

## MEMO

**To: Environmental Issues Consultation Meeting Distribution List Members**

**From:** Philippe Reicher  
Manager, Public Affairs  
Terasen Pipelines  
CC Tony Epp, CEAA

June 24, 2005

**Re: Terms of Reference – Environmental Assessment for the TMX Anchor Loop Project**

In anticipation of an environmental assessment of the Terasen Pipelines TMX Anchor Loop Project, the Canadian Environmental Assessment Agency (CEAA) has been coordinating the development of a “Terms of Reference” (TOR) for the Environmental Assessment and Report. The draft Terms of Reference attached to this letter have now been received by Terasen Pipelines for comment.

### **Draft Terms of Reference**

The draft terms of reference have been provided to Terasen Pipelines by the Canadian Environmental Assessment Agency (CEAA) on behalf of other government agencies. They will define the scope of environmental and socio-economic studies undertaken by Terasen Pipelines in regulatory processes for the TMX Anchor Loop Project. Terasen Pipelines is currently conducting environmental field studies and intends to prepare an environmental assessment which achieves the high standards set out in these draft TOR for the Anchor Loop Project.

### **Stakeholder Feedback on the Draft Terms of Reference**

As we committed in previous meetings with TMX Anchor Loop Project stakeholders and Aboriginal groups, we are now providing these draft TOR to you for comment.

We would appreciate hearing your views on these draft Terms of Reference. Please provide any comments, concerns or feedback to myself no later than July 15. I will



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Bison Pipeline

ensure that they are forwarded to the CEAA and to Terasen Pipelines' environmental assessment team (Please feel free to also provide feedback or comments directly to Mr. Tony Epp, CEAA, by phone (780-422-7705) or by e-mail ([tony.epp@ceaa-acee.gc.ca](mailto:tony.epp@ceaa-acee.gc.ca))). It is my understanding that feedback received on the draft Terms of Reference will be considered by CEAA and other government agencies as the TOR for the TMX Anchor Loop Project are finalized.

On behalf of Terasen Pipelines I would like to thank for your ongoing interest and participation in the consultation program for the Anchor Loop Project.

**TERMS OF REFERENCE**

**ENVIRONMENTAL ASSESSMENT AND REPORT**

**FOR THE**

**TERASEN PIPELINES TRANSMOUNTAIN**

**TMX ANCHOR LOOP EXPANSION PROJECT**

**DRAFT - 14 June 2005**

Issued by:

Parks Canada Agency  
Fisheries and Oceans Canada  
Transport Canada  
Environment Canada  
Canadian Transportation Agency  
BC Ministry of Water, Land and Air Protection

## **Introduction**

Terasen Pipelines is planning to expand their existing TransMountain pipeline system between Edmonton, Alberta and Burnaby, British Columbia. The existing 24-inch pipeline was constructed in 1952 and came into use for westbound conveyance of crude oil and refined petroleum products in 1953. Now, in response to enlarging production from Alberta's oilsands and increasing demand for crude oil to U.S. and Asian markets, Terasen is proposing to increase their pipeline transport capacity to the west coast by constructing a 32-inch pipeline parallel to the existing line.

The project, referred to as "TMX – Anchor Loop", involves building three new pump stations and looping (or twinning) 178 kilometres of Terasen's existing pipeline system, including the route through Jasper National Park and Mount Robson Provincial Park. Eighty kilometres of the project is in Jasper National Park. A 1951 Government of Canada Order in Council authorized the original construction through Jasper National Park, and future consideration of looped pipelines as may be proposed.

Jasper National Park is a 10,878 km<sup>2</sup> protected wildland area located in Alberta's northern Canadian Rockies on the east side of the Great Divide. It is a cornerstone of a 20,000 km<sup>2</sup> UNESCO Canadian Rocky Mountains World Heritage Site, one of the world's largest blocks of protected areas. However, this largely wilderness park is transected by Highway # 16, the CN rail mainline and the TransMountain pipeline. All roughly parallel each other to traverse the park east to west by way of the Athabasca and Miette River Valleys. These utilities continue across BC's Mount Robson Provincial Park that adjoins Jasper National Park on the west side of the continental divide. Mount Robson Provincial Park also is a component of the Rocky Mountain Parks World Heritage Site that includes Banff, Yoho and Kootenay National Parks, and BC's Mount Assiniboine and Hamber Provincial Parks.

Sixty kilometres of TMX – Anchor Loop is in Mount Robson Provincial Park. A 1952 British Columbia Order in Council granted a right-of-way and through the provincial park that authorizes one or more pipelines within the right-of-way. The final 22 kilometres of TMX – Anchor Loop lies outside the western boundary of the provincial park.

Mount Robson Provincial Park at 2249 km<sup>2</sup>, is the second oldest provincial park in British Columbia. Mount Robson Provincial Park provides everything from developed, vehicle-accessible camping to remote wilderness valleys. Mount Robson Provincial Park also protects the headwaters of the Fraser River and Mount Robson, the highest peak in the Canadian Rockies.

The proponent – Terasen Pipelines, currently is in the design stage and is conducting consultations.

## **Regulatory Applications**

The Terasen Pipelines looping project is subject to a number of specific Acts and Regulations for the proposed route both inside and outside of Jasper National Park, federally and provincially. The *Canadian Environmental Assessment Act* (CEA Act) is an important federal legislation applicable to this project. The National Energy Board Act is a critical federal regulation because Terasen Pipeline must obtain a “Certificate of Public Convenience and Necessity” pursuant to Section 52 of the *National Energy Board Act*.

