

**PROJECT-SPECIFIC GUIDELINES FOR THE PREPARATION OF AN  
ENVIRONMENTAL IMPACT STATEMENT AND  
CANADIAN ENVIRONMENTAL ASSESSMENT ACT  
COMPREHENSIVE STUDY SCOPING DOCUMENT**

HIGHWAY 905 – ALL WEATHER ROADWAY – STONY RAPIDS TO LAKE  
ATHABASCA NEAR FOND DU LAC

As Proposed by the Saskatchewan Ministry of Highways and Infrastructure

**July 2010**

This document has been prepared to meet the requirements for Project-Specific Guidelines for the Saskatchewan environmental impact assessment process and for the federal Comprehensive Study Scoping Document as required by the *Canadian Environmental Assessment Act*. It was prepared by Saskatchewan Environment and the Canadian Environmental Assessment Agency to assist the Saskatchewan Ministry of Highways and Infrastructure with the environmental impact assessment of the proposed all-weather roadway from Stony Rapids to Lake Athabasca, near Fond du Lac.

**Canada**



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## List of Acronyms

<b>Acronym</b>	<b>Meaning</b>
Agency	Canadian Environmental Assessment Agency
BAEFT	Best Available Economically Feasible Technologies
CEAR	The Canadian Environmental Assessment Registry
Cooperative Agreement	The Canada-Saskatchewan Agreement on Environmental Assessment Cooperation (2005)
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canada-Wide Standard
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment (Federal)
EAB	The Environmental Assessment Branch of the Saskatchewan Ministry of Environment
EC	Environment Canada
ECO	Environmental Construction and Operation Plan
EIA	Environmental Impact Assessment (Saskatchewan)
EIS	Environmental Impact Statement
ESC	Erosion and Sediment Control Plan
Federal Act	Canadian Environmental Assessment Act
FEAC	Federal Environmental Assessment Coordinator
FPWC	Federal Policy on Wetland Conservation
GPS	Global Positioning System
HC	Health Canada
IEE	Initial Environmental Evaluation
INAC	Indian and Northern Affairs Canada
LSA	Local Study Area
MBCA	Migratory Birds Convention Act
NOC	Notice of Commencement
NWPA	Navigable Waters Protection Act
Provincial Act	The Environmental Assessment Act (Saskatchewan)
PSGs	Project Specific Guidelines
RA	Responsible Authority
SARA	Species at Risk Act
SKCDC	Saskatchewan Conservation Data Centre
SMHI	Saskatchewan Ministry of Highways and Infrastructure
TC	Transport Canada
VEC	Valued Ecosystem Component

## 1.0 Introduction

Saskatchewan Ministry of Highways and Infrastructure (SMHI) submitted a project proposal for construction of an all weather road from Stony Rapids to a point on the south shore of Lake Athabasca near Fond du Lac in northern Saskatchewan located on Fond du Lac Reserve 223 and 228.

The first 31.9 km of the project will modify and realign sections of an existing winter road west of Stony Rapids to create a section of the all weather road; the remaining 56.6 km of the all weather road will be in a new right-of-way. The project involves: initial location centerline clearing; right of way clearing and grubbing; roadway subgrade construction; crushing of granular material for the roadway surface; installation of required stream crossings, including culverts and bridges; cleanup of right of way, borrow sources and granular sources; remediation work (as required); and post-construction maintenance..

The purpose of the project is to provide more efficient transportation of goods and service to Fond du Lac.

The proposed project will be subject to environmental assessment under both the provincial *Environmental Assessment Act* (Provincial Act) and the federal *Canadian Environmental Assessment Act* (Federal Act). The project is subject to a comprehensive study under the Federal Act. The Province of Saskatchewan and the Government of Canada have agreed to review the project cooperatively as per the *Canada-Saskatchewan Agreement on Environmental Assessment Cooperation* (Government of Canada and Government of Saskatchewan 2005) (Cooperative Agreement) . The following sections describe the process to be followed under the cooperative agreement, including the specific requirements of both the provincial and federal environmental assessment regimes, and the specific information requirements for the environmental impact statement (EIS).

