least 90 days prior to the commencement of the proposed HDD activities. Additional mitigation measures to reduce the environmental effect of the Saint John River HDD activities on sound quality include: ▪ Further predictions would be conducted (based on the mitigation design) of drilling sound levels at the nearest residences prior to the commencement of HDD at the site. ▪ The drilling rig at the Saint John River site would be partially or fully enclosed as required, and/or noise barriers would be placed around the drilling site with adequate mass, height and length to attenuate noise to below 65 dBA at the nearest receptor. The enclosures would be set up with the required opening directed away from the nearest residences so that line of sight propagation of noise would occur away from the nearest residences. ▪ The arrangement of the drilling rig and other equipment, which are major sources of noise, would be designed to maximize the distance between this equipment and the nearest residences. ▪ All construction equipment used in the area would be maintained in good working condition according to the manufacturer's instructions. Mufflers that are in good working condition or upgraded silencers (if warranted) would be used. ▪ The use and movement of ancillary equipment would be minimized during nighttime hours. ▪ A noise mitigation design would be developed following the completion of the drill site layout and estimates of sound pressure levels (based on the mitigation design) at nearby noise sensitive areas to ensure adequate mitigation is in place prior to commencing HDD activities at the Saint John River site. ▪ A program would be in place for members of the public to contact representatives of the company and express any concerns about noise, and EBPC committed to addressing those concerns. EBPC indicated that temporary relocation would only be offered as a means of mitigation as a last resort.
Monitoring	EBPC indicated that following the installation of HDD equipment and noise control measures, follow-up noise monitoring would be conducted at the nearest residences to verify the effectiveness of the mitigation. Further mitigation would be implemented in the event of unacceptable noise levels and additional monitoring would be conducted to ensure acceptable noise levels prior to the commencement of 24-hour drilling. Additional noise monitoring or mitigation may be required to address any potential complaints from residents received by the NEB, NBDOE, or EBPC, particularly during construction activities. Noise monitoring would be required to verify the effectiveness of the noise mitigation for the HDD activities. Sound pressure levels would be monitored during HDD activities, during daytime hours at the nearest residence prior to the continuation of HDD activities on a 24-hour basis.

<table>
<tr><td></td><td>In addition, spot checks of noise levels would be conducted by EBPC at the nearest residences on a periodic basis during HDD activities, to monitor the effectiveness of the implemented mitigation and to provide a basis for implementing further actions aimed at preventing significant environmental effects during construction.</td></tr>
<tr><td>Follow-up Programs</td><td>EBPC committed to developing a follow-up program to assess the effectiveness of proposed mitigation for HDD Noise Management.</td></tr>
<tr><td>Views of the parties</td><td>Several Intervenors, oral statement makers, and letters of comment raised concerns regarding the disruption to residents of Milford and Pokiok; for example, parties disagreed that short-term noise impacts associated with the directional drill, specifically 24/7 for a 4 month period, would constitute a short period.

HC raised concerns regarding noise associated with HDD activities. In a letter dated November 3, 2006, HC identified six conditions that must be met by EBPC in order for HC to be satisfied that the proposed mitigation is adequate and all reasonable measures have been implemented in order to minimize the additional noise levels that would result from intruding construction noise from HDD activities. HC also provided comments on the possible Certificate conditions, and recommended that greater detail be provided in any Certificate condition regarding noise.</td></tr>
<tr><td>Views of EBPC</td><td>EBPC committed to developing a detailed noise mitigation plan for the Saint John River HDD activity in consultation with Health Canada and other appropriate regulatory authorities. The objective of the noise mitigation is to keep people living in proximity to the HDD comfortable.

EBPC’s environmental consultants agreed that unmitigated noise from HDD activities at the Saint John River crossing could result in a significant adverse environmental effect to residents within 300 m (984 feet) of the crossing and possibly even beyond the 300 m radius. It is for this reason that extensive noise mitigation, based on sound pressure levels at the nearest residence to the crossing, was proposed in the ESEA and would be implemented throughout the duration of HDD activities. If mitigation were implemented such that sound pressure levels remained at a level that would not result in significant environmental effects to residents within 300 m of the noise source, EBPC expected that there would be no significant environmental effects to residents beyond the 300 m radius as sound due to a dominant source decreases with distance from the source.

EBPC consulted with HC regarding noise associated with the HDD activity and was in agreement with HC’s comments and recommendations on this issue. EBPC stated that it was confident that its mitigation measures would ensure its operations do not conflict with the standards reflected in the applicable bylaws within the context of the construction of the Project. EBPC argued that the Board has extensive experience with HDD operations and, together with the input provided by HC, has established acceptable standards governing this activity. Comprehensive noise mitigation for the Saint John River HDD activity would be implemented as necessary to ensure no residual adverse environmental effects and to minimize disruption to daily living for residents of Milford and Pokiok.</td></tr>
<tr><td>NEB Evaluation of Significance</td><td>
<table>
<tr><td>Frequency</td><td>Duration</td><td>Reversibility</td><td>Geographical Extent</td><td>Magnitude</td></tr>
<tr><td>Medium</td><td>2</td><td>Reversible</td><td>2</td><td>Medium</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Not likely to be significant</td></tr>
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Views of the Board

If the Project were to receive regulatory approval, the Board recommends that the following conditions be imposed:

- EBPC shall file for approval, at least ninety days prior to the start of the HDD activity proposed for the Saint John River Crossing, a detailed noise management plan containing information on day-time and night-time HDD operations at the drill exit and entrance sites, including but not limited to the following:

  a. ambient sound levels at noise-sensitive areas close to the HDD exit and entrance sites to establish a baseline for assessing potential noise impacts;
  b. predicted noise level at the most affected residences caused by the HDD without mitigation;
  c. proposed HDD noise mitigation measures, including but not limited to the following:

     - all technologically and economically feasible mitigative measures as presented in Section 5.1.7 of the Environmental and Socio-Economic Assessment (Jacques Whitford, 2006) and in the Resource Systems Engineering assessment.

     - the use of full enclosures on diesel powered units;

     - the use of quiet machinery (where feasible);

     - the undertaking of HDD activities during periods where residential windows would be expected to be closed (i.e., during winter months);

  d. predicted noise level at the most affected residences with implementation of the mitigation measures;
  e. noise contour map(s) showing the potentially affected residences at various noise levels;
  f. a noise monitoring program including locations, methodology and schedule;
  g. confirmation that residents potentially affected by HDD noise will receive contact information for EBPC in the event they have concerns about the HDD noise;
  h. a contingency plan with proposed mitigative measures for addressing noise complaints, which may include the temporary relocation of specific residents; and
  i. confirmation that EBPC will provide notice to nearby residents in the event that a planned blowdown is required and that planned

blowdowns will be completed during day-time hours whenever possible.

- EBPC shall file with the Board for approval, at least sixty days prior to construction, follow-up programs as required by the CEA Act. A program shall be designed to verify the accuracy of the Environmental Assessment predictions and to assess the effectiveness of mitigation for HDD noise management. Copies of all correspondence demonstrating consultation with the appropriate regulatory agencies and stakeholders shall be included in the submission to the Board. The follow-up program shall include a schedule for the submission of follow-up reports to the Board and the results of the follow-up program shall be filed with the Board based on that schedule.

Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations C, H and P.

Given the proposed mitigation measures, the commitment by EBPC to develop a detailed noise mitigation plan for the Saint John River HDD site with input from HC and the NEB, the commitment by EBPC to develop a follow-up program, and the above recommendations, the Board finds that the proposed Project and associated noise at Milford and Pokiok would not likely cause significant adverse effects.

7.2.4.9 Effects on the Current Use of Lands and Resources for Traditional Purposes by Aboriginal Persons

Background/Issues	Throughout project development, there were consultations regarding the Brunswick Pipeline with all NB Aboriginal organizations and communities recognized by the Government of Canada. An Aboriginal Relations Manager and organization liaison staff facilitated the consultation, which included extensive direct meetings with the Aboriginal organizations and open houses for the Aboriginal communities. To augment information gathered during the Aboriginal open houses regarding the traditional use of lands and resources within the preferred corridor, an Aboriginal firm, Aboriginal Resource Consultants, was contracted to carry out a TEK study. This study gathered Maliseet and Mi'kmaq historical knowledge of land, water and resource uses by Aboriginal people for traditional purposes in the project area. The TEK Study recommended continued site visits and continued communication of project information with Aboriginal leadership and community members.
Mitigation Measures	EBPC committed to the following: ▪ A copy of the TEK study was provided to the Maliseet and Mi'kmaq Peoples through their leadership. Further, an information dissemination strategy would be developed to ensure the leadership is kept informed on all developmental activities. ▪ A team of Aboriginal specialists would be engaged for a walk through of the RoW, once finalized in the summer of 2007, to "ground truth" any issues of concern and report on findings from this physical inspection to both the Proponent and the Aboriginal leadership.

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A strategy would be developed allowing for black ash harvested from Crown lands within the RoW to be stockpiled in an accessible location and made available to the Maliseet and Mi'kmaq.
Response protocols would be developed to provide information exchange channels allowing for the reporting of any incidents of sites of significance to the Maliseet and Mi'kmaq.

</td></tr>
<tr><td>Monitoring</td><td>EBPC was able to conclude formal agreements with both the UNBI and MAWIW. The agreements include provisions for environmental monitoring and protection of Aboriginal heritage and cultural resources.
During all construction phases where "green field" development is taking place, an Aboriginal monitor will be engaged, who has specific knowledge and experience related to traditional use and spiritual and ceremonial sites. This individual would be tasked with assisting and recommending to project personnel any findings during construction that may impact the Maliseet and Mi'kmaq people.</td></tr>
<tr><td>Views of the Parties</td><td>On 20 October 2006, the MAWIW Council of First Nations submitted a letter indicating that with the conclusion of twin agreements with M&NP and Emera, the MAWIW Council supported the Brunswick Pipeline application.
On 26 October 2006, UNBI filed a letter stating it is withdrawing as an Intervenor in the NEB hearings because it had reached a benefits agreement with EBPC.
An oral statement maker indicated that he was concerned that the Passamaquoddy had not been properly consulted since the pipeline falls in their territory, and that he read that the Passamaquoddy currently use plants harvested in and around the corridor for food and medicine.</td></tr>
<tr><td>Views of EBPC</td><td>EBPC stated that with respect to Aboriginal consultation, during early stages of Project planning, it engaged in consultations directed at securing Aboriginal support for and involvement in various project activities. Careful attention was paid to mitigating impacts upon traditional uses along the pipeline route and EBPC submitted that the process was open and inclusive. Consultations resulted in agreements with the Province's two Aboriginal organizations, both of whom indicated their support for the timely approval of the Project.
EBPC submitted that the conclusion in the Brunswick Pipeline ESEA, that there would not be any direct interaction between the Brunswick Pipeline Project and areas of traditional land and resource use that cannot be mitigated, was confirmed through the First Nation consultation program and the TEK Study. Therefore, EBPC anticipated that there would be no significant adverse environmental effects to current use of land and resources for traditional purposes by Aboriginal persons located in the area to be traversed by the pipeline.
This conclusion applied to all Aboriginal persons. While the Passamaquoddy Tribe is not a federally or provincially recognized organization, and therefore, were not included in the formal consultation process, EBPC submitted that should any of its members carry out traditional use activities in the preferred corridor, they would be similar uses, with similar resources, as the Mi'kmaq and Maliseet People of NB. There would not be significant adverse effects to current use of lands and resources for traditional purposes, if any, by members of the Passamaquoddy.</td></tr>
<tr><td>NEB Evaluation of Significance</td><td>
<table>
<tr><th>Frequency</th><th>Duration</th><th>Reversibility</th><th>Geographical Extent</th><th>Magnitude</th></tr>
<tr><td>Low</td><td>2</td><td>Reversible</td><td>2</td><td>Low</td></tr>
<tr><td colspan="5">Adverse Effect</td></tr>
<tr><td colspan="5">Not likely to be significant</td></tr>
</table>
</td></tr>
</table>

Views of the Board

If the Project were to receive regulatory approval, the Board recommends that the following condition be imposed:

- EBPC shall file with the Board, at least sixty days prior to construction, an update on the implementation of the six recommendations identified in the TEK Study (July 2006).

Therefore, the Board has included a recommendation to this effect in section 9.2 as recommendation D.

The Board notes the steps that EBPC has taken to secure support from the Mi'kmaq and Maliseet People of NB.

With respect to the Passamaquoddy First Nation, the Board notes EBPC's position that it is likely that any members of the Passamaquoddy Tribe carrying out traditional use activities in the preferred corridor would have similar uses, with similar resources, as the Mi'kmaq and Maliseet People. While consultation with potentially affected parties is an expectation for consultation programs, the Board notes that there was very limited evidence submitted during the proceeding that the Passamaquoddy Tribe would be impacted by the Project, or that it used the preferred corridor for any traditional use activities; only a brief mention of this topic was made during an individual's oral statement. Nor did the Passamaquoddy Tribe appear before the Board in any capacity. In any event, the Board concurs with EBPC's view that any current use of lands and resources for traditional purposes by the Passamaquoddy people would likely be similar to that identified for other Aboriginal persons.

The Board notes that the potential impacts of the proposed Project to vegetation, fish and fish habitat, wildlife and wildlife habitat, and wetlands are not likely to be significant, as determined in other sections of this EA Report. These findings would further mitigate any adverse effects on the current use of lands and resources for traditional purposes by Aboriginal persons. In addition, the ability for Aboriginal persons to use the lands and resources for any traditional purposes could be temporarily impacted by construction activities but would not likely be significantly impacted during the operations phase of the Project. As a final point on this topic, the Board recognizes EBPC's commitment to establishing a process through which any issues, including those that may be raised by the Passamaquoddy, could be communicated and considered by EBPC through its Aboriginal Manager.