There are several federal permits, authorizations or actions which would trigger the *Canadian Environmental Assessment Act* that are anticipated to be required for the project, including:

- permission pursuant to the *Canada National Parks Act* (CNPA) (2000) for those parts of the project within Jasper National Park;
- a certificate of public convenience and necessity pursuant to section 52 of the *National Energy Board Act*;
- authorization by the Minister of Fisheries and Oceans pursuant to subsection 35(2) of the *Fisheries Act*;
- approval by the Minister of Transport pursuant to subsection 5(1) of the *Navigable Waters Protection Act* or subsection 108(2) of the *National Energy Board Act*; and,
- possible approval by the Canadian Transportation Agency pursuant to subsections 98(2) and 101(3) of the *Canada Transportation Act*.

In addition, there are several provincial (BC) permits, authorizations or actions that are anticipated to be required for the project including:

- permission pursuant to the *Park Act* for those parts of the project within Mount Robson Provincial Park;
- a boundary amendment process for Mount Robson Provincial Park;
- to comply with appropriate sections of the *Water Act* for works in, or about, a stream.

It is anticipated that Parks Canada, the National Energy Board, Fisheries and Oceans Canada, Transport Canada, and the Canadian Transportation Agency may all be responsible authorities for an environmental assessment under the CEA Act for the project. Environment Canada and Health Canada may act as expert departments. At this stage, the TMX Anchor Loop project is expected to be subject to an environmental screening under the CEA Act.

In preparation for an environmental assessment, the Canadian Environmental Assessment Agency has been tasked to be the administrative coordinator for the federal government’s multi-departmental interests in and responsibilities for the environmental assessment aspects of the project. Once the environmental assessment under the CEA Act is formally triggered, the Federal Environmental Assessment Coordinator will be named. There may

be harmonization with provincial environmental assessment processes in Alberta and British Columbia. Aboriginal interests have been identified for areas outside Jasper National Park, and may exist inside the park as well. There are known and documented First Nation interests in Mount Robson Provincial Park. The Government of Canada and the Province of British Columbia have a duty to consider aboriginal interests in project undertakings and environmental assessments.

In Jasper National Park, the *Canada National Parks Act* and its Regulations, and the *Canadian Environmental Assessment Act (2003)* are the main regulatory tools to define the review process for the project. For Parks Canada, the TMX Anchor Loop project triggers the CEA Act with Parks Canada as a Responsible Authority pursuant to Sec 5(1)(c), Sec 5(1)(d) and Sec 11(1) of the CEA Act. The CNPA mandates Parks Canada Agency to consider the ecological integrity of Jasper National Park as the first priority when making decisions about management of parks.

In Mount Robson Provincial Park, the *Park Act* and its regulations and the BC Parks Impact Assessment process are the main tools to define the review process for the project. For the area in British Columbia but outside of Mount Robson Provincial Park, the federal National Energy Board process will be followed. British Columbia's *Environmental Assessment Act 2002* does not apply to this project.

This document describes the expectations for an environmental assessment to meet the Regulatory Authorities duty to review and decide about the acceptability of the project. In general, the assessment will report:

- the environmental, cultural, social and economic impacts anticipated,
- measures to avoid and mitigate adverse effects,
- cumulative effects, and
- monitoring and follow-up needs.

Parks Canada, in consultation with other federal departments will make a determination regarding “the likelihood of the project to cause significant adverse environmental effects” for the component(s) of the project that might affect Jasper National Park. Other responsible authorities will also make their own independent determinations. It is anticipated Parks Canada’s review will be closely harmonized with the National Energy Board’s procedures – i.e. one environmental assessment review.

Terasen is alerted that Parks Canada will take close guidance from two reference sources in determining the adequacy of the environmental assessment. “The Responsible Authority’s Guide to the *Canadian Environmental Assessment Act*”, published by the Canadian Environmental Assessment Agency, provides explanation of the intent of the elements of the CEA Act. For the requirements of the National Energy Board regarding an environmental assessment for the project, the proponent is referred to the National Energy Board’s “Filing Manual”, published in April 2004. The National Energy Board “Filing Manual” 2004 provides good guidance regarding the content and topics to be addressed in an environmental assessment.

In addition to the following specific Parks Canada Terms of Reference, Parks Canada will consult both of these documents to guide the review process.

### **Scope of the Project**

The Responsible Authorities will determine the scope of the project pursuant to Sections 15 and 16 the CEA Act. The following represents guidance related to the scope of the project based on the project as it is currently proposed and understood.

The scope of the project refers to those components of the proposed TMX Anchor Loop pipeline-looping project that should be considered part of the project for the purposes of the environmental assessment. In this section of the environmental assessment report Terasen will provide a description of the project, including:

#### Project Description

- Need for the project
- Alternatives to the project
- Existing infrastructure and operation, including access points
- Planning and studies
- Elements of the proposed looping
- Related projects – including abandonment of existing infrastructure
- Alternative ways to undertake the project
- Preferred route and alignment alternatives
- Governance and management arrangement to deliver the project
- Construction
- Testing and start-up
- Reclamation and restoration
- Operation and ongoing maintenance of the new pipeline and station sites
- Removal and reclamation of abandoned components of existing pipeline
- Monitoring and follow-up

An important element of Terasen’s description of the project is the “principal project/accessory test”. The purpose of the principal project/accessory test is to determine which physical works should be included within the scope of the project. The principal project is the undertaking that triggers the environmental assessment and for which a decision is to be made, permits issued, and federal powers exercised. The “principal project” involved in the Terasen TMX - Anchor Loop pipeline proposal is planning, construction and operation of a pipeline loop that approximately parallels the existing line for 178 km. It is expected that Terasen will provide a detailed description of the principal project, and accessories, as explained below.

Accessories are any physical works or activities associated directly with the principal project by way of “interdependence” and “linkage”. These two criteria establish whether accessory projects exist that must be considered to be within the scope of the project.

They are explained in the Canadian Environmental Assessment Agency's Responsible Authority's Guide:

**Interdependence:** If the principal project could not proceed without the undertaking of another project, the two may be considered to form a single project.