### 1.1 Purpose of the Guideline Document

The purpose of this document is twofold. First, these Guidelines have been prepared to assist the proponent with the conduct of the environmental impact assessment (EIA) and preparation of the EIS. The Guidelines reflect concerns and issues that have been raised by federal and provincial officials regarding the proposed project and identify the information that should be included in the EIS. Second, the information provided in the EIS should also be sufficient for preparation of the Comprehensive Study Report by the federal government.

These Guidelines should not be regarded as either restrictive or exhaustive, as concerns other than those identified in the document could arise during the investigations associated with the EIA. Reference to the Saskatchewan Ministry of Environment, Environmental Assessment Branch's (EAB) website for general guidelines for conducting an EIA, *EIA Conduct – EIS Content* (Saskatchewan Ministry of Environment), as well as the Canadian Environmental Assessment Agency's (Agency) website guidance materials for the conduct of environmental assessments, *Basics of Environmental Assessment*, is recommended. The EAB, as lead agency in the cooperative federal/provincial review, is prepared to provide advice and assistance throughout the EIA with regard to the identification of environmental concerns and appropriate assessment methodology.

## **2.0 The Environmental Assessment Process**

### **2.1 Federal and Provincial Cooperation in the Environmental Assessment**

The Government of Canada and the Province of Saskatchewan have agreed to review the project cooperatively as per the Cooperative Agreement. Canada and Saskatchewan intend to cooperate throughout the process in a manner that meets the legislated environmental assessment requirements of both parties. Under the Cooperative Agreement, federal and provincial environmental assessment processes, directed respectively by the Provincial Act and the Federal Act, are coordinated for proposals subject to provincial and federal jurisdiction, where not limited by individual statutory or process requirements of the respective processes. Accordingly, information requirements of both provincial and federal agencies have been included in this document so that the EIS will be sufficient to address the environmental concerns of both the Government of Saskatchewan and the Government of Canada.

Both governments will use the information generated through the cooperative environmental assessment as the basis for their respective decisions about the project. However, each government will retain its ability to make project-related decisions on matters within its own legislative authority.

Under the Cooperative Agreement, the EAB is the lead party and contact for the project and has established a Project Administration Team for the cooperative environmental assessment. Membership on the Project Administration Team includes representatives from Saskatchewan Environment's Environmental Assessment Branch, Fisheries and Oceans Canada (DFO), Transport Canada, Indian and Northern Affairs Canada (INAC) and the Agency. Members of the Project Administration Team will also be responsible for coordinating required decisions during the administration of the cooperative environmental assessment.

Pursuant to subsection 17(1) of the Federal Act and subsection 9(1) of the Provincial Act, the responsible authorities delegate the conduct of the environmental assessment to the Proponent. The Proponent will prepare an EIS based on these Guidelines. Once completed, the proponent will submit the EIS to the Project Administration Team for review.

### **2.2 Requirement for Environmental Impact Assessment under *The Environmental Assessment Act* (Saskatchewan)**

In Saskatchewan, a proponent that has a project that is considered to be a “development” pursuant to subsection 2(d) of the Provincial Act is required to conduct an EIA of the proposed project and prepare and submit an EIS to the Minister of Environment.

In conducting a technical review of SMHI's project proposal, EAB arranged for comments from provincial ministries and agencies. Based on the results of the technical review, the project met the definition of a “development” as defined by the Provincial Act, and as such, the proponent must carry out an EIA and complete the requirements as outlined in the Provincial Act.

The EIA guidelines, particularly from section 3 onward, will assist the proponent in undertaking their EIA. They have been prepared in consultation with both federal and provincial agencies. Once the EIS is submitted, the EAB circulates the EIS to provincial technical reviewers to obtain their expert advice. Review agencies include the Saskatchewan Ministries of Environment; Health;

Advanced Education, Employment and Labour; First Nations and Métis Relations; Culture Youth and Recreation (Heritage Branch); Social Services; Industry and Resources; Northern Affairs; and Government Relations; and the Crown Corporation, Saskatchewan Watershed Authority. In the case of a cooperative federal-provincial review, expert advice is also provided by federal agencies as outlined in section 2.3.