Given the proposed mitigation measures and the above recommendation, the Board finds that the proposed Project would not likely cause

significant adverse effects on the current use of lands and resources by Aboriginal people for traditional purposes.

7.2.4.10 Potential Pipeline Leak or Rupture, and Potential Associated Fire

EBPC noted the potential for accidents and malfunctions to occur during the operation and maintenance of the Project, and addressed the potential for pipeline ruptures or leaks. Many of the comments received from the public regarding this Project were concerns about consequences of a pipeline leak or rupture and potential associated fire, concerns about access to communities in the event of an emergency and the capacity of first responders to handle an emergency.

EBPC's Environmental Management Framework is described in section 7.2.1 above. Several of the components of this framework would be applicable to preventing and responding to a pipeline leak or rupture. As part of EBPC's Pipeline Design and Quality Assurance Program, the Pipeline would be designed in accordance with the CSA Z662 standard and quality assurance would be used to reduce the probability of material defects. EBPC's Environmental Protection and Safety Management Program would include a Pipeline Integrity Program and routine pipeline monitoring and surveillance.

EBPC submitted that its Emergency Preparedness and Response Program would address: emergency response training; the scope and frequency of emergency response exercises; continuing education programs for first responders and Emergency Planning Zone (EPZ) residents; and, a formal liaison program for both lead and supporting government agencies. In order to support this program, EBPC committed to conducting a risk assessment upon completion of the detailed routing to determine the size of the EPZ for the pipeline.

EBPC submitted that its Field Emergency Response Plan (ERP) would be comprehensive and would: identify arrangements made to respond to pipeline incidents, including any mutual aid agreements made with outside agencies; outline roles and responsibilities related to emergency response; define notification and reporting requirements for incidents; and provide guidelines and site-specific emergency response procedures for operation and maintenance staff and first responders. EBPC committed to developing its ERP in consultation with the following lead agencies early in 2007:

- Transportation Safety Board of Canada;
- National Energy Board;
- New Brunswick emergency management organizations (EMO);
- Saint John EMO;
- Provincial Fire Marshall;
- Provincial and Municipal 911 Agencies;
- RCMP;
- Saint John City Police and Fire Department;
- Rural fire departments and volunteer fire brigades; and
- Ambulance brigades.

EBPC also committed to filing the ERP with the NEB well in advance of obtaining final leave of the Board to operate the pipeline.

Further, EBPC committed to implementing a continuing education program for first responders (i.e., fire departments, police, emergency management organizations) that would include the assignment of roles and responsibilities and chain of command for emergencies along the pipeline route, conducting emergency response training and mock emergency exercises, and educating applicable emergency response agencies.

EBPC committed to implementing a public awareness and education program with the intent of alerting the public of the requirements and restrictions associated with activities conducted in and around the pipeline RoW.

In response to questions from the Board regarding the location of isolation valves, emergency response capability within each line segment and reliability of the isolation valves, EBPC submitted that the Brunswick Pipeline has been designed to Class III requirements throughout its entire length within the City of Saint John in order to offer the pipeline added protection.

EBPC indicated that valve site locations were chosen on the basis of proximity to commercial power and telephone service as well as being of sufficient size to allow for the installation of all necessary infrastructure. A further consideration in the location selected for each isolation valve was year-round access by company personnel. EBPC submitted that each location provides good year-round access for both normal maintenance and for emergency response.

EBPC indicated that line block valves would use a gas-over-hydraulic actuator for closure and that this type of actuator has proven to be highly reliable with a ready fuel source (natural gas pressure within the pipeline) for actuation.

The worst case incident associated with the proposed facilities, as described by EBPC, would be a full rupture of the operating pipeline and subsequent ignition of the venting natural gas. In the event of such an incident, EBPC indicated that the line block valves immediately upstream and downstream of the line break would be closed by EBPC personnel to isolate the damaged section of pipeline from the remainder of the pipeline system. The damaged section would vent rapidly and EBPC personnel and local first responders would then continue with the execution of their respective emergency response procedures.

In light of the preferred corridor being in proximity to schools, a hospital, various businesses, and various communities, many interested people raised concerns regarding EBPC’s capability to respond to an emergency and gain access to their communities or other existing infrastructure.

In addressing these concerns, EBPC submitted that once an EPZ is determined, EBPC would work to develop an accurate database of occupied structures within the EPZ. Residents within the EPZ would be contacted through EBPCs Continuing Education Program. This program would provide information to residents within the EPZ on pipeline location, potential emergency situations, safety procedures, what to expect in the event of an emergency and the respective roles of the public, company personnel, first responders (such as fire departments), and EMOs.

In the event of a serious pipeline incident requiring evacuation, EBPC indicated that the evacuation itself would be led by first responders and EMOs, including the selection and coordination of sheltering locations, incident command centers, roadblocks, etc.

Milford area residents, in particular, raised concerns regarding emergency access to their community as the Lou Murphy overpass is the only access in and out of this area, and the pipeline corridor passes close to this overpass.

In addressing these concerns, EBPC indicated that public access to the Milford area would not be impeded in any way during the construction or operation of the Brunswick Pipeline. Furthermore, EBPC indicated that it has been assured by J.D. Irving Limited that access would be provided across its lands for emergency response vehicles and personnel should the existing access (Greenhead Road) be impeded by a pipeline incident. EBPC confirmed that J.D. Irving Limited personnel and equipment are on site 24 hours a day and could quickly open the gates for emergency assess.

EBPC addressed concerns of Intervenors with respect to public notification in the event of an emergency and areas with limited access by committing to work with first responders and EMOs to adopt, promote, or help develop methods to notify the public and to identify areas with limited access and consider alternate routes. However, EBPC noted that primary responsibility in the event of a public emergency lies with first responders.

EBPC also noted that first responders have the ability to access property in emergencies in ways that would not normally be available to the public. The arrangement reflected in the letter with J.D. Irving, for example, ensures that should City of Saint John fire trucks, police cars or emergency vehicles appear at the J.D. Irving plant gate urgently seeking access to the Milford area, they would be able to readily access that community.

In response to possible Certificate conditions circulated for comment in advance of the oral portion of the hearing, EBPC provided comments to the Board on a possible condition requiring an emergency response exercise be conducted within six months after commencement of operation. According to EBPC, it discussed the draft conditions with first responders and all parties agreed that an emergency response exercise should be conducted, but that it should be a table top exercise with the objectives of:

- verification of respective roles and responsibilities;
- verification of notification matrix; and,
- verification of practices and procedures.

EC recommended that specific elements be included in EBPC's emergency prevention and response plans. EBPC agreed to EC's recommendation.

EC also recommended that emergency prevention and response plans be consistent with the CSA publication, *CAN/CSA-Z731-03 Emergency Preparedness and Response* (CSA-Z731-03) and the *2004 Emergency Response Guidebook*. EBPC responded that its ERP would be consistent with CSA-Z731-03 and the OPR.

NEB Evaluation of Significance	Frequency	Duration	Reversibility	Geographic Extent	Magnitude
	1	1	Irreversible	1	High
	Adverse Effect				
	Not likely to be significant				

Views of the Board

EBPC's proposed Environmental Management Framework includes programs aimed to prevent a leak or rupture. In the event of a leak or rupture, EBPC has set out the programs it would have in place to respond to emergencies. These programs would be aimed at eliminating or minimizing the negative effects of a leak or rupture and include cooperating with first responders and consideration of access to communities.

With respect to EBPC's comments on the proposed condition to conduct a table top emergency response exercise, the Board concludes that EBPC should conduct a full emergency response exercise within six months of commencement of operation of the Pipeline. The Board expects that EBPC, in organizing its emergency response exercise, would identify critical locations, for example, where access and egress by first responders may be impeded, and would focus its exercise upon those locations.

The Board is of the view that table top exercises can be very effective in testing certain elements such as communications systems, the effectiveness of continuing education programs, training programs, roles and responsibilities and parts of the ERP. However, table top exercises typically would not test elements such as the actual coordination and activation of a field response, first responders and company personnel knowledge and use of equipment, site security and site layout, to name a few.

With respect to EC's recommendation that emergency prevention and response plans be consistent with the *2004 Emergency Response Guidebook*, the Board notes that EBPC committed, and is required, to meet the provisions of the OPR, including requirements for emergency preparedness and response programs. In determining compliance with the OPR's emergency preparedness and response requirements, the Board references CSA-Z731-03 and other appropriate industry standards and documents, which could include the *2004 Emergency Response Guidebook*. Companies may also directly reference documents, such as the *2004 Emergency Response Guidebook*, to the extent that they are relevant to the company's emergency preparedness and response program.

If the Project were to receive regulatory approval, the Board recommends that the following conditions be imposed:

- EBPC shall file with the Board, at least sixty days prior to operation, an Emergency Procedures Manual (EPM) for the Project and shall notify the Board of any modifications to the plan as they occur. In preparing its EPM, EBPC shall refer to the Board letter dated 24 April 2002 entitled "Security and Emergency Preparedness Programs" addressed to all oil and gas companies under the jurisdiction of the NEB.

- EBPC shall file with the Board, at least sixty days prior to operation, evidence of consultation with stakeholders identified in the EPM, including a summary of any unresolved issues identified in consultations, and evidence that the EPM addresses, to the extent possible, any issues raised during consultation.

- Within six months after commencement of operation of the Project, EBPC shall conduct an emergency response exercise with the objectives of testing:

  - emergency response procedures;
  - training of company personnel;
  - communications systems;
  - response equipment;
  - safety procedures; and
  - effectiveness of its liaison and continuing education programs.

  EBPC shall notify the Board, at least thirty days prior to the date of the emergency response exercise, of the following:

  - the date and location(s) of the exercise;
  - the participants in the exercise; and
  - the scenario for the exercise.

  EBPC shall file with the Board, within sixty days after the emergency response exercise, a report on the exercise including:

  - the results of the exercise;
  - areas for improvement; and
  - steps to be taken to correct deficiencies.

- Within six months after commencement of operation of the Project, EBPC shall file with the Board a description of the company's emergency response exercise program, including:

  - the frequency and type of exercises (full-scale, table-top, drill) it plans to conduct; and
  - how the results of any emergency response exercises will be integrated into the company's training and exercise programs.

> Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations K, L, M, and N.
>
> Given the Environmental Management Framework and the above recommendations, the Board concludes that it is unlikely that the Project would result in a pipeline leak or rupture leading to a fire. Therefore, the Board finds that the proposed Project would not likely cause significant adverse effects as a result of an accident or malfunction.
>
> Further consideration of the evidence is required by the Board in order to fulfill its mandate under the NEB Act, which will form part of the content of separate Reasons for Decision.

7.3 Cumulative Effects Assessment

7.3.1 Scope of the Project

During the comment period on the draft EA Scoping Document, the NEB received requests to expand the scope of the Project to include the Canaport™ LNG Terminal. The complete Board ruling is attached as Appendix 4. Related to the LNG Terminal, the Board ruled that

> …the Canaport™ LNG Terminal has already undergone an environmental assessment by federal authorities under the CEA Act and by the Province of New Brunswick under provincial environmental assessment regulations. Since the LNG Terminal has already been the subject of a recent environmental assessment, the Board is of the view it should not include the Canaport™ LNG Terminal or the LNG tanker activity in the scope of the project for the environmental assessment of the Brunswick Pipeline Project. To do otherwise would be contrary to one of the CEA Act's stated purposes, that being the elimination of unnecessary duplication in the environmental assessment process. In addition, assessment of a project under the CEA Act is to occur at the proposal stage. The LNG Terminal was assessed at the proposal stage and is now under construction.
>
> However, within the scope of the assessment for the Brunswick Pipeline Project set out in the draft document, the terminal and tanker traffic can still be considered to the extent that they are relevant as cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out.

7.3.2 Views of EBPC

EBPC outlined the following sequential framework that it used for the assessment of project-related cumulative environmental effects in consideration of the requirements of the CEA Act and the NEB Filing Manual:

- Describe the spatial and temporal boundaries used to assess cumulative environmental effects.
- Describe the residual environmental effects of the Project.

- Describe other past, present, and likely future projects and activities, and the potentially measurable residual environmental effects of other projects and activities that may interact with the Project.
- Identify the potential interactions between the environmental effects of the Project with the environmental effects of the other projects and/or activities (cumulative environmental effects).
- Describe general and specific mitigation measures that are technically and economically feasible.
- Evaluate the significance of the resulting cumulative environmental effects.

EBPC listed the identified residual environmental effects of the Project in table 7.4.1 of its ESEA. Although residual environmental effects may occur during accidents, malfunctions and unplanned events, only those that are likely to occur (pursuant to the CEA Act) were carried forward into the cumulative environmental effects assessment.

EBPC indicated that it consulted with the NBDOE and the CEA Agency in selecting current and future projects that may have environmental effects that interact with those of the Project. Other projects were selected based on their proximity to the Project, the possibility of interactions with the environmental effects of the Project, and the likelihood of the other project(s) being carried forward (i.e., the project is registered with the Province under the New Brunswick *Clean Environment Act* or listed on the Canadian Environmental Assessment Registry). The spatial boundaries of the cumulative environmental effects assessment were Saint John County and Charlotte County.

EBPC submitted that it selected current and future activities (e.g., hunting and fishing) based on public and regulatory consultation, and the professional observations and opinions of members of the Jacques Whitford study team, its consultants for the ESEA.