**Linkage:** If the decision to undertake the principal project makes the decision to undertake another project inevitable, the two may be considered to form a single project.

Pursuant to the *Canadian Environmental Assessment Act*, a responsible authority can combine two or more triggered, but apparently separate, projects into the same environmental assessment if it determines the projects are "so closely related" that they can be considered to form a single project. In order to make the "closely related" determination, the accessory test criteria described above are applied, plus a "proximity" criterion – that is, if the geographic areas and/or time coincidence of the two separate projects overlap, the two may be considered to form a single project. For Parks Canada's purposes, interdependence, linkage and proximity considerations would be triggered only if they relate to Jasper National Park, including trans-boundary considerations (Sec 48 of the CEA Act).

### **Scope of Assessment**

The Responsible Authorities will determine the scope of the assessment pursuant to Sections 15 and 16 the CEA Act. The following represents guidance related to the scope of the assessment based on the project as it is currently proposed and understood.

### **Considerations**

#### **1. The Canadian Environmental Assessment Act**

The *Canadian Environmental Assessment Act* 2003 (CEAAAct) provides legislated guidance for the conduct of environmental assessment of the Terasen TMX - Anchor Loop pipeline-looping project. Parks Canada is committed to full application of the expectations of the CEAAAct, including the recently enacted elements of Bill C9, in the assessment of the environmental effects of the Terasen TMX – Anchor Loop project.

At this time – June 2005, it is anticipated the environmental assessment will be conducted at the Environmental Screening level of the CEAAAct. Factors to be considered include those listed in section 16(1) of the Act. Those are:

16 (1) every screening or comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:



- (a) the environmental effects of the project, including 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;
- (b) the significance of the effects referred to in paragraph (a);
- (c) comments from the public received in accordance with this Act and the regulations;
- (d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; and
- (e) any other matter relevant to the screening, comprehensive study, mediation or assessment by a review panel, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of a screening, the Minister after consulting with the responsible authority, may require to be considered.

Parks Canada expects Terasen to further undertake to provide a detailed explanation of the need for, and purpose of the project, alternative means of carrying out the project that are technically and economically feasible, the need for and the requirements of any follow-up program in respect of the project, and 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.

Environmental effects of the project are changes in the biophysical environment caused by the project, as well as certain effects that flow directly from those changes, including effects on:

- ▶ human health;
- ▶ socioeconomic conditions;
- ▶ physical and cultural heritage, including effects on things of archaeological, paleontological, or architectural significance;
- ▶ the current use of lands and resources for traditional purposes by aboriginal persons.
- ▶ environmental effects also include the effects of any changes to the project that may be caused by the environment.

## **2. Parks Canada Agency Acts, Plans and Policies.**

The *Canada National Parks Act* 2000 and Parks Canada's *Guiding Principles and Operational Policies* 1994 both provide corporate mandate level guidance for considering the propriety and effect of the Terasen pipeline TMX – Anchor Loop proposal. The recently revised Canada National Parks Act provides direction for decision-making regarding projects that could affect the natural environment, to wit:

*Canada National Parks Act* subs 8(2): “The maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the

first priority of the Minister when considering all aspects of the management of the parks”.

Ecological integrity means “with respect to a park, a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes”.

From *Parks Canada Guiding Principles and Operational Policies*:

3.1.1 “National Park ecosystems will be given the highest degree of protection to ensure the perpetuation of natural environments essentially unaltered by human activity”.

The *Jasper National Park of Canada Management Plan* (2000) sets forth policies and land-use direction for the management of the park. The park plan makes special note of concern about linear infrastructure already in the park – e.g. “The Yellowhead Trans-Canada Highway (16), park roads, a pipe line and the rail line fragment the landscape and, in some cases, block the movement of wildlife” pg 10. All proposed projects and activities must be demonstrated to be consistent with the provisions of the approved park management plan.

Parks Canada will be attentive to direction arising from the forgoing corporate documents that guide Parks Canada in decision making about management of Jasper National Park. Terasen is advised to review and carefully consider these and other Parks Canada acts, plans and policies in preparing and assessing their TMX – Anchor Loop project proposal.

### **3. Other Acts and Regulations**

Other federal Acts, Regulations and policies will come into consideration for planning, constructing and operating the Terasen pipeline project in Jasper National Park. These include:

- ***The National Energy Board Act***
- ***The Federal Fisheries Act***
- ***The Navigable Waters Protection Act***
- ***The Species at Risk Act***
- ***The Migratory Birds Convention Act***
- ***The Canadian Environmental Protection Act***
- ***The Federal Policy on Wetland Conservation***
- ***The Canada Wildlife Act***
- ***The National Historic Sites and Monuments Act***
- ***The Transportation of Dangerous Goods Act***
- ***The Railway Safety Act***
- ***The Canada Transportation Act***

In addition, there are several provincial Acts, Regulations and policies that need to be addressed in the assessment for British Columbia, including Mount Robson Provincial Park. These include:

- ***Park Act***
- ***Water Act***
- ***Wildlife Act***
- ***Environmental Management Act***
- ***Heritage Conservation Act***
- ***Master Plan for Mount Robson Provincial Park***
- any other provincial Acts, Regulations and policies that may be applicable to the project.

Each of these Acts, Regulations and Policies – federal and provincial, is to be examined for its application to the pipeline looping project. In those instances where a duty is triggered, Terasen is to formulate and describe the elements of the appropriate course of action.

Also, acts and regulations pertaining to CNR rail works, ATCO gas lines and Telus telecommunication facilities are to be examined and considered for their application to the Terasen TMX – Anchor Loop project.

The ***Navigable Waters Protection Act*** triggers particular requirements for consideration and mitigation to safeguard navigable waters. The proponent is to investigate and report on the following topics.