Following review of the EIS by the noted agencies, the EAB will prepare Technical Review Comments that will document the outcomes of the federal and provincial evaluation of the EIS. The EIS and Technical Review Comments, along with the federal Comprehensive Study Report (discussed below) are then provided to the public for a minimum 30-day review. Comments from the review are provided to the provincial Minister of Environment and are taken into consideration prior to the Ministerial Decision being made.

### **2.3 Requirement for Environmental Assessment under the *Canadian Environmental Assessment Act***

The proposed road project is an undertaking in relation to a physical work and, as such, is defined as a project under subsection 2(1) of the federal Act. INAC is considering providing a land interest under section 35 of the *Indian Act* to enable the project to proceed. Pursuant to paragraph 5(1)(b) of the federal Act, an environmental assessment must be conducted before a decision on the land instrument can be made. INAC is therefore a responsible authority (RA) under the federal Act.

DFO may be required to issue one or more authorizations under subsection 35(2) of the *Fisheries Act* with respect to watercourse crossings. Issuance of these authorizations is described in the *Law List Regulations* under the federal Act. Therefore, DFO must ensure that an environmental assessment of the project is carried out before any *Fisheries Act* authorizations are issued. DFO is an RA under the federal Act.

The project may also require approval from Transport Canada (TC) pursuant to section 5 of the *Navigable Waters Protection Act* (NWPA), which allows for interference to navigation. The issuance of NWPA approvals is described in the *Law List Regulations* and, therefore, TC is required to conduct an environmental assessment under the federal Act. Transport Canada (TC) is also an RA.

Environment Canada (EC) and Health Canada (HC) have identified themselves as expert federal authorities, and they will provide advice in relation to the environmental assessment. The Agency is the federal environmental assessment coordinator (FEAC) for the proposed project and is responsible for coordinating the activities of the responsible authority and expert federal authorities in accordance with section 12 of the federal Act.

The project is subject to a comprehensive study under the federal Act, pursuant to paragraph 29(b) of the *Comprehensive Study List Regulations*. The project consists of the proposed construction of an all-season public highway that will be more than 50 km in length and will lead to a community that lacks all-season public highway access. Under the federal Act, the Agency will lead the preparation of the comprehensive study report in partnership with the responsible authorities and federal authorities. This report is submitted to the federal Minister of the Environment



This document includes a description of the scope of the project, the factors to be considered in the comprehensive study and the scope of those factors.

## **2.4 Joint Public Consultation on the EIA and Comprehensive Study Report**

The public is being asked to comment on this document which includes the scope of the environmental assessment and the draft EIA guidelines.

As is required in both federal and provincial environmental assessment processes, the public will be given an opportunity to participate in the conduct of the environmental assessment through public meetings to be held by the proponent. The requirements for this participation are set out in subsection 21.1, subsection 21.2, and section 22 of the federal Act. The public will also be provided with an opportunity to examine the EIS, the comprehensive study report prepared by the federal government, and the Technical Review Comments prepared by the provincial EAB. The public will be requested to provide their comments to the respective federal and provincial Ministers who will be issuing an environmental assessment decision. This final public review period must be a minimum of 30 days to meet provincial requirements and will be extended, if necessary, through consultation with the Project Administration Team as per the Cooperative Agreement.

## **3.0 PROPOSED SCOPE OF PROJECT**

In general, the proposed scope of the project for the purpose of the EIA is the construction, operation, and maintenance of approximately 88.5 km of all weather roadway, from a point approximately 3.5 km south of the Stony Rapids airport to the south shore of Lake Athabasca located on Fond du Lac Reserve 223 and 228. A 31.9 km portion of the proposed roadway will follow the existing winter road location west of Stony Rapids, with exceptions where deviations are required to meet SMHI geometric standards. The remaining 56.6 km will be built on new right-of-way. As decommissioning of the road is not proposed at this time, and would not likely occur in the near future as this will be the only road into the community, the scope of the project does not consider the decommissioning of the road. The scope will take into consideration that the roadway may be located anywhere within a width extending 1 km from each side of the centerline identified in Appendix B of the project proposal.

A ferry crossing is alluded to in the proposal but is not described and therefore does not form part of the scope of the project.