Within its assessment of cumulative effects, EBPC identified land use actions and global actions as projects and activities with environmental effects that may act in combination with the residual environmental effects of the Project. Land use actions considered by EBPC included adjacent activities, existing RoWs, urbanization, and planned development projects. Adjacent activities included forest resource use, agricultural land use, watershed protection areas, rural residential land use, hunting, and fishing. Planned development projects included the Irving Oil LNG Marine Terminal and Multi-purpose Pier, the Irving Oil LNG and Marine Terminal Pond and Wetland Infilling, the Canaport™ LNG Terminal, and the Red Head Secondary Access Road along with 27 other projects in Charlotte County and Saint John County. The global actions focused on by EBPC were those having measurable environmental effects in the vicinity of the Project (i.e., regional air quality as a measurement of the cumulative emissions of global burning of fossil fuels acting on the regional airshed).

When asked by Mr. Thompson of FORP about whether a planned new oil refinery in the Red Head Mispec area was considered in the cumulative effects assessment, EBPC indicated that it was not considered. The CEA Act requires that you consider projects that are likely to take place. At the time of the ESEA, that project was not even known. EBPC submitted at that point, that project was just an idea.

EBPC identified potential interactions of the Project with the other projects and activities and then evaluated the significance of the resulting cumulative environmental effects. Potential interactions of effects were identified for:

- the atmospheric environment;
- water resources;
- fish and fish habitat;
- vegetation;
- wetlands;
- wildlife and wildlife habitat;
- land and resource use;
- infrastructure and services; and
- labour and economy.

For all of the cumulative environmental effects identified, EBPC predicted that the cumulative environmental effects of the Project in combination with other past, present and future projects and activities would not be significant, as measured against the criteria for significance it had identified. Therefore, no additional mitigation was recommended for minimizing the potential cumulative environmental effects of the Project.

Air Emissions

In response to concerns expressed by parties about cumulative effects of air emissions, EBPC referred to the evidence in its application and provided additional evidence on this topic. EBPC submitted that air emissions during construction of the pipeline would include carbon monoxide (CO) and carbon dioxide (CO_2) emissions from construction equipment exhaust, welding procedures, and clearing activities if wood waste materials are burned on the RoW. Air emissions may also result during initial purging of the pipeline. EBPC provided an estimate of the forest loss in the City of Saint John in terms of a CO_2 sink and its air filtering capacity. EBPC concluded that there would be a negligible loss in CO_2 sink and filtering capacity from these areas by the removing of vegetation.

EBPC noted that during operation, natural gas (methane) emissions would occur during system blowdown and system purging, if required. Methane emissions would also include fugitive emissions due to venting from pneumatic devices, valve maintenance, launcher/receiver barrels, and meter stations. CO and CO_2 emissions would occur from the exhaust of maintenance vehicles and equipment. EBPC provided estimates of the quantity of fugitive methane emissions from the pipeline.

The standard mitigation that would be applied by EBPC for air emissions is outlined in Table 7.2.3.

In its evidence, EBPC identified Canadian and NB ambient air quality objectives. There are currently no air quality standards or guidelines for concentrations of greenhouse gases (GHG) in

ambient air, nor are there any emission limits with respect to GHG releases from point sources on a local basis.

EBPC submitted that the Project itself would result in very low emissions of GHGs during the construction, and operation and maintenance phases. EBPC indicated that the estimated average fugitive GHG emissions from the Project of 8 579 tonnes CO_2 e/year equates to 0.04% of the provincial total. Compared to Canada's total in 2003 of 740 000 000 tonnes CO_2 e/year, the project would represent 0.001%.

EBPC concluded that cumulative effects on the atmospheric environment would not be significant because:

- cumulative contributions of air contaminants are not likely to result in an exceedance of the *NB Air Quality Regulation – Clean Air Act*, and would be temporary; and
- the Project would result in a relatively small loss of forest productivity (a carbon sequestration opportunity), a maximum of approximately 0.0004% of the Crown timber licenses it passes through, and during operation and maintenance, the RoW would be allowed to revegetate with the exception of removal of trees greater than approximately 1.5 m in height.

EBPC submitted that there are no GHG emissions of significance from the construction and operation of the Brunswick Pipeline. EBPC would employ various techniques and practices during construction and operation of the pipeline to minimize the release of GHG emissions. EBPC therefore concluded that any added or cumulative environmental effects would be negligible.

7.3.3 Views of the Parties

Interpretation of Cumulative Effects Assessment

The Eldridge-Thomases suggested that cumulative environmental effects that are likely to result from the Project in combination with other projects or activities, such as the LNG Terminal, tanker traffic and additional compressors on the M&NP US pipeline, are relevant. The effects suggested by the Eldridge-Thomases in the context of cumulative effects included:

- reduced tax revenues available to fund important environmental programs in the City;
- negative impacts upon the important fishery in the Bay of Fundy, the popular cruise ship industry from which Saint John enjoys great benefit, the growing water-based tourism adventure industry (whale-watching, sea kayaking, deep sea fishing), private pleasure boating, and the scheduling of cargo ships and ferry traffic destined for the Port of Saint John;
- the possibility of a ship strike and mortality of a member of the very small remaining eastern Right whale population, which summers and rears its young in the Bay of Fundy;
- the addition of more CO_2 and other pollutants into the air on prevailing winds, that would be emitted by the extra compressors installed in order to carry extra volumes from the Project on the M&NP U.S. pipeline.

The Eldridge-Thomases concluded that taken together, the combined LNG plant, tanker traffic and associated pipeline components would incrementally add to the load on the local airshed, so that there is no net benefit from these projects, when consideration is given to who benefits from these emissions, and who bears the cost.

During the oral portion of the hearing, Dr. Thomas wanted to pursue further questioning on effects of tanker traffic within the context of cumulative effects, resulting in a ruling from the NEB that is attached as Appendix 8.

The Eldridge-Thomases argued that the NEB's ruling precluded inquiry that could have addressed the potential for, as a result of the Project, incremental increases in tanker traffic, increased CO_2 emissions from the LNG Terminal, or increased levels of other pollutants related to the regassificiation of LNG. They also argued that the artificial separation of the LNG Terminal project and the Brunswick Pipeline Project make rational planning of projects and rational energy policy virtually impossible. The Eldridge-Thomases argued that an LNG plant with an export pipeline must result in more gas processing at the plant than the LNG plant with no export pipeline, and associated environmental effects would result. They submitted that it is unclear when projects, such as a recently announced second oil refinery, should be included in cumulative effects assessment. The Eldridge-Thomases believe that the LNG plant and pipeline should undergo a joint environmental assessment.

Cumulative Effects of Air Emissions

The Pembina Institute (Pembina), on behalf of Ms. Teresa Debly, submitted that examining a natural gas pipeline as if it operates independently of natural gas production, transportation, and liquefaction/gasification effectively ignores the true broader impacts of such a Project's operations. It indicated that the NEB's scoping document makes direct reference to tanker traffic's relevance as a cumulative impact. Pembina understood this as tanker-related transportation activities. Pembina submitted that, by extension, other life-cycle activities must be considered as well. Therefore, Pembina considered the air emissions assessment it conducted to be consistent with the intent and requirements of the CEA Act.

Ms. Debly submitted Pembina's report on life-cycle air emissions of the Project. The spatial scope of Pembina's air contaminant emissions assessment included the Canaport™ LNG Terminal and the pipeline between the Terminal and the western boundary of the City of Saint John in order to focus on the Saint John airshed. The spatial scope of Pembina's GHG emissions assessment included the entire life-cycle of all activities associated with the pipeline: the manufacture of the materials in the pipeline, producing the natural gas, compressing/cooling the gas, transporting the gas, transferring the gas, transmitting the gas through the pipeline, and end use (combustion assumed) of the gas.

Pembina concluded that the absolute air contaminant emissions and GHG emissions of the construction, operation and maintenance, and decommissioning of the pipeline proper are not expected to generate significant adverse impacts on the environment or human health if examined independently of all other industrial activity in the Saint John area.

Based on its analysis, Pembina concluded that when the cumulative effects are considered, the Project and related activities may serve to exacerbate the air quality problems already

experienced by the residents of Saint John. It also concluded that no single GHG source in Canada constitutes a significant proportion of Canada's total emissions; it is the accumulation of all sources that puts Canada among the most carbon-intensive countries in the world. The GHG emissions associated with the Project must be considered within NB and Canada's overall strategies.

EC submitted that there are numerous opportunities for reducing GHG emissions. Some best practices for reducing methane emissions from pipelines are described in the *Compendium of Methane and CO_2 Emission Reduction Measures for the Natural Gas Industry* and in the *Handbook for Estimating Methane Emissions from Canadian Natural Gas Systems*, and include the following:

- pre-installation of connected tees at any site with possible future service potential (to avoid line shutdowns);
- safe use of hot tapping or other techniques for future connections, or sleeve repairs for incidents;
- leak detection and repair programs, with regular maintenance checks of valves and fittings;
- state-of-the-art automatic closing valves should an incident occur;
- pipeline pigging practices and system gas control;
- optimization of pipeline system operation to avoid methane venting; and
- staff training and awareness.

EC encouraged EBPC to estimate GHG emissions from all project phases (e.g., installation, commissioning, operation, maintenance) and sources, consider and implement best practices available for GHG emissions reduction, and verify the effectiveness of these efforts.

Given public concern about this issue, HC recommended a contingency plan with proposed mitigative measures be created in the event that members of the public complain about localized air quality issues during pipeline construction. This would be particularly important if there are many residences within 300 m of the RoW (as the report indicates that any adverse effects are expected to be localized within 300 m of the RoW). Potential mitigative measures could include work slow-down or stoppage.

7.3.4 EBPC response to parties

In response to Pembina's analysis, EBPC indicated there are no GHG emissions of significance from the construction and operation of the Project. EBPC would employ various techniques and practices during construction and operation of the pipeline to minimize the release of GHG emissions. In addition, to the extent that customers in Canada or the US use natural gas from the Brunswick Pipeline to displace more carbon intensive fossil fuels, the resultant emissions of GHG may be reduced.

In response to EC's requests, EBPC provided average or typical annual fugitive methane emission rates for the Project and, from this, estimated the total annual GHG emissions expected from the Project. In addition, EBPC committed to ensuring pipeline operations staff be trained on

the best practices referred to by EC and indicated that these best practices would be addressed in EBPC's Environmental Protection and Safety Management Plan.

In response to HC's recommendation, EBPC replied that the magnitude of emissions resulting from construction, and operation and maintenance of the Project is expected to be very small in comparison to emissions from other sources in the assessment area, and the potential environmental effects to ambient air quality resulting from the Project are not expected to be discernible from current levels. Any short-term, measurable environmental effects to air quality are likely to be localized to the specific area being worked on during construction, and relatively localized to the project area during operation and maintenance. EBPC has committed to mitigative measures to reduce air contaminant emissions that would be described in further detail in the EPP, which would be provided to the NEB and Province of NB for review and comment prior to its implementation.

An Intervenor asked EBPC about the potential for larger volumes of LNG arriving by ship at the Canaport™ Terminal as a result of the Project. EBPC submitted that there are no changes as a result of the Project to the design or capacity of the Canaport™ LNG Terminal from that described in the environmental impact statement (EIS) for the LNG Terminal, and there would be no incremental emissions from the LNG Terminal and no incremental tanker traffic at the Canaport™ LNG Terminal as a result of the pipeline.

Views of the Board

During the course of the proceeding, the NEB issued a ruling that discussed how cumulative effects assessments are carried out in the Board's process. This ruling is attached as Appendix 9 (NEB Ruling 7, A-27).

The NEB also issued two rulings related to the scope of the Project being assessed. The first ruling was attached to the Environmental Assessment Scoping Document and is attached as Appendix 4. The second ruling was issued during the oral portion of the hearing, and is attached as Appendix 8 (Dr. Thomas Request to Revisit the Scope of the Project). The Board's rulings were consistent in excluding the Canaport™ LNG Terminal and the LNG tanker activity from the scope of the Project for the environmental assessment of the Brunswick Pipeline Project since the Terminal has already been the subject of a recent environmental assessment, but in allowing consideration of the Terminal and tanker traffic to the extent that they are relevant as cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out.

Within the framework set out in these rulings, the initial step of identifying residual effects of the Project being assessed considers only residual effects of the Brunswick Pipeline Project, with the scope of the Project defined in the Environmental Assessment Scoping Document included in Appendix 4. The evidence before the Board indicates that there would be no changes as a result of the Project to the design or

capacity of the Canaport™ LNG Terminal from that described in the EIS for the LNG Terminal. There is no evidence that there would be any activity within the Bay of Fundy as part of the Project, and therefore there would be no effects on or from boating or shipping in the Bay. Consequently, effects on boating or shipping in the Bay are not relevant to the cumulative effects assessment. Effects from boating or shipping, including tanker traffic, are only relevant as effects of other projects or activities, discussed further below. Tax revenues are not environmental effects, and therefore are not considered as part of the EA of the Project.

With respect to other projects to consider in a cumulative environmental effects assessment, the NEB has ruled in the past that the other projects considered in a cumulative effects assessment cannot be hypothetical.[20] The Courts have said that the decisions of RAs are not required to "consider fanciful projects by imagined parties producing purely hypothetical effects".[21] The Board is of the view that EBPC's methods for identifying other projects for consideration in the cumulative effects assessment were appropriate.

The context in which effects of other projects or activities are considered is when the effects of the other projects or activities act in combination with the residual effects predicted for the Brunswick Pipeline Project upon a biophysical or socio-economic element. Effects on fish and fish habitat and on the atmospheric environment, as well as effects on other biophysical and socio-economic elements, have been considered in this context.

Given the minimal project-related emissions that could affect air quality and their short-term nature, the Board is satisfied that any residual emissions that could combine with emissions from other projects and activities to act cumulatively would be negligible and not likely to be significant.

The Board notes that EBPC defined a significant residual adverse environmental effect on air quality in terms of GHG emissions as one that results in a substantive increase to provincial releases (i.e., >1% of total provincial GHG emissions, expressed as CO_2 equivalents). EC submitted that without sufficient explanation or reference to the significance or validity, that this criterion is arbitrary and bears no special significance.