- All proposed works in, on, over, under, through or across any navigable waterway must be clearly identified (if the navigability status of a waterway is unknown, a navigability request should be submitted to the Navigable Waters Protection Program as early as possible for a determination and possible permit authorization). Also, any proposed changes to existing infrastructure in, on, over, under, through or across a navigable waterway should be identified. This would also include any temporary works that may impede vessel Navigational Safety.
- Appropriately scaled maps illustrating the location of all existing waterways and in-water works need to be provided. Included should be detailed drawings (both plan and profile views) of the proposed in-water work, as well as existing crossing;
- Photographs of the existing conditions at proposed work locations (crossings, upstream and downstream views are required);
- Any known waterway user's (including recreational, commercial and traditional) should be identified and details regarding any consultations with these user groups and/or individuals. Baseline information on any known potential vessel use (commercial/recreational) on all water bodies that have pipeline crossings, should also be included in information provided under the NWPA;

- Plans and descriptions of all temporary works including coffer dams, temporary crossings, or other infrastructure should be provided, in addition to any proposed permanent structures;
- A description of proposed construction schedules and methods for all in-water works; and
- Details regarding the predicted impact on navigability and a description of any proposed measures for the protection navigation safety during and upon completion of the proposed project.

The *Species At Risk Act* obligates a project proponent to investigate and report on the presence and implications of the project on flora and faunal defined as “at risk”. Terasen Pipelines is expected to discuss the potential impacts of the project on species at risk in relation to applicable legislation, policy, management plans, mitigation measures, recovery plans or land use planning initiatives. The assessment should discuss effects the project may have on;

- listed wildlife and plant species,
- critical habitat or the residences of individuals of that species.
- mitigation measures to avoid or lessen those effects,
- monitoring programs to assess the impacts from the project and the effectiveness of mitigation measures, and
- discuss how the mitigation measures applied are consistent with any applicable recovery strategy and action plans.

Additionally, the assessment must provide the information necessary to evaluate the potential impacts of the project on species of concern listed by the Province of British Columbia and the Province of Alberta.

#### **4. Sustainable Development**

The Parks Canada Agency *Sustainable Development Strategy* will apply to the Terasen pipeline project. The global definition of “sustainable development” is:

*“development that meets the need of the present without compromising the ability of future generations to meet their own needs”.*

Parks Canada’s mandate fits well into that expectation;

*“To protect and present nationally significant examples of Canada’s natural and cultural heritage, and to foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity of these places for present and future generations”.*

Terasen will explain the sustainable development implications of the project in the context of the goals and purposes of Jasper National Park. Parks Canada will employ contemporary expectations of sustainable development in examining the Terasen TMX –

Anchor Loop pipeline proposal. All traditional aspects of assessing large, linear project planning will be pursued, including but not limited to – wildlife, vegetation, hydrology and watershed, archaeological and cultural values, aboriginal interests, etc. Also, new concepts of continental wildlife habitat connectivity – Y2Y, landscape continuity for biological integrity and genetic diversity, critical mass population topics, etc. will be considered.

## 5. Valued Ecosystem Components

Valued ecosystem components (VECs) are components of the natural and human world that are considered valuable by participants in a review process. Ideally, these components would be specific and measurable. In a national park setting this is straightforward when dealing with tangible topics – such as hectares of Montane meadowland or lodgepole pine forest. However, this intellection is challenging when confronting concepts such as integrity of wilderness, or scientific theories such as genetic connectivity. The purpose of identifying VECs in Jasper National Park and Mount Robson Provincial Park for the TMX – Anchor Loop project is to focus the environmental planning and impact assessment on the most important and known sensitive resources that might be affected by the project. VECs need not be only environmental in nature; they can be attributed to economic, social, aesthetic or ethical reasons as well. In the case of the Terasen pipeline looping project, public safety and perception of the integrity of the wildlands of Jasper National Park and Mount Robson Provincial Park are equally as important as the protected area natural resource considerations.

For the purpose of making decisions about this project, the environmental assessment will focus on (emphasize) the following environmental issues:

- terrestrial wildlife habits and habitats, including connectivity and wildlife response to construction and post construction conditions. Here, a distinction is to be made between those species that adapt more readily to human activities (such as deer and elk) and other species that are less resilient and at greater risk to man-caused mortality when displacement, habituation, or habitat loss occurs eg - grizzly bears, wolves, wolverines and cougars.
- species at risk or of special concern – Haller’s apple moss, western toad, bull trout, (BC blue-listed species), boreal moonwort (*Botrychium boreale*, BC Red-listed species), Canada anemone (*Anemone Canadensis*, BC blue-listed species), purple-leaved willowherb (*Epilobium ciliatum* ssp. *watsonii*, BC blue-listed species), meadow willow (*Salix petiolaris*, BC blue-listed species), grizzly bear, mountain caribou and wolverine
- protection and restoration of aquatic habitats and species – particularly special and indicator species such as northern pike, bull trout, lake whitefish and harlequin duck habits and habitats. Spawning habitat and aquatic connectivity are important considerations. Associated ponds and wetlands are integral

components of the aquatic environment of the Fraser, Miette and Athabasca Rivers. The Pocahontas Ponds, the confluence with the Snaring River, Moose Marsh and Yellowhead wetlands are particularly sensitive locations.