Specifically, the defined scope of the project for the purpose of the EIA will include but is not limited to:

- initial location centerline clearing;
- rights-of-way clearing (vegetation clearing, topsoil stripping, and stockpiling);
- construction of any temporary structures or construction roads;
- construction and operation of the associated infrastructure, and modification (if required) and operation of existing associated infrastructure (e.g. water crossings, traffic control

structures, culverts, cross-drains, water withdrawal facilities for construction and temporary work camps);

- construction and operation of all ancillary works (e.g. aggregate and borrow pits, temporary work camps);
- crushing and hauling operations;
- operation, maintenance, and storage of machinery and equipment;
- maintenance (e.g. vegetation management in ditches, erosion control measures on side-slopes and ditch grades; erosion control measures on soil stockpiles, inspection and maintenance of road crossings, inspection and maintenance of water crossings, summer and winter maintenance of road surface).
- reclamation and revegetation of rights-of way, aggregate and borrow pits, temporary work camp sites, and other temporarily disturbed sites;

The EIS should include a description of each component of the project and any associated physical works and activities.

### 3.1 Proposed Factors to be Considered

As stated in the federal Act: "Environment" means the components of the Earth, and includes: (a) land, water and air, including all layers of the atmosphere; (b) all organic and inorganic matter and living organisms; and (c) the interacting natural systems that include components referred to in paragraphs (a) and (b).

As stated in the federal Act, "environmental effect" means, in respect of 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 subsection 2(1) of the Species at Risk Act,*
- (b) *any effect of any change referred to in paragraph (a) on*
  - (i) *health and socio-economic conditions,*
  - (ii) *physical and cultural heritage,*
  - (iii) *the current use of lands and resources for traditional purposes by aboriginal persons,*  
*or*
  - (iv) *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.*

As stated in the provincial Act, a "development" means any project, operation, or activity, or any alteration or expansion of any project, operation, or activity, which is likely to:

- (i) have an affect on any unique, rare or endangered feature of the environment;
- (ii) substantially utilize any provincial resource and in so doing pre-empt the use, or potential use, of that resource for any other purpose;

- (iii) cause the emission of any pollutants or create by-products, residual or waste products which require handling and disposal in a manner that is not regulated by any other Act or regulation;
- (iv) cause widespread public concern because of potential environmental changes;
- (v) involve a new technology that is concerned with resource utilization and that may induce significant environmental change; or
- (vi) have a significant impact on the environment or necessitate a further development which is likely to have a significant impact on the environment;

and “environment”: means

- (i) air, land and water;
- (ii) plant and animal life, including man; and
- (iii) the social, economic and cultural conditions that influence the life of man or a community insofar as they are related to the matters described in subclauses (i) and (ii);

As described in Subsections 16(1) and (2) of the federal Act and in accordance to the provincial Act, the EIA and the federal comprehensive study report shall include a consideration of the following factors:

- 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;
- the significance of the effects referred to in the previous paragraph;
- comments from the public that are received in accordance with the cooperative environmental assessment process;
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project;
- the purpose of the project;
- alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;
- a description of the environmental conditions that may affect, or be affected by the project;
- 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.

Taking into consideration the definition of “environmental effect”, the EIA should also address the effect of any environmental change that the project may have on:

- the current use of lands and resources for traditional purposes by aboriginal persons;
- human health (residences are identified within 500 m of proposed alignment);
- physical and cultural heritage, including first nations and local Métis interest;

- socio-economic conditions (e.g. transportation, land use, population, safety issues, etc.); and
- anything of historical, paleontological or architectural significance; and
- any other matter of significance discussed in the *Draft Athabasca Land Use Plan: Stage One* (Athabasca Interim Advisory Panel 2006). Though the Land Use Plan has not been approved by the Saskatchewan Minister of Environment, the plan still reflects issues and concerns of people in the area who may be affected by the all weather roadway. Should questions arise in regard to the Land Use Plan, the Saskatchewan Ministry of Environment contact is Dwayne Rinholm at (306) 953-2591.

Accordingly, the EIS shall include information in each of the areas above.

### **3.2 Proposed Scope of the Factors to be Considered**

In accordance to the Provincial Act and further to subsection 16(1) and (2) of the Federal Act , the EIA and the federal comprehensive study report will consider the factors listed above and document any issues and concerns that may be identified through any regulatory, stakeholder and/or public consultation.