The Board notes that, at the present time, there are no defined criteria to measure significance in relation to GHG when considered in an environmental assessment. However, comparisons to provincial or

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20 Alliance, *supra* note 4 at page 164, and Sable, *supra* note 4 at page 53.

21 *Bow Valley Naturalists Society* v. *Canada (Minister of Canadian Heritage)*, [2001] F.C.J. No. 18 (F.C.A.) at para. 75.

national emissions levels can provide a useful context for evaluating projects. While no specific criterion for significance has been established, considering the GHG emissions of the Project compared to provincial and federal levels of GHG emissions, the Board is satisfied that the GHG emissions of the Project are very low. As a result, the incremental effects of the GHG emissions of the Project are not likely to be significant.

With respect to other potential cumulative environmental effects, the Board notes that the discussion of some of the environmental effects earlier in this Report have taken into account the effects of other projects and activities. For example, the consideration of effects from increased access by ATVs and effects on wetlands already considers the existing environment, including the effects that have been experienced from past projects and activities. The discussion of the effects of noise took into account the noise that would be experienced as a result of the Project combined with other projects and activities at the time of construction. Therefore, these effects have not been discussed further within this section.

Given the nature of the Project, EBPC's proposed mitigation measures, the recommendations of the Board, and the limited extent of any residual effects, the Board finds that significant adverse cumulative effects of the Project are unlikely.

7.4 Capacity of Renewable Resources

Pursuant to subsection 16(2) of the CEA Act, this EA included consideration of the capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future.

7.4.1 Views of EBPC

EBPC submitted that the capacity of renewable resources likely to be affected by the Project to meet the needs of the present and those of the future was considered during its evaluation of significance for each of the environmental effects identified and evaluated.

EBPC identified and analyzed environmental effects on renewable resources including the atmospheric environment (air quality, acoustic environment), water resources, fish, vegetation, wetlands, and wildlife. EBPC's ESEA also identified and analyzed effects of the Project on land and resource use, such as residential, recreational, and commercial land use, as well as forestry and agriculture.

7.4.2 Views of the Parties

No comments were made by other parties specifically with respect to the capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future. Comments provided by parties to the hearing in the context of

specific effects on environmental components have been addressed in the environmental effects analysis in sections 7.1 through 7.3.

Views of the Board

The Board notes that for each of the renewable resources potentially affected by the Project, various sections of this Report provide a consideration of whether significant adverse effects to the "capacity" of that resource are likely to occur. The nature of potential effects to the capacity of renewable resources was considered along with criteria for evaluating significance, such as the length of time for recovery.

The Board finds that given the nature of the Project, the mitigation measures that would be implemented and the recommendations of the Board, the Project is not likely to cause significant adverse environmental effects on renewable resources.

7.5 Follow-Up Program

A "follow-up program" under the CEA Act is defined as "a program for verifying the accuracy of the environmental assessment of a project, and determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project."

The NEB must recommend a follow-up program for the Project as part of this EA.

EC recommended that a follow-up program should specify sites at which monitoring was conducted. Baseline data should be collected prior to clearing to enable future comparisons with follow-up data, and to facilitate planning for a decommissioning and site restoration phase. Monitoring should continue until it is determined by the NEB that the environmental component under study has been restored or the particular impact has been mitigated in a satisfactory manner.

Views of the Board

Baseline information is required in order to carry out a follow-up program, and therefore the collection of appropriate baseline data should be a consideration in the design of a follow-up program. Based on the nature of the environmental component, potential environmental effects of the Project, and the follow-up studies planned, the design of the follow-up program should also establish an appropriate follow-up period and schedule for reporting on the results of the program. In designing the follow-up programs for this Project, the Board expects that EBPC would plan an appropriate follow-up period and reporting schedule and would consult with relevant regulatory agencies and stakeholders on the design of its follow-up programs.

The Board has considered the need for, and requirements of, follow-upprograms in the environmental assessment. This need has been

discussed in relevant sections of the environmental effects analysis in this Report. If the Project were to receive regulatory approval, the Board recommends that the following condition be imposed.

- EBPC shall file with the Board for approval, at least sixty days prior to construction, a description of planned follow-up programs as required by the CEA Act. The programs shall be designed to verify the accuracy of the environmental assessment predictions and to assess the effectiveness of mitigation for:
  - fish and fish habitat as outlined in the Brunswick Pipeline Project ESEA (Volume 1);
  - wetlands as outlined in the Brunswick Pipeline Project ESEA (Volume 1);
  - access management as detailed in the Access Management Plan (recommendation G);
  - horizontal directional drill (HDD) noise management (recommendation H); and
  - reclamation of Rockwood Park (recommendation B(5)).

Copies of all correspondence demonstrating consultation with the appropriate regulatory agencies and stakeholders shall be included in the submission to the Board. The description of follow-up programs shall include a schedule for the submission of follow-up reports to the Board and the results of the follow-up programs shall be filed with the Board based on that schedule.

Therefore, the Board has included recommendations to this effect in section 9.2 as recommendations C and P.

If the Project were to receive regulatory approval and be constructed, the NEB would continue to have regulatory oversight of the Project for the life of the Brunswick Pipeline. Beyond the requirements for follow-up under the CEA Act, the OPR contain requirements related to environmental management that would apply to the Project throughout its life, and these requirements would be monitored and enforced by the NEB.

8.0 COMMENTS ON THE SUBSTITUTION PROCESS

The Board considers the pilot substitution process under the CEA Act to have been a success. The Board's hearing process met the following objectives.

- **CEA Act Requirements**: The process considered the full scope of the environmental assessment as set out in the Environmental Assessment Scoping Document in Appendix 4.

- **Public Access**: Information about the process being undertaken, including the environmental assessment scoping document, and the evidence considered as part of the process was available to the public.
- **Public Participation**: The process included opportunities for the public to convey their views to the Board's hearing panel, including written and oral presentations.
- **Reporting to Government**: The Board completed this EA Report for submission to the Minister of the Environment and the RA Ministers.

The NEB wishes to acknowledge the effort of its federal partners toward streamlining the regulatory process while maintaining the breadth and quality of the environmental assessment. The hearing process, as an integrated process considering environmental assessment as well as other issues relevant to the public interest, allowed the Board to hear from a broad spectrum of participants on a wide range of issues. The input was significant to the Board in its deliberations.

The success of this pilot project was made possible through the commitment and cooperation of the CEA Agency, federal departments involved in the environmental assessment as well as the participation of the people of New Brunswick who shared their views with the Board through written and oral presentations. The NEB also recognizes the cooperation of EBPC and its consultants.

The Board sincerely thanks all who participated in or otherwise supported this hearing and in particular the Board thanks the people of New Brunswick.

9.0 THE NEB'S CONCLUSION AND RECOMMENDATIONS

9.1 Conclusion

Pursuant to the CEA Act, the Board was charged with reviewing the environmental effects of the Project and the appropriate mitigation measures, and setting out its rationale, conclusions and recommendations, including any mitigation measures and follow-up programs in its EA Report.

This Report reflects the Board's review of the environmental effects of the Project and appropriate mitigation measures based on the Project description, factors considered during the review, and the scope of the factors. Throughout the Report, the Board has made a number of recommendations that, if included as conditions in any Certificate should the Project be approved under the NEB Act, would ensure that appropriate mitigation would be implemented. Further discussion regarding how these conditions would apply if the Project were to receive regulatory approval, and the Board's lifecycle approach to regulating pipelines, will be included in subsequent Reasons for Decision.

Provided all environmental commitments made by EBPC in its application and undertakings given by EBPC during the GH-1-2006 proceeding are implemented, and the Board's recommendations imposed as conditions to any Certificate, the Board finds that the Project is not likely to result in significant adverse environmental effects. Therefore, the Board recommends that the Project be allowed to proceed to regulatory and departmental decision-making.

9.2 Recommendations

In addition to the commitments EBPC has made throughout this proceeding, for example, those related to ongoing consultation, continuing education programs for First Responders and public awareness programs, the Board has a number of recommendations arising from its EA, the rationales for which are more fully discussed in the sections above.

It is recommended that in any Certificate that the NEB may issue, the following recommendations be attached as conditions of approval.

A. General

EBPC shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection of the environment included or referred to in its application or as otherwise agreed to during questioning or in its related submissions.

B. Environmental Protection Plan

EBPC shall file with the Board for approval, at least sixty (60) days prior to construction, a project-specific Environmental Protection Plan (EPP). This EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, and monitoring commitments, as set out in EBPC's application for the Project, subsequent filings, evidence collected during the hearing process, or as otherwise agreed to during questioning or in its related submissions. The EPP shall describe the criteria for the implementation of all procedures and measures, and shall use clear and unambiguous language that confirms EBPC's intention to implement all of its commitments. Construction shall not commence until EBPC has received approval of its EPP from the Board.

The EPP shall address, but is not limited to, the following elements:

1) environmental procedures including site-specific plans, criteria for implementation of these procedures, mitigation measures and monitoring applicable to all project phases and activities;
2) site-specific construction plans for wetlands where they cannot be avoided;
3) site-specific plans for habitat harboring Species at Risk and of Conservation Concern where it cannot be avoided;
4) project-specific acid rock drainage mitigation measures;
5) a construction and reclamation plan for Rockwood Park with evidence demonstrating consultation with stakeholders;
6) a reclamation plan which includes a description of the condition to which EBPC intends to reclaim and maintain the right of way once the construction has been completed, and a description of measurable goals for reclamation; and

7) evidence of consultation with relevant regulatory authorities that either confirms satisfaction with the proposed mitigation or summarizes any unresolved issues with the proposed mitigation.

C. Environmental Follow-up Programs

EBPC shall file with the Board for approval, at least sixty (60) days prior to construction, a description of planned follow-up programs as required by the *Canadian Environmental Assessment Act*. The programs shall be designed to verify the accuracy of the environmental assessment predictions and to assess the effectiveness of mitigation for:

- fish and fish habitat as outlined in the Brunswick Pipeline Project Environmental and Socio-Economic Assessment (Volume 1);
- wetlands as outlined in the Brunswick Pipeline Project Environmental and Socio-Economic Assessment (Volume 1);
- access management as detailed in the Access Management Plan (recommendation G);
- horizontal directional drill (HDD) noise management (recommendation I); and
- reclamation of Rockwood Park (recommendation B(3)).

Copies of all correspondence demonstrating consultation with the appropriate regulatory agencies and stakeholders shall be included in the submission to the Board.

These descriptions of follow-up programs shall include a schedule for the submission of follow-up reports to the Board.

D. Traditional Ecological Knowledge Study Recommendations

EBPC shall file with the Board, at least sixty (60) days prior to construction, an update on the implementation of the six recommendations identified in the Traditional Ecological Knowledge Study (July 2006).

E. Construction Inspection Program

EBPC shall file with the Board for approval, at least thirty (30) days prior to construction, a construction inspection program. The program shall include:

1) a preliminary list of the number and type of each inspection position, including job descriptions, qualifications, roles, responsibilities, and decision-making authority;
2) a discussion of how any changes to the items outlined in (1) would be determined during the course of construction; and
3) the reporting structure of personnel responsible for inspection of the various pipeline construction activities, including environment and safety.

F. Archaeological Studies and Monitoring Plan

EBPC shall consult with the Archaeological Services Unit of New Brunswick on further studies and a monitoring plan for areas with high potential for heritage resources, once the locations for detailed right of way, facility sites and temporary work space have been determined. EBPC shall file with the Board, at least thirty (30) days prior to construction:

1) for approval, a report that documents how archaeological and heritage resources within the detailed route have been identified, recorded and mitigated;
2) copies of any correspondence from, or a summary of any discussions with the Archaeological Services Unit of New Brunswick regarding the acceptability of EBPC's report and proposed mitigation measures; and
3) for approval, a copy of any proposed monitoring plan.

G. Access Management Plan

EBPC shall file with the Board for approval, at least thirty (30) days prior to construction, a project-specific Access Management Plan that includes:

1) EBPC's goals and measurable objectives regarding the Access Management Plan;
2) the methods and procedures to be used to achieve the mitigation goals;
3) the criteria to determine if the mitigation goals have been met;
4) the frequency of monitoring activities along the right of way;
5) a description of the adaptive measures that will take place in the event that access management measures are ineffective; and
6) evidence of consultation with relevant regulatory authorities and landowners that either confirms satisfaction or summarizes any unresolved issues with the proposed mitigation.

Construction shall not commence until EBPC has received approval of its Access Management Plan from the Board.

H. HDD Noise Management Plan

EBPC shall file for approval, at least ninety (90) days prior to the start of the HDD activity proposed for the Saint John River Crossing, a detailed noise management plan containing information on day-time and night-time HDD operations at the drill exit and entrance sites, including but not limited to the following:

1) ambient sound levels at noise-sensitive areas close to the HDD exit and entrance sites to establish a baseline for assessing potential noise impacts;
2) predicted noise level at the most affected residences caused by the HDD without mitigation;

3) proposed HDD noise mitigation measures, including but not limited to the following:
    i. all technologically and economically feasible mitigative measures as presented in Section 5.1.7 of the Environmental and Socio-Economic Assessment (Jacques Whitford, 2006) and in the Resource Systems Engineering assessment;
    ii. the use of full enclosures on diesel powered units;
    iii. the use of quiet machinery (where feasible);
    iv. the undertaking of HDD activities during periods where residential windows would be expected to be closed (i.e., during winter months);
4) predicted noise level at the most affected residences with implementation of the mitigation measures;
5) noise contour map(s) showing the potentially affected residences at various noise levels;
6) a noise monitoring program including locations, methodology and schedule;
7) confirmation that residents potentially affected by HDD noise will receive contact information for EBPC in the event they have concerns about the HDD noise;
8) a contingency plan with proposed mitigative measures for addressing noise complaints, which may include the temporary relocation of specific residents; and
9) confirmation that EBPC will provide notice to nearby residents in the event that a planned blowdown is required and that planned blowdowns will be completed during day-time hours whenever possible.