- migratory birds
- general protection of the Fraser, Athabasca and Miette Rivers, their tributaries and associated riparian ecosystems in the vicinity of the project will be important. There are 52 locations of linear infrastructure interference with the natural flow of water between the town of Jasper and the east gate. Protection and restoration of the fluvial land forming processes of both the Athabasca and Miette Rivers and their tributary watersheds is a goal of the Jasper National Park Management Plan. The sand dunes are a noteworthy example of unique landforms resulting, in part, from natural fluvial processes in the Athabasca valley. Equivalent protection of water resources and fluvial processes is necessary in the Fraser River watershed in Mount Robson Provincial Park.
- protection of the scarce Montane habitat of the Athabasca River valley, including its evolutionary processes, such as fire. The Douglas fir savannah is a noteworthy example of a unique component of the Athabasca valley Montane. The Montane can be adversely impacted by both direct and indirect stresses, as evidenced in the Three Valley Confluence area (see Cumulative Effects below).
- in Mount Robson Provincial Park, old growth stands of western red cedar/western hemlock and Douglas fir are significant.
- avoidance and protection of the special cultural and archaeological resources of the Athabasca Valley. The historic context of the Athabasca and Miette River Valley, and extending on through the Yellowhead Pass to Moose River is noteworthy. This route was an important pre Euro-Canadian contact route for aboriginal travellers. Uncharted pre-contact burial sites can be anticipated, particularly in the Miette River valley. After David Thompson's explorations the route became increasingly important as a travel and trade passage through the Northern Rockies, into the headwaters of the Fraser River, leading on to the Pacific Ocean. Many artefacts have been discovered; likely others remain to be found. Significant historical railway and Japanese internment sites also exist in the Yellowhead Pass – Moose River corridor. Pipelining projects must be carefully researched and undertaken not to inadvertently destroy our historical heritage. It is important to appreciate that once damaged or destroyed, valuable archaeological or cultural sites are lost forever, they cannot be restored.
- maintenance of existing ecosystems and restoration of aquatic and terrestrial landscapes previously disturbed, for example - wetlands (e.g., Pocahontas ponds), rock cuts (e.g., Windy Point) and sensitive locales (e.g., Snaring River complex) along the original 1952 pipeline alignment.

- avoidance and protection of human experience factors including landscape views and aesthetics, recreational trail use, and mechanical noise, for example in sensitive areas such as the entrance to the Snaring River Valley and in the viewpoint/campground area at Mount Robson Provincial Park.
- the safe and continued use of all navigable waterways for recreational, traditional and commercial purposes, both inside and outside of Jasper National Park.
- capacity of local infrastructure to support changes to utility demand – including in particular the electrical supply.

## 6. Spatial and Temporal Boundaries

The assessment will need to address a variety of different time and space variables depending on the topic being investigated and reported – social, environmental and economic. Time and space considerations will vary for the natural environment component of the assessment. The existing built structures have functioned for 53 years, with many years of functional future expected. It can be anticipated the longevity of the new pipeline will be similar. Perhaps the functional time line for the project is one hundred years. The functional period for the replacement of mature lodgepole pine forests that will be disturbed by the project is about 80 years. Parks Canada uses a rule of thumb of ten years to restore ground and shrub cover and to see the early seral stages of forest recovery. The assessment recognizes that some historically forested lands will be permanently converted to grass and shrub seral stages.

In general the spatial scope of consideration for natural features may include

- site specific – e.g. a stream crossing, den site, highly visible location, etc
- local – in the Fraser, Athabasca and Miette River Valleys,
- regional – in Jasper National Park and Mount Robson Provincial Park,
- supra-regional – in Alberta and British Columbia, and
- continental – Y2Y.

For vegetation, soils and geology, aquatic environments and other site-specific resources, the space will be the Fraser, Athabasca and Miette River Valleys or the sites of potential direct impact.

Wide ranging species – such as grizzlies, wolverine, caribou and lynx require a wider spatial scope of consideration- well outside the Fraser, Athabasca and Miette River watersheds in some instances. Wolves originating in the national parks have been recorded to travel hundreds of kilometres before returning to their home territory, including regularly into Mount Robson Provincial Park. In cases such as these the effect of the project is a very large setting – Yellowstone to Yukon probably is reasonable. Valued Ecosystem Components (VECs) and spatial boundaries will be further defined through consultation with the public, key stakeholders and expert government departments.

Social and economic considerations will have different space and time considerations than the natural component. For Parks Canada's and BC Park's interests the social and economic topics will be limited to effects on the park, although it certainly is recognized social and economic effects extend well beyond the park. For Parks Canada and BC Parks the social effects relate largely to concerns about:

- human safety and inconvenience during the construction phase
- interference with visual and auditory appreciation of Jasper National Park and Mount Robson Provincial Park, during both the construction and operation phases of the project
- diminishment of the sense of undisturbed wildlands of Jasper National Park and Mount Robson Provincial Park and reduction in the integrity of the World Heritage Site status
- diminished capacity of the natural resources of Jasper National Park and Mount Robson Provincial Park to fulfill the expectation of maintaining the park unimpaired for future generations of park visitors
- complications in Parks Canada's future plans for upgrading Highway # 16
- possibly increasing costs for Parks Canada's routine infrastructure maintenance needs
- complications or exceedance of capacity in infrastructure owned and operated by others, particularly with specific attention to local electrical demand and supply, both present and future.

The scope of social concern about the project in Jasper National Park must be defined, in part, during early stages of consultation with stakeholders and interested public.

## **7. Cumulative Effects Considerations**

Cumulative effects consideration refers to the concern that the effects of multiple, independent projects may be additive when they occur in the same time and/or same space. Although a social or natural environment may be able to withstand the effects of a single project, it could be overwhelmed, damaged and permanently impaired by stresses arising from adverse effects of several coinciding activities or projects. Consequently it is important to consider past and enduring impairments arising from the original TransMountain pipeline facility and operation, and their possible restoration to avoid cumulative impacts. Similarly, it is important also to become informed about other projects, past, present or reasonably foreseeable that might combine with the effects of the Terasen TMX – Anchor Loop pipeline looping project to create cumulative adverse impacts.

Electrical power supply is limited in the Jasper area since power is locally generated – there is not a provincial grid connection. The impact of the Terasen project must be carefully examined to determine the cumulative effect on power demand, and the implications for accessory projects.