The assessment will consider potential effects the project may have on the environment and other aspects considered to be Valued Ecosystem Components (VECs). Impacts with respect to spatial and temporal boundaries may vary depending on the VEC, and the assessment of these impacts should consider:

- timing/scheduling of project activities;
- natural variations of each VEC;
- the time required for recovery from an impact; and
- cumulative effects, including effects from other activities likely to occur as a result of road construction and improved access to new areas (i.e. increased mineral exploration or other natural resource based industry undertakings likely to benefit from better ground access to new areas).

Valued Ecosystem Components (VECs) of interest in this area may include but are not limited to the following:

- atmosphere (i.e. air quality);
- migratory birds, raptors etc. along the road right-of-way (ROW);
- fish and fish habitat in watercourses along the ROW, including spawning, rearing, feeding and migratory habitat;
- surface water quality along the ROW and receiving waters downstream (down slope) of the ROW;
- groundwater and surface water resources that are or may be used for drinking water;
- amphibian and reptile populations along the ROW;
- wetlands;

- plant or animal species that meet one or more of the following criteria: are identified under the *Species at Risk Act* (SARA), are recognized as being at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), are listed in the Provincial *Wild Species At Risk Regulation*; are listed as extremely rare (S1) or rare (S2) in the provincial Saskatchewan Conservation Data Centre (SKCDC);
- geological resources, soils, and landscape features encountered along the ROW;
- vegetation;
- wildlife and wildlife habitat;
- First Nations reserve lands and lands considered for Treaty Land Entitlement;
- traditional lifestyles in the area, including hunting, trapping and traditional plant gathering activities;
- country foods harvested as food or for medicinal or ceremonial purposes;
- archaeological sites along the ROW and associated work spaces;
- commercial and recreational fisheries on Wollaston Lake and nearby waterbodies;
- mineral claims potentially affected by the project;
- outfitters, sport fishing camps, and other recreational uses affected by the project;
- human health and safety;
- navigation; and
- other VECs of interest identified in the *Draft Athabasca Land Use Plan: Stage 1* (Athabasca Interim Advisory Panel 2006)

Detailed requirements on these components are provided in section 8.

### 3.3 Proposed Spatial and Temporal Boundaries

The consideration of the environmental effects in the environmental assessment needs to be conceptually bounded in both time and space. This is more commonly known as defining the study areas and time frames, or spatial and temporal boundaries of the environmental assessment.

Study areas must encompass all relevant components of the environment, including the people, biota, land, water, air, and other aspects of the natural and human environment. Study boundaries should be defined taking into account ecological, technical, and social considerations. The spatial boundaries must reflect the geographic range over which the project's environmental effects may occur, even if these effects extend beyond the project footprint.

The project footprint includes the area where new construction takes place, as well as areas or structures that are being decommissioned or abandoned.

The following geographic study areas are suggested as a reference point. It is expected that the spatial boundaries may vary for each environmental component, depending on the nature of the predicted effects. The specific spatial boundaries must be defined in the EIS.

Site Study Area	The Site Study Area is the project footprint, as described above.
Local Study Area	The Local Study Area is defined as that area existing outside the Site Study Area boundary, where there is a reasonable potential for the occurrence of environmental effects from the project. The boundaries may change, as appropriate, following a preliminary assessment of the spatial extent of potential environmental effects.
Regional Study Area	The Regional Study Area is defined as the area within which there is the potential for cumulative effects.

The temporal boundaries for the environmental assessment must establish over what period of time the project-specific and cumulative effects are to be considered and should at a minimum address the planning horizon of the project.

SMHI shall clearly define and provide the rationale for the spatial and temporal boundaries. All VECs must be given adequate attention throughout the core study area. For example, boundaries should encompass aspects of the project such as operation and maintenance of the road, which will extend beyond the initial construction phase of the road. Any VEC-specific variation from the core study area should be identified and the rationale provided. Boundaries should be flexible and adaptive to enable adjustment or alteration based on field data.

#### **4.0 PROJECT-SPECIFIC GUIDELINES**

The following sections outline the specific studies to undertake and the information to obtain as part of the EIA, and how to present and evaluate these in the EIS. These sections describe what would conventionally be understood as Draft Project-Specific Guidelines (PSGs) under the Province of Saskatchewan’s environmental review process. These PSGs have been developed with input from provincial and federal expert advisors

#### **5.0 EIS GENERAL REQUIREMENTS**

The EIS is a statement of SMHI’s environmental conclusions and commitments regarding the development and, as such, must be explicitly endorsed by SMHI.