I. Saint John River Crossing

EBPC shall construct the crossing(s) of the Saint John River using the HDD method or, if this is not feasible, shall apply to the Board for approval of an alternative crossing technique and include an environmental assessment of the proposed alternative with its application.

J. Archaeological or Heritage Resource Discovery

EBPC shall notify the Board, at the time of discovery, of any archaeological or heritage resources and, as soon as reasonable thereafter, file with the Board for approval a report on the occurrence and proposed treatment of the archaeological/heritage resources, any changes to the archaeological/heritage monitoring plan, and the results of any consultation, including a discussion on any unresolved issues.

K. Emergency Procedures Manual

EBPC shall file with the Board, at least sixty (60) days prior to operation, an Emergency Procedures Manual (EPM) for the Project and shall notify the Board of any modifications to the plan as they occur. In preparing its EPM, EBPC shall

refer to the Board letter dated 24 April 2002 entitled "Security and Emergency Preparedness Programs" addressed to all oil and gas companies under the jurisdiction of the National Energy Board.

L. Consultation on Emergency Procedures Manual

EBPC shall file with the Board, at least sixty (60) days prior to operation, evidence of consultation with stakeholders identified in the EPM, including a summary of any unresolved issues identified in consultations, and evidence that the EPM addresses, to the extent possible, any issues raised during consultation.

M. Emergency Response Exercise

1) Within six (6) months after commencement of operation of the Project, EBPC shall conduct an emergency response exercise with the objectives of testing:
   - emergency response procedures;
   - training of company personnel;
   - communications systems;
   - response equipment;
   - safety procedures; and
   - effectiveness of its liaison and continuing education programs.

2) EBPC shall notify the Board, at least thirty (30) days prior to the date of the emergency response exercise, of the following:
   - the date and location(s) of the exercise;
   - the participants in the exercise; and
   - the scenario for the exercise.

3) EBPC shall file with the Board, within sixty (60) days after the emergency response exercise outlined in (1), a report on the exercise including:
   - the results of the exercise;
   - areas for improvement; and
   - steps to be taken to correct deficiencies.

N. Emergency Response Exercise Program

Within six (6) months after commencement of operation of the Project, EBPC shall file with the Board a description of the company's emergency response exercise program, including:

- the frequency and type of exercises (full-scale, table-top, drill) it plans to conduct; and
- how the results of any emergency response exercises will be integrated into the company's training and exercise programs.

O. Post-construction Environmental Reports

Within six (6) months following commencement of operation of the Project, and on or before the 31st of January following each of the second (2^{nd}) and fourth (4^{th}) complete growing seasons following commencement of the operation of the Project, EBPC shall file with the Board a post-construction environmental report that:

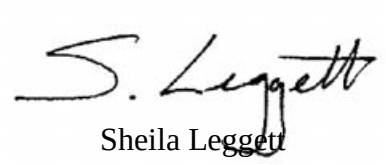
1) identifies on a map or diagram any environmental issues that arose during construction;
2) provides a discussion of the effectiveness of the mitigation applied during construction;
3) identifies the current status of the issues identified, and whether those issues are resolved or unresolved; and
4) provides proposed measures and the schedule EBPC shall implement to address any unresolved issues.

P. Environmental Follow-up Program Reports

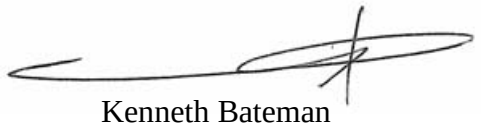
EBPC shall file with the Board, based on the schedule referred to in Recommendation C, the report(s) outlining the results of the follow-up programs.

National Energy Board
Environmental Assessment Report

Brunswick Pipeline Project



Sheila Leggett
Panel Chair



Kenneth Bateman
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Calgary, Alberta T2P 0X8
Phone: 1-800-899-1265
Facsimile: 1-877-288-8803
secretary@neb-one.gc.ca

APPENDIX 1: Project-Related Advice Provided by RAs, FAs, and Provincial Departments with an EA Responsibility

Department / Agency	Role	Summary of Comments
Canadian Transportation Agency	Possible RA	▪ CTA did not provide any submissions.
DFO	RA	▪ DFO declared itself a Government Participant in the hearing process. ▪ No other submissions were received from DFO during the course of the proceedings.
Health Canada	FA with specialist advice	▪ Health Canada declared itself a Government Participant in the hearing process. ▪ In its written evidence dated 20 September 2006, Health Canada provided comments regarding air quality, noise and vibration, drinking water, country foods, and socio-economic considerations. In this evidence, Health Canada made specific recommendations related to monitoring of air quality, addressing potential for noise from construction and blowdowns, and post-construction groundwater monitoring. ▪ Health Canada provided additional information about its comments related to noise in response to information requests from EBPC and the Board. ▪ In a letter dated 3 November 2006, Health Canada provided further information clarifying its comments on noise related to the HDD of the Saint John River, and indicating that its concerns were resolved as long as specific mitigation would be implemented. ▪ In a letter dated 15 November 2006, Health Canada provided comments on a possible certificate condition related to an HDD noise management plan. These comments have been incorporated into the NEB's recommendation H.
Transport Canada	RA	▪ Transport Canada provided a letter of comment dated September 11, 2006. ▪ In its letter of comment, Transport Canada provided information about its mandate and requirements related to the Project under the *Navigable Waters Protection Act*, the NEB Act, and the *Transportation of Dangerous Goods Act*. ▪ The letter also informed EBPC that if any "work" is placed in, on, under, over, through or across navigable water, EBPC is required to submit an application for approval.

Department / Agency	Role	Summary of Comments

EC	Possible RA	▪ EC was an Intervenor in the hearing process.
		▪ In its evidence dated 20 September 2006, EC provided various comments related to:
		  ▪ Preventing impacts to wildlife and habitat
		  ▪ Risk assessment and environmental emergencies
		  ▪ Preventing impacts to water quality
		  ▪ Considering alternative means involving disposal at sea
		▪ It also provided specific recommendations related to:
		  ▪ Route selection and corridor width
		  ▪ Migratory birds and forest habitats
		  ▪ Wetlands and wetland functions
		  ▪ Wildlife at risk and of conservation concern
		  ▪ Quantitative risk assessment
		  ▪ Environmental emergency prevention and response planning
		  ▪ Acid rock drainage
		  ▪ Hydrostatic testing
		  ▪ Horizontal directional drilling
		  ▪ Assessing alternative means involving disposal at sea
		▪ EC provided additional information about its comments related to spill response in response to an information request from EBPC.
		▪ EC also submitted final argument reiterating its recommendations and providing comments on possible certificate conditions.

NRCan	FA with specialist advice	▪ NRCan declared itself a Government Participant in the hearing process. ▪ In its evidence dated 20 September 2006, NRCan provided comments regarding acid rock drainage and metal leaching; groundwater and hydrogeology; and seismicity. In this evidence, NRCan made specific recommendations related to acid rock management and groundwater studies.
NBDOE	Provincial department with an EA responsibility	▪ NBDOE was an Intervenor in the hearing process. In its application for intervention, NBDOE indicated that the Province of New Brunswick has always been and continues to be interested in appropriate economic development, including energy infrastructure projects that will benefit its citizens while ensuring that potential environmental impacts, including socio-economic impacts, of any development proposals are adequately addressed. ▪ As part of its evidence, EBPC submitted comments it had received from the New Brunswick Technical Review Committee, led by the NBDOE, on EBPC's ESEA for the Project. In its submission, EBPC also provided its response to those comments. The comments were on a wide variety of topics addressed in EBPC's ESEA ▪ In its final argument, NBDOE reiterated its comments from its application for intervention.

APPENDIX 2: Substitution Requirements

Canadian Environmental Assessment Agency
President
160 Elgin St., 22nd floor
Ottawa ON K1A 0H3

Agence canadienne d'évaluation environnementale
Président
160, rue Elgin, 22e étage
Ottawa ON K1A 0H3

Mr. Kenneth W. Vollman
Chairman
National Energy Board
444 Seventh Avenue SW
Calgary Alberta T2P 0X8

Dear Mr. Vollman:

The Canadian Environmental Assessment Agency (the Agency) has received a copy of the letter addressed to Minister Ambrose dated March 16, 2006 in which the National Energy Board has requested that the Minister refer the Brunswick Pipeline Project to a review panel. Further, in your letter, you have requested that the Minister approve the substitution of the National Energy Board process for an environmental assessment by a review panel pursuant to subsection *43(1)* of the *Canadian Environmental Assessment Act*.

In preparing its recommendation to Minister Ambrose, the Agency would like to be able to confirm that:

- the substituted process for the Brunswick Pipeline Project (substituted process) shall apply fully the scope of assessment, factors to be considered and scope of factors as set out in the *Environmental Assessment Scoping Document* provided as Attachment 1 to your referral letter;
- the substituted process shall make the *Environmental Assessment Scoping Document* publicly available;
- the substituted process shall include informal opportunities for the public to convey their views to the National Energy Board hearing panel, including written and oral presentations;
- on the completion of the environmental assessment, the National Energy Board shall submit a report (Report) to the Minister of the Environment and the responsible authority Ministers;

.../2

- the Report submitted to the Minister of the Environment shall set out the National Energy Board's rationale, findings, conclusions and recommendations, including:
  - any mitigation measures that should be implemented with respect to the project,
  - the follow-up program that the National Energy Board recommends;
  - the National Energy Board shall publish the Report;
  - the National Energy Board has agreed, that for this project only, the Agency shall administer the Participant Funding Program for the substituted process;
  - the National Energy Board shall assist the Agency in ensuring that the successful applicants from the Participant Funding Program have applied for and received intervener status in the hearings before the Agency enters into any contribution agreements;
  - following the submission of the Report to the Minister of the Environment, the National Energy Board shall provide the Agency with a report on the participation of the successful Participant Funding applicants in the hearing process ensuring that those successful applicants provided evidence at the hearing regarding the factors considered or other issues related to the environmental assessment and/or provided the same in writing.

Following confirmation from the National Energy Board of its commitment to the above, the Agency will proceed with its recommendation to Minister Ambrose and will inform you of her decision.

Yours sincerely,

Jean-Claude Bouchard

c.c.: Ted Currie, Fisheries and Oceans Canada
Carl Ripley, Transport Canada
Friederike Kirstein, Environment Canada
Sarah Olivier, Natural Resources Canada
Tony Henderson, Health Canada
Bill Aird, Canadian Transport Agency
Paul Vanderlaan, New Brunswick Department of Environment and Local Government

National Energy Board / Office national de l'énergie

Office of the Chairman / Bureau du Président

27 March 2006

Mr. Jean-Claude Bouchard
President
Canadian Environmental Assessment Agency
160 Elgin Street, 22nd Floor
Ottawa, (Ontario) K1A 0H3

Brunswick Pipeline Project – Substituted Process Commitments

Dear Mr. Bouchard,

The National Energy Board has received your letter dated 21 March 2006 requesting that the Board confirm its commitment to the list of requirements for a substituted process for the proposed Brunswick Pipeline Project (the Project) prepared by the Canadian Environmental Assessment Agency (the Agency) and outlined in the letter. The Board has reviewed the list of requirements for the substituted process and is committed to meet those requirements in conducting its review of the Project.

Thank you very much for working with the Board to bring our recommendations and requests related to the Project to Minister Ambrose. The NEB looks forward to working with our colleagues at the Agency to deliver a rigorous, timely and harmonized federal environmental assessment of the Project.

Sincerely,

Kenneth W. Vollman,
Chairman

c.c.

Fisheries and Oceans Canada
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Environment Canada
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Natural Resources Canada
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Canadian Transportation Agency
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New Brunswick Department of Environment and Local Government
Mr. Paul Vanderlaan, Director, Project Assessment
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Canadian Environmental Assessment Agency
Mr. Bruce Young, Director, Panel Management
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Minister of the Environment Ministre de l'Environnement

Ottawa, Canada K1A 0H3

03 MAI 2006

Mr. Kenneth W. Vollman
Chairman
National Energy Board
444 Seventh Avenue South West
Room 4047
Calgary AB T2P 0X8

Dear Mr. Vollman:

Thank you for your letter of March 16, in which the National Energy Board (NEB) has requested that I refer the Brunswick Pipeline Project to a review panel. Further, in your letter, you have requested that I approve the substitution of the NEB process for an environmental assessment by a review panel pursuant to subsection 43(1) of the *Canadian Environmental Assessment Act* (the Act).

I am also aware of the letter addressed to you, dated March 21, and signed by the President of the Canadian Environmental Assessment Agency (the Agency) in which the President was seeking confirmation of your commitment to a list of conditions for a substituted process. I understand that you have responded to the Agency in a letter dated March 23, indicating that you are committed to meeting those conditions set out in the Agency's letter of March 21.

I am pleased to inform you that based on your commitments made in your letters of March 16 and 23, I am referring the project to a review panel and I am approving your request for substitution of the NEB process for an environmental assessment by a review panel pursuant to subsection 43(1) of the Act. I look forward to the receipt of your report.

Please accept my best wishes.