A highway, a rail line, the TransMountain pipeline, a fibre optic cable and a natural gas pipeline already transect the Fraser, Athabasca and Miette River valleys. Additionally, commercial services, tourist accommodations, a golf course, the Jasper townsite, trails and campgrounds and Parks Canada's infrastructure all combine to affect the natural environment of the area. The Three Valley Confluence of the Athabasca, Miette and Maligne Rivers near the town of Jasper is known to be a wildlife crossroads of Jasper National Park. This area in particular is one of the Montane locations under exceptional stress, and now is subject to a recovery and restoration plan lead by Parks Canada, and supported by a host of stakeholders.

Effects of pressures well outside Jasper National Park must be considered in the case of wide ranging animals –e.g. grizzly bears and wolves. The Foothills Model Forest project addresses these kinds of concerns. This topic is further explored in the section on Time and Space Boundaries.

Forests in both Jasper National Park and Mount Robson Provincial Park are host to pine beetle infestation. The Terasen environmental assessment is to consider this situation and discuss any issues, mitigations or best management practices that arise from the projects' influence on the forest health situation. Similarly, parks' use and intentions for forest fire management are to be considered in the placement, construction and operation of the looped pipeline.

Cumulative effects will be an important consideration in Parks Canada's examination of the Terasen TMX – Anchor Loop pipeline looping project – this must be addressed thoroughly in the environmental assessment document.

## **8. Intent and Content of the Environmental Assessment**

The Environmental Assessment Report must identify potential adverse environmental impacts of the project, propose measures to avoid and mitigate these effects, and provide information necessary to allow Parks Canada to determine the likelihood to cause significant adverse environmental effects.

In general, the environmental assessment is intended to present:

- an explanation of the need for the project, with a review of alternatives to the project, and a description of alternative ways and means to carry out the proposal, and where applicable indicate their potential environmental effects and impacts. Compare identified alternatives and the anticipated environmental effects and impacts of the alternatives. Discuss reasons for not selecting any identified alternatives.
- an analysis of each alternatives capacity to meet the goals of problem resolution, both for Terasen's and Parks Canada's objectives
- a description of the principal project being proposed, and any accessory projects

- an analysis of Acts, policies, regulations, and approved plans applicable to the project. To maintain or restore natural and cultural values for future generations is a primary goal for BC Parks. Maintenance or restoration of ecological integrity is the first priority when considering all aspects of the management of national parks. For Parks Canada and BC Park's these considerations will be imperative in evaluating all elements of the Terasen pipeline environmental assessment for Jasper National Park and Mount Robson Provincial Park
- a description of the environment that will be affected by the project, including biological and socio-economic conditions
- an analysis of the interaction of the project with the environment with emphasis to identify instances where adverse environmental effects might arise
- an identification and assessment of mitigation measures, including new techniques to consider to avoid adverse effect
- a report and analysis of concerns expressed by the public and persons with particular stakeholder interest, and Terasens response
- an identification of residual adverse environmental effects
- how the principles of pollution prevention, waste minimization and recycling have been incorporated into the project design including methods and technologies to reduce waste quantities to the lowest practical levels.

### **Content of the Environmental Assessment**

The Terasen pipelines environmental assessment is to undertake a thorough examination of the potential effect of the project on valued ecosystem components (VECs) in particular. These include bull trout and their habitat, migratory birds, harlequin ducks and their habitat, and sensitive wildlife that are highly valued components of the national park ecosystem - grizzly and black bears, moose, elk, deer, bighorn sheep, Rocky Mountain goats, wolverines, cougars, lynx, wolves, northern pike and lake whitefish are notable species in this area. Haller's apple moss and western toad, and grizzly bear, wolverine and mountain caribou, are species respectively at risk, or of special concern in Jasper National Park. Other species of wildlife are present and are to be considered for potential effect by the proposed works. Wetland habitats are of particular value and at some risk from the project. Minimizing the construction and operational impacts on terrain and aquatic/riparian environments will be an important issue. The assessment is to examine the proposed mitigation measures and suggest additional or alternate practical methods where adverse effects can be avoided or reduced. The spatial context of the assessment will be variable ranging from a specific site of sensitivity to a much wider regional scale for wide ranging species potentially affected by the project. The temporal scale will require short and long term considerations for different ecosystem components and construction and operational impacts.

The assessment is to explain and justify the methods used to predict potential impacts of the Project on the VECs, on interactions among these components and on any broader relationships with the physical, biological and human environments. In describing methodology:

- explain how scientific, engineering, traditional and other knowledge was used to reach conclusions
- identify and justify any assumptions made
- specify data collection methods and report the uncertainty, reliability and sensitivity of any models used to reach conclusions
- specify and reference sources for any contributions based on traditional knowledge

Although the assessment is to focus on specific VECs that are to receive special attention, the environmental impact analysis is to consider and report on the effect of the project on other elements of Jasper National Park and Mount Robson Provincial Park's environment as well. The degree to which each of the topics is researched and discussed is dependent on the extent of interaction of the project and the resource being examined. For example there may be little to report about effects on geologic resources. Substantially more discussion will be expected about the interaction of the Terasen TMX – Anchor Loop pipeline-looping project with fish and aquatic resources (see below). Also, the effect of the environment on the project is to be addressed - e.g. seasonal limitations on construction, sensitive times for sensitive species, etc. In addition to the VECs, the effects of the project on the following environmental factors will be investigated and reported:

- hydrologic and watershed resources, both surficial and groundwater
- terrain and geomorphology
- soils and geology
- vegetation, particularly Montane and riparian ecosystems
- prevention and control of non-native invasive plant species
- fish and wildlife, in addition to the VECs mentioned above
- air quality and climate
- noise, visibility and aesthetic considerations
- aboriginal persons interests
- navigable waters
- archaeological and historic resources
- toxic and hazardous products or circumstances

The *Federal Fisheries Act* triggers particular study and reporting requirements pursuant to protection of fish and fish habitat. The following are the reporting expectations.