The EIS will be made available for public review and must be written so that it can be understood by non-specialists. In particular, the Executive Summary must be easily understood and printed in black and white so that reproductions can be easily made. Acronyms used and a glossary of technical terms would also be useful.

The following sections describe the different topics to be addressed in the EIS. Sufficient information needs to be provided for each so that informed conclusions can be reached regarding the potential for impacts on the various components of the environment. However, the greatest time and effort are to be applied to data collection and interpretation related to the

most significant impacts as identified by the proponent and through these PSGs. SMHI must provide rationale as to why any issues identified in the guidelines were not addressed in the EIS and highlight key impacts that are identified for more intensive investigation.

Where external sources of information or data are used, SMHI will provide a brief reference for the source at the point at which the information is presented and a complete reference at the end of the EIS. Where conclusions that are critical to the assessment of environmental impact are cited from other reports, SMHI should provide sufficient detail of the originating data and analysis so as to enable the critical review of that material. Such detailed reference material could be submitted as an appendix to the EIS. The EIS will be a stand-alone document upon which critical review can be undertaken.

When submitting the EIS, one digital copy (Word and/or PDF) and approximately 25 paper copies are required (confirm number with the EAB Project Development Administrator). The proponent may wish to print and bind the EIS in a way that is amenable to revision should changes to the EIS be required following technical and/or public review.

A suggested table of contents for the EIS is provided below:

- Executive Summary;
- Table of Contents;
- List of Tables;
- List of Figures
- Acronyms and Abbreviations;
- Application of the Provincial Environmental Impact Assessment and Federal Environmental Assessment Processes;
- Project Introduction;
- Scope of the Project;
- Scope of the Assessment;
- Scope of the Factors;
- Spatial and Temporal Boundaries of the Assessment;
- Description of the Existing Environment (description of environmental components and likely interactions with the project);
- Description of Alternative Routes;
- Assessment of the Environmental Effects (provincial and federal)
- Selection of Preferred Route and Description of Full Project;
- Accidents and Malfunctions;
- Effects of the Environment on the Project;
- Assessment of the Cumulative Environmental Effects;
- Mitigation Measures;
- Summary of Commitments;
- Description of Monitoring, Reporting, and the Follow-Up Process;

- Significance of Residual Effects;
- Summary of Stakeholder Consultation;
- Summary of First Nations/Aboriginal Groups Consultation;
- Conclusions and Recommendations for the Decision; and

## **6.0 EIS EXECUTIVE SUMMARY**

An executive summary of the EIS is required. Briefly summarize the EIS under the following topic areas:

- purpose of carrying out the development;
- description of the alternative means for development (if any) and the preferred option;
- the benefits and costs of the preferred option and the alternatives (if any);
- if no alternatives means for development are considered, the reasons why;
- potential for short and/or long-term environmental effects of the development, including the potential for spills/malfunctions/accidents;
- potential cumulative environmental effects that are likely to result from the development in combination with other local/adjacent projects (past, present, and future) and activities in the short and long term;
- mitigation measures, including their environmental outcome and technical and economical feasibility;
- significance of the identified residual environmental impacts;
- decommissioning and reclamation;
- monitoring programs for the development at all phases; and
- public involvement activities and comments received, along with SMHI's responses.

To enhance public involvement, write the executive summary in clear language, avoid the use of technical terms and jargon, and place the summary under a cover separate from the EIS document.

## **7.0 PROJECT INTRODUCTION**

Describe the need and purpose for constructing the all weather roadway and provide an overview of the area that the project may impact, taking into account that more than just the area immediately adjacent to preferred route may be impacted. Consider the impacts on wildlife, vegetation, fish, water, air, land uses and values, and local communities and businesses when selecting the area to describe in the project.