Yours sincerely,

Rona Ambrose

Rona Ambrose

c.c.: The Honourable Loyola Hearn , P.C., M.P.
The Honourable Lawrence Cannon, P.C., M.P.
The Honourable Gary Lunn, P.C., M.P.
Ms. Marian L. Robson, President of the Canadian Transportation Agency

Canada

APPENDIX 3: Comments Received by the NEB on Draft Environmental Assessment Scoping Document

Stakeholder	Summary of Comments
Bear Head LNG Corporation	▪ Project-specific direction on the scope of alternatives to be considered should be given, specifically, direct connections to Canada's Maritimes gas market should be considered
Ian and Deborah Benjamin	▪ Oppose three land routes for pipeline because of effects on Rockwood Park, risk to hospital ▪ Want an independent assessment of the costs of the undersea route
Carol Blomsma	▪ Concerned about routing through the City
Dorothy Dawson	▪ Concerned about route through the City, prefers underwater route
Teresa Debly	▪ Concerns about water tables, air shed, effects on wildlife from blasting, and noise should be addressed
EBPC	▪ Current scope is appropriate
EC	▪ Concurs with the draft scoping document as presented
Friends of Rockwood Park	The following topics should be addressed in the environmental assessment: ▪ Detailed examination of undersea route ▪ Consequences of accidents and malfunctions ▪ Emergency response ▪ Related to Rockwood Park: construction methods, noise, caves, lakes and ponds, ATVs, flora and fauna, fossils ▪ Construction disturbance to community ▪ Relationship between Irving Repsol LNG Terminal and Brunswick Pipeline ▪ Effects of Brunswick Pipeline combined with Irving Repsol LNG Terminal ▪ Gas emissions through venting or leakage ▪ Security ▪ Marsh Creek flood plain ▪ Temperature of buried pipeline ▪ Cumulative effects of industrialization ▪ Property value, tax, and insurance ▪ Employment for pipeline construction ▪ Effects on land use near the pipeline ▪ Liability ▪ Gas supply ▪ Social capital in Saint John ▪ City infrastructure ▪ Vegetation control along pipeline corridor ▪ Soil contamination
Ken Golding	▪ Not concerned about route; tax revenue and safety are important ▪ Consider automatic closing of pipeline valves and review the number of valve stations planned for Saint John
Dennis Griffin	▪ Would like more information about the routing
Patty Higgins	▪ Concerns about impact of LNG tankers, effects on air shed, and

Stakeholder	Summary of Comments
	contaminated soil should be addressed
William Johnston	▪ Opposes the pipeline
Betty Lizotte	▪ Consider effects on Rockwood Park, including lakes, wildlife, and trees. Prefers undersea route
Fred London	▪ Concerned about routing through the Park and the City
Bob McDevitt	▪ Prefers route under the Bay of Fundy to avoid danger to citizens and Rockwood Park
Scott O'Leary	▪ Opposes pipeline route, prefers route under the Bay for safety reasons
Dan Robichaud	▪ Concerned about emergency response
Saint John Citizens Coalition for Clean Air	The following topics should be addressed in the environmental assessment ▪ Effects of change in ownership of the project ▪ Effects from trespass on ATVs ▪ Assessment of communication system, power supply required to service site ▪ Comprehensive list and analysis of malfunctions or accidents ▪ Psychosocial health impacts ▪ Assessment of the underwater route under the Bay of Fundy ▪ Effects on air from tree removal, construction emissions at the airshed level ▪ Need for the Project and alternatives to the Project should be mandatory topics, supply of LNG ▪ City of Saint John tax concession ▪ Community knowledge about worries, complaints, ideas, alternatives and personal impacts ▪ Consideration of other projects or activities that have been or will be carried out, such as the oil refinery upgrade, possibility for petrochemical facilities ▪ Local availability of natural gas from the Project ▪ Security • Pipeline safety
Horst Sauerteig	▪ Submarine route should be considered and detailed investigations of the sea- and sub-sea floor and related geotechnical and geophysical conditions should be carried out for consideration
Michael Saunders	▪ Opposes route through the City, prefers under water route
Abigail Teed-Walton	▪ Opposes route through residential areas of Saint John and Rockwood Park, prefers route through the Bay of Fundy
Dr. Leland Thomas	▪ Should also include the environmental effects of the Canaport LNG plant ▪ Research should be carried out into the location of the stated supply for the Brunswick Pipeline
Carol Ring	▪ Protests route through Rockwood Park and residential areas of Saint John ▪ Only acceptable route is through Bay of Fundy
Ruth Vincent	▪ Concerned about pipeline routing related to safety
Don Watson	▪ Concerned about safety, emergency response and associated costs ▪ Prefers marine route
SarahRose Werner	▪ Concerned about effects of drilling and blasting

APPENDIX 4: Board Ruling - Environmental Assessment Scoping Document (Letter dated 23 June 2006)

The Brunswick Pipeline Project (the Project) is aimed at the construction of a natural gas transmission pipeline from the Canaport™ Liquefied Natural Gas (LNG) Facility at Mispec Point, near Saint John, New Brunswick (currently under construction), to an export point at the Canada-US border.

In May 2006, the National Energy Board (NEB or Board) released for public comment a draft Environmental Assessment Scoping Document for the Brunswick Pipeline Project that included input from the other federal and provincial departments involved in the environmental assessment of the Project. The deadline for comments was 7 June 2006.

The public comments received generally fell into three categories:

1. requests for specific issues or pieces of information to be considered as part of the environmental assessment, or concerns expressed about the Project, that fall within the existing scope of the factors for the assessment, such as environmental effects of the proposed route and effects of accidents and malfunctions;
2. requests for additional factors to be considered as part of the environmental assessment, or concerns expressed about the Project, where the factors fall within the list of issues considered within the NEB's regulatory mandate under the *National Energy Board Act* rather than its environmental assessment mandate under the *Canadian Environmental Assessment Act* (CEA Act). These factors include the safety of the design and operation of the proposed facilities, the economic feasibility of the proposed facilities, and the potential environmental and socio-economic effects of the proposed facilities; and,
3. requests to expand the scope of the Project to include the Canaport™ LNG facility or expand the scope of the factors to include other factors that are not currently included in either the scope of the assessment or the list of issues within the Board's regulatory mandate.

With respect to items in the first category, the Board is satisfied that since the issues raised are within the scope of the assessment as described in the draft document, the scope is adequate.

With respect to items in the second category, the Board is of the view that these issues are not covered by the scope of the assessment as described in the draft document, but are covered by the broad issues in the List of Issues attached as Appendix I to the Board's Hearing Order GH-1-2006. Since these broad issues have already been identified by the Board for discussion in the proceeding, while they are outside of the scope of the environmental assessment, they will be considered within the Board's proceeding which considers issues beyond the environmental assessment. Therefore, the Board is of the view that these issues need not be added to the scope of the environmental assessment.

With respect to items in the third category, the Board notes that the Canaport™ LNG facility has already undergone an environmental assessment by federal authorities under the CEA Act and by the Province of New Brunswick under provincial environmental assessment regulations. Since the LNG facility has already been the subject of a recent environmental assessment, the Board is

of the view it should not include the Canaport™ LNG terminal or the LNG tanker activity in the scope of the project for the environmental assessment of the Brunswick Pipeline Project. To do otherwise would be contrary to one of the CEA Act's stated purposes, that being the elimination of unnecessary duplication in the environmental assessment process. In addition, assessment of a project under the CEA Act is to occur at the proposal stage. The LNG terminal was assessed at the proposal stage and is now under construction.

However, within the scope of the assessment for the Brunswick Pipeline Project set out in the draft document, the terminal and tanker traffic can still be considered to the extent that they are relevant as cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out.

Some commenters requested that a complete assessment of an underwater route for the Project be included as part of the scope of the environmental assessment. Consideration of alternative means is already a factor within the scope of the environmental assessment and includes consideration of alternative routes and how or why they are technically, economically and environmentally feasible. Accordingly, there is no need to add additional wording to the scope. Intervenors will have an opportunity to test the adequacy of the Applicant's analysis during the hearing and, if they choose, to submit their own evidence.

A comment was received by the Board requesting that in the scope of the environmental assessment, the word "consideration" be removed when referring to factors under paragraph 16(1)(e) of the CEA Act. The Board notes that the word "considered" is used in that paragraph of the CEA Act. Section 16 of the CEA Act requires that the factors listed in that section must be taken into consideration. This is a legislated requirement, therefore the responsible authorities will take these factors into account in the environmental assessment.

The Board has therefore determined that the scope of the Environmental Assessment as outlined in the draft Environmental Assessment Scoping Document is appropriate. The Environmental Assessment Scoping Document has been modified to reflect minor changes in the description of the components listed under the Scope of the Project to accurately reflect the Project as proposed by Emera Brunswick Pipeline Company Ltd. in its application to the NEB. The revised Environmental Assessment Scoping Document is attached.

Purpose of the Scoping Document

This scoping document is an information document briefly describing the scope of the federal and provincial environmental assessments for the Project. The term "scope of the environmental assessment" means the proposed scope of the Project for the purposes of the environmental assessment, the factors proposed to be considered in the environmental assessment, and the proposed scope of those factors.

The responsible authorities (RAs) will ensure that an environmental assessment of the Project is conducted in accordance with the scope of the Project. The RAs will include in their review consideration of the factors identified and will consider the potential effects of the proposed Project within spatial and temporal boundaries described under scope of the factors.

Environmental Assessment Process

The Project has been referred to a Review Panel pursuant to section 25 of the CEA Act. The CEA Act Panel Review requirements will be substituted with the NEB regulatory process as allowed under section 43 of the CEA Act.

The NEB, the Department of Fisheries and Oceans, Transport Canada, Environment Canada and the Canadian Transportation Agency are the RAs and shall ensure that an environmental assessment of the Project is undertaken. The federal permits and authorizations which trigger the CEA Act and will be necessary for this project are:

- a certificate of public convenience and necessity issued pursuant to section 52 of the *National Energy Board Act* (NEB Act);
- authorization by the Minister of Fisheries and Oceans pursuant to subsection 35(2) and/or section 32 of the *Fisheries Act*;
- approval by the Minister of Transport pursuant to subsection 5(1) of the *Navigable Waters Protection Act*;
- possible approval by the Minister of the Environment for disposal at sea pursuant to the *Canadian Environmental Protection Act*; and
- the Canadian Transportation Agency may issue a permit or license under subsection 101(3) of the *Canada Transportation Act.*

To assist in the environmental assessment process, Natural Resources Canada and Health Canada may provide expert advice in relation to the Project.

The Project must be registered as an undertaking pursuant to the New Brunswick *Environmental Impact Assessment Regulation* under the New Brunswick *Clean Environment Act*. The New Brunswick Department of Environment and Local Government administers this regulation and will require that an environmental impact assessment be carried out and approved by Government of New Brunswick before the Project can proceed.

Electronic Filing

While the Board accepted some comments on the draft scope received by e-mail, the Board reminds anyone wishing to participate in the hearing process for the Brunswick Pipeline Project that e-mail will not be accepted during the hearing process. For details on acceptable methods of filing documents, please refer to the NEB's Hearing Order GH-1-2006.

Brunswick Pipeline Project

Environmental Assessment Scoping Document

1.0 INTRODUCTION

The proposed Brunswick Pipeline Project (the Project) is aimed at the construction of a natural gas transmission pipeline from the Canaport™ Liquefied Natural Gas (LNG) Facility at Mispec Point, near Saint John, New Brunswick (currently under construction), to an export point at the Canada-US border.

The Project is subject to the federal environmental assessment process pursuant to the *Canadian Environmental Assessment Act* (the CEA Act).

2.0 SCOPE OF THE ASSESSMENT

2.1 Scope of the Project

The scope of the Project as determined for the purposes of the environmental assessment includes the various components of the Project as described by Emera Brunswick Pipeline Company Ltd. in its application to the National Energy Board dated 23 May 2006, and the physical works and activities described in this document.

The scope of the Project includes construction, operation, maintenance and foreseeable changes, and where relevant, the abandonment, decommissioning and rehabilitation of sites relating to the entire Project, and specifically, the following physical works and activities:

- a pipeline of approximately 145 kilometres from the Canaport™ LNG Facility at Mispec Point, near Saint John, New Brunswick (currently under construction) and the international border near St. Stephen, New Brunswick, with a diameter of 762 millimetres (30 inches) and a maximum pressure of 9930 kPa (1440 psi);
- six above-ground valve sites, three in urban Saint John and three in rural areas, within fenced areas approximately 20 metres by 20 metres, with associated access roads, power supply and telecommunications supply;
- a combined meter station and launcher site immediately outside of the Canaport™ LNG facility battery limits, with associated access road, power supply and telecommunications supply;
- a combined valve and launcher/receiver station site adjacent to LV 63 on the existing Saint John Lateral (off of the West Branch Road, Musquash), with associated access road, power supply and telecommunications supply; and;
- related physical works and activities, including all temporary facilities, such as temporary work areas, marshalling yards, storage areas and access roads, required for the construction of the pipeline.

2.2 Factors to be Considered

The environmental assessment will include a consideration of the following factors listed in paragraphs 16(1)(a) to (d) and subsection 16(2) of the CEA Act:

1. the environmental effects of the Project, including the environmental effects of malfunctions or accidents that may occur in connection with the Project and any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out;
2. the significance of the effects referred to in paragraph 1;
3. comments from the public that are received during the public review;
4. measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project;
5. the purpose of the Project;
6. alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;
7. the need for, and the requirements of, any follow up program in respect of the Project; and
8. the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.

In addressing the above factors, which are mandatory in any panel review under the CEA Act, the environmental assessment will demonstrate the following:

- consideration of alternative means includes addressing an alternative marine route for the pipeline south of Saint John that may necessitate a disposal at sea permit;
- a priority on impact avoidance and minimization opportunities that recognizes "…mitigation is used to address all adverse environmental effects, whether or not subsequent analysis determines that the effects are significant" (CEA Agency RA Guide, 1994, p. 88); and,
- a consideration of available community knowledge and Aboriginal traditional knowledge as applicable.

In accordance with paragraph 16(1)(e) of the CEA Act, the assessment by the RAs will also include a consideration of the additional following matters:

9. the need for the Project; and
10. alternatives to the Project[22].