**Watercourses** – a thorough assessment of the aquatic community (fish and invertebrates) and habitat in the study area and around any water-bodies that could be affected by the project is required. The assessment should include at a minimum:

- identification of the study area, assessment methods and any historical sources and/or previous aquatic assessments or studies used to describe the existing aquatic community.
- identification of any past / present developments and undertakings in the area that may result in a cumulative impact on the Study Area.
- a description and map of the fish communities and habitat in all water-bodies affected by the Project. Identify areas used for spawning, rearing, nursery,

migration or over wintering. Include the common names, life stages utilizing these areas and habitat requirements for these species.

- identify construction, operation, reclamation activities, including timing schedules and how these might affect fish and fish habitat.
- the effects of stream alterations, placement of in stream structures, changes to bank and bed substrate and stream flow parameter changes such as velocities, discharge and gradients.
- the discharge (quantity, quality and timing) of aqueous contaminants, chemical additives and the potential environmental effects of such releases;
- a description of the mitigation and enhancement measures employed to prevent or minimize adverse effects from the deposit of sediment, deleterious substances and habitat alterations or destruction.
- the EAR should describe mitigation to address potential barriers to fish passage during construction resulting from isolation techniques. Should work be done on the floodplain during the closed timing period, a contingency plan outlining mitigation to address potential high water events should be included.
- an estimate of the area of fish habitat that may be lost and a plan to compensate for any net loss in productive capacity of fish habitat that may result from the Project.

**Wetlands** - require several points of attention different than aquatic communities

- include a description of any monitoring program, including both compensation monitoring and construction monitoring, developed to evaluate the effectiveness of mitigation measures for maintaining habitat quality and of the compensation structures for use by the fish community.
- describe the location, size of wetlands, wetland type, condition, flora and fauna.
- describe wetland function and ecosystem components that contribute to the integrity of the wetland. Discuss how wetland function and ecosystem components that contribute to the integrity of the wetland will be affected by the Project.
- describe the ecological function the wetland is contributing, including but not necessarily limited to; quantity of surface water and groundwater, quality of surface water and groundwater, terrestrial and aquatic habitat. Describe how the ecological function the wetland is contributing may be affected by the Project.
- discuss mitigation measures to address the no net loss of wetland function.

Crossing watercourses and wetlands requires special care to avoid damage of these sensitive environments. Describe and evaluate the potential impacts of the project watercourse and wetland crossings including a consideration of:

- the proposed watercourse crossing and temporary vehicle crossing methods:
- for each proposed method, describe timing and duration, the anticipated extent of physical disturbance, blockages or changes to flow patterns, need for blasting and the factors that would influence these issues
- for each method, describe how habitat could be altered (instream, riparian and water quality)

- identify any criteria that would be used to select the methods to be used for each watercourse crossing
- standards or guidelines related to watercourse crossings that would be applied

### **Migratory Birds**

Describe and evaluate the potential impacts of the Project on migratory birds including a consideration of;

- disruption of sensitive life stages or habitat (e.g. nesting, rearing, staging, moulting, migrating)
- fragmentation or alteration of habitat (e.g. siting of project facilities, watercourse crossings, habitat quality), and
- visual or auditory disturbance, including habitat avoidance in relation to Project facilities or activities.
- discuss mitigation measures and strategies to minimize the impact impacts on migratory birds.

**Air Quality** - describe and evaluate the potential impacts of the project on air quality, including a consideration of:

- the project activities and components which would be sources of air emissions
- emissions of concern by source for each project phase, including quantity, timing and duration, normal operation conditions and upsets
- the air quality parameters that would be affected by these emissions (e.g. dust, particulates (PM10 and PM2.5), sulphur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide, volatile organic compounds, ground level ozone (O3), odour, etc.)
- relevant territorial and federal air quality standards or guidelines should be discussed, as appropriate, including their purpose and use in relation to the project phases.

**Greenhouse Gases and Climate Change** - identify the sources of and total greenhouse gas (GHG) emissions of the project. Discuss the project's marginal contribution to total provincial and national GHG emissions on an annual basis. Identify any stages or elements of the project that are sensitive to changes or variability in climate parameters. Discuss what impacts the changes to climate parameters may have on the on Project.

Additionally, the report will include a **Socio-Economic Impact** assessment that considers:

- elements of the project that will affect traveller safety
- land use, recreation and visitor opportunities
- considerations related to navigation safety and navigability of affected waterways

**Accidents and Malfunctions** -describe and evaluate the potential impacts of Project-related accidents and malfunctions on the environment. Identify and discuss, for each project phase,

the potential accidents or malfunctions that occur as a result of the Project, including a consideration of:

- spills of a hazardous material (on land, ice and in water)
- fire
- use of explosives
- transportation accidents (air, land, water)
- rupture or failure of a pipeline (on land, beneath a watercourse)
- failure of components at a compression or processing facility
- particular attention should be focused on sensitive components of the environment that could be affected in the event of an accident or malfunction.

**Emergency Response and Environmental Management** - describe company programs regarding facility monitoring, emergency preparedness and environmental management. The descriptions should be in sufficient detail in order to understand the scope of the programs, how they work, how they are developed, the link to any regulatory requirements and the expected components of these programs.

#### **Facility Monitoring**

The programs to monitor the physical condition of Project facilities and their operation are relevant to understanding how Proponent design and management reduces the risk of an accident or malfunction occurring and is able to detect one, if it occurs. Describe the safety and detection measures that would be incorporated at Project facilities, including such things as: access restrictions, monitoring and surveillance systems, pipeline integrity programs, malfunction detection devices, emergency shutdown systems, fire fighting systems, emergency power units and communications systems.

#### **Emergency Preparedness**

Provide a general description of the Proponent's Emergency Response Procedures, including the company level of preparedness, safety, response capability and procedures in the case of an emergency. Include the types of Emergency Response Procedures that would be developed, the purpose of the programs and what the programs are intended to achieve. Identify the facilities and activities for which procedures would be developed.

#### **Mitigation Measures and Residual Effects**

The general approach is to first identify and describe the baseline conditions that could be affected by construction or operation of the project. The anticipated adverse impacts are then to be identified, with a prediction of the extent to which negative effects can be avoided or mitigated by planning, project design, mitigation measures and operational practices. It is important to appreciate the project planning and environmental assessment will be undertaken with strict guidance for the requirements arising from the *Canada National Parks Act* intent for ecological integrity. Taking into consideration mitigation measures and best management practices, the nature of adverse, residual effects will be discussed. Subsequently, Parks Canada will use factors of magnitude, geographic extent, duration, frequency, reversibility and potential cumulative effects to determine impact

significance. A knowledge gap analysis is to be performed and a correcting course of action proposed to address deficiencies pertinent to making sound conclusions.

## **8. Public Participation and Proponent Response**

This project will be registered in the CEA Agency Registry, and will be subject to public consultation and input. It is expected that the National Energy Board will convene hearings as part of its process for evaluating the Terasen proposal. Other federal government departments and interested stakeholders may be involved.

During preparation of the Terasen TMX - Anchor Loop pipeline looping plan and environmental assessment it is expected Terasen would undertake a public information and consultation program. A range of program activities will be used to ensure stakeholders receive: early and consistent public notification, access to information, and the opportunity to evaluate and respond to key project information in advance of key decisions and milestones. The final scope and design of the public involvement program should be responsive to input from interested stakeholders.

In addition to establishing and maintaining a project registry and stakeholder database, public access to information for recent large projects in national parks have been successfully facilitated through: regular public newsletters, portable displays, a project website, and written material available at select Parks Canada offices and public libraries. Media communiqués and announcements may be issued if appropriate. Draft and final environmental assessment documents could be presented in written and electronic format. Public input should be encouraged through on-going stakeholder meetings and open houses as deemed appropriate.

Public comments could be received in writing, orally and electronically throughout the consultation program. Typically Terasen would engage a third party consultant to ensure independent, objective review of the information. The analysis will summarize public views and concerns on the project, and be incorporated in Terasen's final environmental assessment document.

The final environmental assessment document will describe the total public consultation activities that have taken place during the study. This section will outline how the public and regulatory authorities were consulted, who was consulted, issues and concerns that were raised and how they were addressed in the project plan. Any changes to the project that arise from these consultations will be described in an amended final environmental assessment document.

## **9. The Need and Role for Monitoring and Follow-up**

The environmental assessment is to present a comprehensive plan for monitoring the installation and operation of the proposed works. Also, a governance and competency plan detailing Terasen's capability, readiness and commitment to carry-through with

remedial action wherever and whenever a situation related to the project and its operation requires intervention to deal with unanticipated events, malfunctions, and accidents.

Monitoring occurs before, during and after the project. Pre-construction monitoring attends to extant circumstances that may require specific short-term responses – e.g., staying away from an active den site during the occupation period. Monitoring during construction ensures application of agreed procedures and mitigations, and responds to unexpected and surprise situations. Post project monitoring addresses progress of reclamation and adaptive management interventions where restoration is not proceeding satisfactorily. An important part of all stages, but particularly post project, is to improve knowledge about environmental protection science and methods, and to be able to demonstrate that ecological integrity has been maintained or restored. Monitoring is an integral element of the “follow-up” program

The CEAAct defines a “follow-up program” to mean a program for

- a) verifying the accuracy of the environmental assessment of a project, and
- b) determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project.

A follow-up program is an essential element of undertaking such a major project in Jasper National Park and Mount Robson Provincial Park. The TransMountain pipeline has been in operation in Jasper National Park and Mount Robson Provincial Park for 52 years. Substantial knowledge about its environmental and social effects is known. Also, the knowledge about the impact of building and operating petroleum pipelines elsewhere is extensive. Knowledge gained in these circumstances has allowed for new design and installation techniques, new materials, remedial intervention to change project components that were not performing as expected, and to respond to unanticipated situations. Consequently, the pipelining industry has learned a great deal about building and managing high capacity petroleum pipelines. A follow-up program is an important part of an adaptive management strategy for dealing with project elements that are capricious in nature – e.g., invasion by non-native plant species.

The follow-up program should be specific in terms of methods used, protocols, frequency of monitoring, and duration of the follow-up program. Analysis and reporting of the results of the follow-up program should include: 1) whether any remedial actions were necessary; 2) whether the results of the follow-up program were in accordance with the predicted effects; and, 3) whether any lessons were learned. By using such programs and strategies, Parks Canada can continue to be unsurpassed in managing wildland resources.

## **10. Findings and Conclusion**

The findings of the interaction of the project with the environment – biotic, abiotic, social, cultural and economic – of Jasper National Park and Mount Robson Provincial Park will be summarized. The document will describe designs, methods and measures



proposed to avoid and minimize adverse effects. Cumulative residual effects will be described. Monitoring and follow-up commitments will be detailed.

The environmental assessment document authors are not to make conclusions regarding whether “significant adverse environmental effects” are likely to or are not likely to be caused by the project within Jasper National Park. Parks Canada, as the Responsible Authority for Jasper National Park will provide its initial conclusions about the likelihood of “significant” adverse environmental effects to Terasen Pipelines during Terasen’s consultation process, and will make a final “determination” in a separate exercise and report. Other responsible authorities will also make their own independent determinations.