Subsection 2(1) of the CEA Act defines environmental effects as any change that the Project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in

22 The Canadian Environmental Assessment Agency's October 1998 Operational Policy Statement addressing the "need for" the project, the "purpose of" the project, the "alternatives to" the project and "alternative means" of carrying out the project, provides definitions and general guidance on when and how these factors should be considered.

subsection 2(1) of the *Species at Risk Act*, any effect of any such change on health and socio-economic conditions, physical and cultural heritage, the current use of lands and resources for traditional purposes by aboriginal persons or any structure site or thing that is of historical, archaeological, paleontological or architectural significance or any change to the Project that may be caused by the environment.

2.3 Scope of Factors to be Considered

The environmental assessment will consider the potential effects of the proposed Project within spatial and temporal boundaries which encompass the periods and areas during and within which the Project may potentially interact with, and have an effect on components of the environment. These boundaries will vary with the issues and factors considered, and will include;

- construction, operation, decommissioning, site rehabilitation and abandonment or other undertakings that are proposed by the Proponent or that are likely to be carried out in relation to the physical works proposed by the Proponent, including mitigation and habitat replacement measures;
- the natural variation of a population or ecological component;
- the timing of sensitive life cycle phases of wildlife species in relation to the scheduling of the Project;
- the time required for an effect to become evident;
- the time required for a population or ecological component to recover from an effect and return to a pre-effect condition, including the estimated degree of recovery;
- the area affected by the Project; and
- the area within which a population or ecological component functions and within which a Project effect may be felt.

For the purpose of the assessment of the cumulative environmental effects, the consideration of other projects or activities that have been or will be carried out will include those for which formal plans or applications have been made.

APPENDIX 5: Board Ruling on Questioning about Alternatives to the Project (17 November 2006, Transcript Volume 11, lines 17126-17136)

The Board has heard a line of questioning from Anadarko and an objection to the proposed line of questioning by Emera and Repsol.

In responding to these objections, the Board is of the view it would also be helpful for parties to set out a framework for consideration of relevant issues in this proceeding.

The Board is here to hear evidence concerning the benefits and burdens of the applied-for Brunswick Pipeline Project, as currently framed. As a result, exploration of these benefits and burdens of this project by parties to this proceeding is permitted.

Areas such as the impact this project may have on current pipelines, other current or reasonably contemplated projects, current tolls or supply and demand market issues are, therefore, open to be explored.

Need for the pipeline can be fully explored, including the issue of whether this project, as currently framed, could be considered a bypass to existing or reasonably contemplated pipeline facilities.

However, exploration of the benefits or burdens of a project, which is not before the Board, is outside the scope of this proceeding; that is, what the benefits would be of a different project, built by a different company, involving altering of the M&NP Canada System to transfer the supply from Canaport, the cost for doing so and the benefits or burdens of such other project on other matters, such as the ability of Nova Scotia's future potential supply sources to access the market, are outside the scope of this proceeding.

The speculative impact on the levels of tolls, on M&NP Canada, if such a project were to be constructed are also not of probative value to the Board, in assessing the benefits and burdens of this Brunswick Pipeline Project.

There is no evidence submitted that any such speculative or hypothetical project would be constructed[23]. Spending time exploring these speculative and remote alternative projects is not of sufficient probative value to the Board, in determining whether this project is in the present and future of public convenience and necessity.

Alternatives to the project raised, in the context of CEAA, should not be used to delve into a detailed economic analysis of the benefits and burdens of that alternative, as it is outside of the scope of the Board's considerations under CEAA.

Accordingly, a discussion of whether an alternative or hypothetical project, which is not

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23 Correction to this word in the original transcript was made in transcript volume 12, paragraph 19686.

proposed before the Board, and how that hypothetical project could potentially serve incremental natural gas supply for the region, or affect future tolls on other pipelines is not sufficiently tied to an assessment of the benefits and burdens of the Brunswick Pipeline Project, and will not be permitted.

With this direction, Mr. Roth, you may ask any further questions that fall within this framework.

APPENDIX 6: Board Ruling on Questioning about Alternative Means (16 November 2006, Transcript Volume 10, lines 14866-14878)

Yesterday, Mr. Sauerteig asked the Board to consider and allow him to continue cross-examining Emera's Panel No. 1 about his counter-proposal to the marine route that Emera examined in the course of making its decision to apply for the preferred route in its application.

The grounds Mr. Sauerteig relies on to bring this motion are that this marine crossing was an important part of his written intervention and that he has not been afforded sufficient opportunity to test the evidence adduced by Emera regarding the marine route alternatives.

Mr. Sauerteig also argued that no objections to this line of investigating Emera's application to the National Energy Board were raised before November 13, 2006.

Mr. Sauerteig further argued that according to Item 1.8.6 of Emera's application to the NEB, this marine crossing was considered but rejected for reasons which Mr. Sauerteig intended to show in the course of his cross-examination were either wrong or overstated.

Mr. Sauerteig states that this makes this aspect of Emera's application to the NEB suspect and that he was, until his questioning was halted, in the process of disproving most, if not all, of Emera's reasons listed in his application for rejecting this marine crossing.

As the Board has set out in previous applications for review during this hearing, Rule No. 44 of the NEB Rules of Practice and Procedure, requires that an application for review of a Board decision identifies sufficient grounds to raise doubt as to the correctness of that decision or order, including an error of law or jurisdiction, changed circumstances or new facts which have arisen, or facts that were not placed in evidence in the original decision, and were then not discoverable by due diligence.

The Board has not persuaded that grounds have been identified to raise doubt as to the correctness of the Board's request to have Mr. Sauerteig move on to another line of questioning.

As a result, Mr. Sauerteig's application for review is denied.

While the Board could end the matter here and -- will take this opportunity to explain that it is incumbent upon a project proponent to demonstrate under the Canadian Environmental Assessment Act that the proponent has considered alternative means of carrying out its proposed project that are technically and economically feasible.

The Board has throughout these proceedings permitted cross-examination within the scope set out under CEA. In this instance, Emera has filed evidence that it has considered the marine route as an alternative means to the preferred corridor for which it now applies.

It is the appropriateness of the preferred corridor that Emera asks the Board to adjudicate, not the alternative means such as the marine route.

In deciding whether to grant or deny Emera's application, the Board must be satisfied with Emera's evaluation of alternative means, as set out in the Canadian Environmental Assessment Act. Should the Board be satisfied with Emera's evaluation of alternative means under that act, the Board is then only able to judge the appropriateness of the preferred corridor, as applied for by Emera.

The Board points out that in the argument phase of this hearing, parties are free to argue about the adequacy of the alternative means Emera has considered under the Canadian Environmental Assessment Act, including the technical and economic feasibility of those alternative means, and that parties can also argue the adequacy of the preferred route and the general land requirements as set out in the list of issues.

APPENDIX 7: Board Ruling on Objections to Late Filings, Filing of Late Letters of Comment and Requests to File Late Evidence, Ruling Number 10 (Letter dated 23 October 2006)

Background

The Board has received an objection to the Letter of Comment from Ms. L. McColgan, filed with the Board on 10 October 2006. A number of objections were also raised to the request to make an oral statement by Atlantic Institute for Market Studies (AIMS), whose request was filed

6 October 2006. The Board has also received Letters of Comment from Wallace MacMurray, on 13 October 2006, D.R. McColgan and David Hayward, filed with the Board on 17 October 2006. No objections have been received to the filing of these late Letters of Comment. All of these filings were made past the deadlines set out in the Hearing Order GH-1-2006 Timetable of Events, as amended.

The Board has also received two requests for permission to file late evidence from

Ms. J. Dingwell, dated 11 October 2006, and from Mr. D. Robichaud, dated 13 October 2006. Furthermore, on 19 October 2006, Mr. Robichaud filed evidence in the form of a report by Accufacts. In addition, Ms. D. Fuller provided photographs to Board staff on 12 October 2006. The photographs were not accompanied by a request to the Board for permission to file them late.

This ruling deals with all of these matters.

Views of the Board

Criteria that may be considered

The Board is of the view that it would be helpful for all parties to be reminded of the criteria the Board may consider in determining whether to grant requests to file late evidence, late Letters of Comment or late requests to participate.

On any motion for the filing of late evidence, the Board considers whether the applicant for the relief has persuaded the Board that:

(i) the evidence is relevant;
(ii) that there is a justification for filing late or that the party has acted with due diligence to try to meet the deadline; and
(iii) that there will be little prejudice resulting to any party if the evidence is accepted into the record (taking into account any mitigative measures).
(iv) In addition, the Board may consider other factors, such as whether the probative value of the evidence outweighs any prejudice to other parties as a result of the lateness of receiving it; the efficiency and fairness of the Board's regulatory process and the mandate of the Board to make a fully informed decision on an application before it.

In other words, the Board considers whether the applicant for the late participation has provided a justification for what interest the person has in the application before the Board, why it is applying late, and whether any other party would be prejudiced by its participation.

When considering late Letters of Comment or late requests to participate, similar criteria are taken into account. In the case of late participation, the Board may also consider other factors, including whether the participant is likely to materially assist in the understanding of the issues raised by the application, and whether those who already are participating are able to sufficiently advance concerns relating to the public interest. The Board will also balance accommodation of views of those with an interest in the application and the need for an efficient regulatory process.

Turning now to the individual objections, late Letters of Comment and requests to file late evidence, and considering the criteria set out above, the Board finds as follows.

Ms. McColgan's Late Letter of Comment

Letters of Comment often contain both unsworn evidence and aspects of final argument. With respect to Ms. McColgan's late Letter of Comment, the Board notes that while the content of the letter may be relevant to the issues before the Board in this hearing, Ms. McColgan has not provided a justification for filing the Letter of Comment past the deadline (12 September 2006) nor provided any explanation as to why the letter could not have been provided within the timeframe set out in the Hearing Order, In addition no explanation has been given as to why the parties to the hearing will not be prejudiced by the late filing. The Board also notes that a letter of objection to this late request has been filed in these proceedings

For these reasons, the Board has decided not to admit Ms. McColgan's Letter of Comment onto the record in this proceeding.

Mssrs. MacMurray, McColgan and Hayward's Late Letters of Comment

As permitted by the *National Energy Board Act*,[24] the Board has decided, on its own motion, to deal with the question of whether or not to admit late Letters of Comment filed by

Mr. MacMurray, Mr. McColgan and Mr. Hayward. These Letters of Comment have been sent to the Board well past the deadline for filing Letters of Comment, as set out in the Hearing Order. As with Ms. McColgan's letter, none of these submissions provide a justification for filing them past the Board's deadline for filing such letters. Nor do they provide an explanation as to why parties to the hearing will not be prejudiced by the late filings.

For these reasons, the Board has decided not to admit the late Letters of Comment by Mr. MacMurray, Mr. McColgan and Mr. Hayward onto the record in this proceeding.

24 R.S., 1985, c.N-7.

AIMS' Request to Make an Oral Statement

On 6 October 2006, AIMS submitted its request to make an oral statement. The request does not indicate the position AIMS will take at the oral hearing nor was it accompanied by a Letter of Comment. The request does not indicate why AIMS could not have filed its request by the deadline set out in the Timetable of Events, as amended. A number of parties objected to this late request of the basis that it was not submitted by the required deadline.

As noted in the Hearing Order, persons who make oral statements may not file anything in writing at the time of making their oral statements. Oral statement makers do not receive the application, are not entitled to ask information requests or cross-examine parties to the proceeding, or provide final argument. Oral statement makers are sworn in, make their oral statement, and then are available to be questioned on the statement by the Applicant and the Board and any other party with leave of the Board. As a general rule, only parties adverse in interest may seek leave to question oral statement makers.

The Board notes that the content of the oral evidence and argument to be provided by any oral statement maker is not known by any other party to this proceeding or other oral statement makers prior to the oral portion of the hearing, unless that person has accompanied their request with a Letter of Comment. While the content of the information is not known ahead of an oral statement being made, any prejudice suffered by a party as a result of the content of an oral statement can be rectified by questioning the oral statement maker by the party alleging prejudice.

In this instance, AIMS has not submitted its request within the timelines set out in the Hearing Order nor justified why a late filing should be accepted. Furthermore, AIMS has provided no explanation as to why parties would not be prejudiced by the late filing. While the Board notes that parties adverse in interest could be permitted to question AIMS on its oral statement, in this instance, the Board is not persuaded that, given the late date, AIMS should be permitted to make an oral statement at the hearing.

For these reasons, the Board has decided that AIMS shall not be permitted to present an oral statement at the oral hearing.

Ms. Dingwell's Request to File Late Responses to Information Requests

Ms. Dingwell has requested permission to file her responses to the information requests of Ms. Debly after the deadline set out in the Board's Ruling Number 9. She has indicated in her request that while she has gathered the information, she is awaiting verification by the Cherry Brook Zoo's director prior to submitting it, so as to ensure its accuracy. The Board has previously indicated that this information may be relevant to the issues before the Board and the resolution of those issues. The late information sought by the information request is of a factual nature; that is, it concerns facts related to the zoo's background. In the Board's view this type of information is not likely to create significant prejudice to other parties adverse in interest, particularly if the information is submitted prior to the commencement of the oral hearing. As an intervenor who has filed written evidence, Ms. Dingwell may be subject to cross-examination on this evidence by parties who are adverse in interest to her.

The Board is of the view that Ms. Dingwell's request should be granted. Ms. Dingwell is required to file this evidence with the Board and serve a copy on all parties prior to the commencement of the oral hearing.

Ms. Fuller's Photographs

During the pre-hearing planning conference held in November in New Brunswick, Ms. Fuller passed some photographs to a member of the Board's staff. Despite being advised of the procedure for filing late evidence, the photographs were not accompanied by a letter seeking permission to file the photographs late, or an explanation as to why these photographs could not have been filed in a timely manner. No explanation as to the relevance of these photographs to the issues before the Board was provided.

While in New Brunswick, the Board visited a number of locations suggested by parties to better their understanding of the evidence submitted. The majority of the locations in these photographs were visited by the Board. The Board is of the view that the probative value of these photographs does not outweigh the prejudice of introducing late intervenor evidence at this time in the proceeding. Accordingly, the photographs will not form part of the record in this proceeding and will be returned to Ms. Fuller.

Mr. Robichaud's Request to File Late Evidence

Mr. Robichaud has indicated in his 13 October 2006 letter that he was unable to find a specialist to complete a report for him until early in October. No report was attached to that letter, nor was a description of the subject matter or content, the name of the author or any other details related to the report. However, on 19 October 2006, Mr. Robichaud submitted, to the Board, a report by Accufacts entitled "*Commentary on the Risk Analysis For the Proposed Emera Brunswick Pipeline Through Saint John, NB*".

The Board has before it Mr. Robichaud's explanation of why he was not able to file the report earlier. It also has before it the report itself. However, before ruling on the admission of the report as late intervenor evidence, the Board has decided that it would like to hear comments from the Applicant, Emera Brunswick Pipeline Company (EBPC), regarding the admission of this report onto the record as late intervenor evidence.

Accordingly, EBPC is directed to file comments, if any, with the Board and serve a copy on Mr. Robichaud by no later that **5:00 p.m. Calgary time, on Tuesday 24 October 2006**.

Mr. Robichaud is directed to file a response, if any, with the Board and serve a copy on EBPC and its counsel by no later that **5:00 p.m. Calgary time, on Thursday 26 October 2006**.

APPENDIX 8: Board Ruling on Dr. Thomas's Request to Revisit the Scope of the Project (9 November 2006, Transcript Volume 4, lines 5409-5427)

Dr. Thomas seeks to revisit the scope of the Brunswick Pipeline project to include the Canaport LNG Terminal in concert with the proposed Brunswick Pipeline to form one project as a whole to be considered under CEAA.

Emera's counsel, Mr. Smith objects on the basis that the Board in its capacity as a responsible authority under the Canadian Environmental Assessment Act has already determined with other responsible authorities the scope of the Brunswick Pipeline and the cumulative effects that can be considered.

On June 23rd, 2006, Exhibit A-3, the Board determined the scope of the Brunswick Pipeline project. On that date the Board also set out that cumulative effects including the Canaport LNG Terminal and tanker traffic could still be considered to the extent that those effects are relevant as cumulative effects that are likely the result from the project in combination with other projects or activities that have been or will be carried out.

In a subsequent ruling addressing an outstanding information request dated the 21st of September, 2006 Exhibit A-27 the Board set out the process for cumulative environmental effects assessment. The Board takes this opportunity to reiterate how this process works. The approach to accumulative effects assessment reflected in Guide A, Section A.2.6 of the National Energy Board's filing manual is to undertake the following sequential steps.

One, identify the potential effects for which residual effects are predicted for the project being assessed. Residual effects are those which would still exist after any mitigation is applied.

Two, for each biophysical element where residual effects are identified, determine the spatial and temporal boundaries that will be used to assess the potential cumulative effects.

Three, identify other projects and activities that have occurred or are likely to occur within the residual effects boundaries. And identify whether those projects and activities will produce effects on the biophysical element within the identified boundaries.

Four, consider whether the effects in three as just identified act in combination with the project's residual effects and if so include those projects or activities in the cumulative effects assessments.

And then five, analyze the cumulative effects of the proposed project in combination with other projects and activities for each biophysical element.

This includes considering the residual effects of the proposed project in combination with the effects of other projects and activities and considering whether the proposed project is incrementally responsible for adversely affecting a biophysical element beyond an acceptable point, for example threshold.

The manual also states that the level of effort and scale of the cumulative environmental effects assessment should be appropriate to the nature of the project under assessment, its potential residual effects and the environmental in socioeconomic setting.

The Board also wishes to emphasize that one of the purposes of the Canadian Environmental Assessment Act as set out in paragraph 4(1)(b.1) is to ensure that responsible authorities carry out their responsibilities in a coordinated manner with a view to eliminating unnecessary duplication in the environmental assessment process.

As noted in the Board's June 23rd, 2006 letter the Canaport LNG Terminal including the LNG tanker traffic has already undergone an environmental assessment by Federal authorities under the CEAA Act and by provincial authorities. That assessment is publicly available on CEAA's online registry. Therefore in carrying out its cumulative environmental effects assessment of the Brunswick Pipeline the Board must ensure that it is not being duplicative of environmental assessment processes already undertaken.

And that it is the potential residual effects of the Brunswick Pipeline being assessed. The Board's consideration of other projects is only in the context of whether those other projects have effects that have the potential to act in combination with the Brunswick Pipeline's residual effects.

Further the nature of the Brunswick Pipeline project and its potential residual effects also inform the level of effort and scale of the cumulative effects assessment.

It is within this context that the Board can consider LNG Terminal or LNG tanker traffic to the extent that they act in combination with any residual effects of the Brunswick Pipeline.

The Board is of the view that Dr. Thomas' line of question does not fall within this context. Furthermore, Dr. Thomas' concern with respect to the EIS completed for the LNG Terminal cannot be addressed in this proceeding. The Board was not an RA for that project.

In addition the Board reiterates its comments on the scoping document that assessment of a project under the CEAA Act is to occur at the proposal stage. The environmental assessment for that facility has been completed. This is not the appropriate forum for Dr. Thomas to challenge the adequacy of the LNG Terminal EIS.

As a result the Board upholds Mr. Smith's objection to Dr. Thomas' questioning and we will hear from Mr. Court again beginning tomorrow at 9:00 a.m.

APPENDIX 9: Board Ruling on Ms. T. Debly's Notice of Motion to Require EBPC to Respond to Information Requests (IRs), Ruling Number 7 (Letter dated 21 September 2006)

On 7 September 2006, Ms. Debly filed a Notice of Motion to require EBPC to respond to certain IRs submitted by her and by the Estate of A.J. Debly. In addition, she requested an extension to the deadline for filing her evidence until 15 days after EBPC responded to these IRs. The Board sought comments from EBPC and Ms. Debly before making its determination, and received comments from EBPC dated 13 September 2006 and from Ms. Debly dated 18 September 2006.

Criteria for Responding to Information Requests

Before coming to the views of the Board with respect to the motion, it may be helpful to set the information request process into the context of the Board's overall role as a decision-maker.

While the Board is not formally bound by the rules of evidence, it may not take into account facts that have no logical connection to the decision it has to make, nor fail to take into account relevant and material facts. Relevant facts are provided in a number of ways, including through the application, through evidence filed in support of the application, and through responses to information requests posed by the Board or by parties to a proceeding, or through evidence filed by other parties to the proceeding.

Sections 32 to 34 of the *National Energy Board Rules of Practice and Procedure, 1995* (the Rules) deal specifically with the information request process. These rules provide that in response to an information request, a party must provide one of the following: a full and adequate response to the information request; a statement setting out the objection to responding and the grounds therefore; or a statement that the information is not available, setting out the reasons for the unavailability and the alternative available information that may be of assistance.

With respect to the general purpose of information requests and the criteria used to decide when an applicant will be directed to respond to a request, the Board has previously stated:

> The Board process allows for the use of written information requests for a number of reasons. Applications before the Board require the consideration of substantial information, much of it of a detailed and technical nature. Often this information is not conducive to an examination by the oral cross-examination process. Parties are therefore encouraged to obtain and examine such information through the established information request process. This process can be used to obtain the evidence necessary to test and explore the Applicant's case and, in the case of Intervenors, to assist them in preparing their cases.
>
> … When the parties cannot agree on the appropriateness of the Information Request or the adequacy of a Response, the Board is asked to provide direction. When considering such a motion, the Board looks at the relevance of the information sought, its significance and the reasonableness of the request. It seeks to balance these factors to ensure that the purposes of the Information Request

> process are satisfied, while ensuring that an Intervenor does not engage in a "fishing expedition" that could unfairly burden the Applicant. [25]

The criteria of relevance, significance and reasonableness have been applied in a number of proceedings before the Board.[26]

In determining whether the information sought to be elicited through the information request process in this proceeding should be provided, the Board is of the view that a similar analysis should be undertaken; looking at whether the information requested is relevant, whether it is significant (or probative) and whether the request is reasonable, and balancing these factors to ensure that the purpose of the information request process has been satisfied.

Cumulative Environmental Effects Assessment

In addition to the criteria set out above, as the IRs are raised in the context of the Board's letter on the Environmental Assessment Scoping Document, dated 23 June 2006, some discussion of how cumulative effects assessments are carried out in the Board's process is useful. The approach to cumulative effects assessment reflected in Guide A, Section A.2.6 of the National Energy Board's Filing Manual (the Manual) is to undertake the following sequential steps:

Identify the potential effects for which residual effects are predicted for the project being assessed (residual effects are those which would still exist after any mitigation is applied);

For each biophysical element where residual effects are identified, determine the spatial and temporal boundaries that will be used to assess the potential cumulative effects;

Identify other projects and activities that have occurred or are likely to occur within the residual effects boundaries and identify whether those projects and activities will produce effects on the biophysical element within the identified boundaries;

Consider whether the effects in (3) act in combination with the project's residual effects and if so, include those projects or activities in the cumulative effects assessment; and then

Analyze the cumulative effects of the proposed project in combination with other projects and activities for each biophysical element; this includes considering the residual effects of the proposed project in combination with the effects of other projects and activities and considering whether the proposed project is incrementally responsible for adversely affecting a biophysical element beyond an acceptable point (*i.e.*, threshold).

The Manual also states that "The level of effort and scale of the cumulative environmental effects assessment should be appropriate to the nature of the project under assessment; its potential residual effects; and the environmental and socio-economic setting."

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25 Westcoast Energy Inc. (GH-5-94), Transcript volume 3 (8 February 1995), at 340 -342.

26 For example, the Board's Letter Decision dated 5 September 2002 on Westcoast Energy Inc.'s Southern Mainline Expansion Project (GH-1-2002) and the Board's Letter Decision dated 14 February 2003 on Sumas Energy 2, Inc.'s application for an international power line (EH-1-2000).

The Board also wishes to emphasize that one of the purposes of the *Canadian Environmental Assessment Act* (CEA Act), as set out in paragraph 4(1)(b.1), is "to ensure that responsible authorities carry out their responsibilities in a coordinated manner with a view to eliminating unnecessary duplication in the environmental assessment process." As noted in the Board's

23 June 2006 letter, the Canaport™ LNG facility, including its environmental effects on air quality, has already undergone an environmental assessment by federal authorities under the CEA Act and by provincial authorities. That assessment is publicly available on the Canadian Environmental Assessment Agency's online registry.

Therefore, in carrying out its cumulative environmental effects assessment of the Brunswick Pipeline, the Board must ensure it is not being duplicative of environmental assessment processes already undertaken; and that it is the potential residual effects of the Brunswick Pipeline that are being assessed. The Board's consideration of other projects is only in the context of whether those other projects have effects that have the potential to act *in combination* with the Brunswick Pipeline's residual effects. Further, the nature of the Brunswick Pipeline project and its potential residual effects also inform the level of effort and scale of the cumulative effects assessment. It is within this context that the Board can consider terminal or tanker traffic *to the extent that they are relevant* as cumulative environmental effects that are likely to result for the Brunswick Pipeline in combination with other projects or activities that have been or will be carried out.

Specific Information Requests

IR EOD 1.3

The Board is of the view that IR EOD 1.3 from the Estate of A.J. Debly has been sufficiently responded to by EBPC in its responses. Accordingly, the Board will not direct EBPC to further respond to this IR.

IRs TD 1S.12, TD 1S.13, TD 1S.17 and TD 1S.18

Based on the context noted in the previous section, and balancing the three criteria of relevance, significance and reasonableness set out above, the Board is of the view that these IRs seek information that does not appear to be sufficiently significant or probative to the Board's assessment of the cumulative effects of the Brunswick Pipeline to require EBPC to undertake a further response to these IRs.

However, the Board notes that Ms. Debly and the Estate of A.J. Debly may submit, as part of their own evidence, any evidence they feel is relevant to the cumulative environmental effects assessment and the Brunswick Pipeline's impact on air quality.

IRs TD 1S.15, TD 1S.16, and TD1S.20 to 1S.22

With respect to IRs 1S.15, 1S.16, and 1S.20 to 1S.22 of Ms. Debly's IRs, the Board is of the view that the information requested is not sufficiently significant or probative to the Board's consideration of EBPC's application to require EBPC to provide a further response to these IRs.

In the Board's view, the information sought appears to relate primarily to the broad issue of global greenhouse gas emissions, and their environmental effects. For example, the environmental effects of upstream LNG production in another country do not have the ability to act cumulatively with the environmental effects of the Brunswick Pipeline except on a global level. A focused and accurate assessment of these environmental effects is not feasible. As noted in the Manual, some spatial and temporal boundaries to the cumulative effects assessment have to be utilized.

In addition, in the Board's view, calculating the emissions of upstream LNG production or determining the end use(s) of gas transported on the Brunswick Pipeline regardless of the site of the LNG production or the end use of the gas would not be helpful to the determination it must make.

Considering these environmental effects would be a difficult exercise of little, if any, probative value. It is too broad, too speculative and of too little utility to be useful for the section 52 determination to be made by this Board. As a result, the Board will not direct EBPC to respond further to IRs 1S.15, 1S.16, and 1S.20 to 1S.22.

Conclusion

For the foregoing reasons, the Board hereby denies Ms. Debly's motion requesting EBPC to further respond to her and the Estate of A.J. Debly's IRs, and for a 15-day extension to Ms. Debly's deadline for filing written evidence.