Provide a map describing the project area, without yet highlighting the preferred route for the project (route selection, access road and intersection location, borrow pit locations, aggregate



sources, and temporary work camp locations). Selection of the preferred route for the project (which may or may not include the route identified in the proposal) and description of alternatives should only be identified after considering and describing the existing environment. Identify features that are important to SMHI in achieving the overall objective. Provide enough detail on the map that the reader can locate themselves within the province of Saskatchewan. As a suggestion, at a minimum, this map and other maps in the EIS should contain the information outlined in Appendix A.

## **8.0 DESCRIPTION OF THE EXISTING ENVIRONMENT**

Describe the existing environment of the project area in sufficient detail to enable an understanding of how the current environmental conditions might be impacted (positively or negatively) by project alternatives. This section should also aid in the selection of the preferred approach and development of mitigation strategies to prevent or reduce the expected impacts. Maps, tables and figures should be included as appropriate.

In developing a project-specific database that reflects current environmental conditions in the study area, existing data may be utilized to the extent possible. Some baseline material, that includes the project area, has been compiled in the *Draft Athabasca Land Use Plan, Stage 1* (Athabasca Interim Advisory Panel 2006), which can be viewed and downloaded from the Ministry of Environment's website). Other data sources may be obtained by contacting the Ministry of Environment's Boreal Geomatics Section (306-953-2376). Existing data will be supplemented with field data as required to predict impacts. Such data should be collected using known and accepted methodologies. SMHI should ensure that relevant data are collected in a format that can interface with the SKCDC. As well as being included in the EIS, these data sets should be forwarded directly to Saskatchewan Ministry of Environment. The proponent or consultant should also contact the SKCDC for rare species information.

The data in the EIS should satisfy the following criteria:

- (i) the baseline data will accurately describe the existing environment that will be potentially affected by the project as proposed;
- (ii) the data will provide a sound basis for comparative monitoring; and
- (iii) the EIS will be complete, in terms of data availability and presentation, and should concentrate on those issues of major environmental and social importance.

No more data than is necessary should be collected and presented to meet these purposes.

### **8.1 Biophysical Environment**

#### **8.1.1 Land Surface**

Information about the land surface is essential in identifying a suitable location for the new section of roadway and associated borrow sources and aggregate pits amongst a choice of alternatives selections. Identify with text and a map: "surface form", "surface material", "texture of parent material", "soil development" and areas of "permafrost". Erosion prone

terrain should be identified and unique landscape features should be presented. Digital data is available from the Soil Landscapes of Canada is available from the Agriculture and Agri-Food Canada website. The information could be supplemented by examining digital imagery or other forms of data that SMHI may have knowledge of and by consulting *The Ecoregions of Saskatchewan*, (Canadian Plains Research Centre 1998) where descriptions are provided for the land surface of each “Landscape Area”.

The *Draft Athabasca Land Use Plan, Stage 1* (Athabasca Interim Advisory Panel 2006) identifies eskers, in particular, as critical habitat for a wide variety of wildlife. SMHI will clearly identify the locations of these unique landforms.

### 8.1.2 Hydrology

The project has the potential to impact local drainage patterns. SMHI should obtain information on local drainage patterns by downloading digital watershed information from the Agriculture and Agri-Food Canada website. SMHI should also identify any known sensitive areas where drainage patterns may be at risk to alteration as a result of project related erosion and/or flooding events.

### 8.1.3 Aquatic Resources

Construction of the all weather roadway near streams or lakes could result in the harmful alteration, disruption or destruction of fish habitat, increased sediment loading into fish habitat and impedance to fish movement. Road development could also result in increased access to lakes which could have impacts on fish populations in the area.

The EIS should include a catalogue of each watercourse or waterbody proposed to be crossed as well as what species utilize each area. Each proposed crossing location should be mapped on a large scale map (1:50,000 topographic map). All areas functioning as fish habitat at crossing locations should be identified and characterized (i.e. habitat type, vegetation community, gradient, bank shape, substrate type, etc.) with particular attention given to critical or limiting habitat.

- the proponent will obtain data on fish species composition, distribution, relative abundance, movements and general life history parameters for all lakes and streams located within 1 kilometer on either side of the selected route. The inventory of local fish species and other lake and stream characteristics will provide a sound baseline for determining the need to design crossing structures for fish passage and assessing the potential for impacts to fish and fish habitat.
- the fish species survey must account for any fish that may occur in the project area and that meet any of the following criteria that are listed in: the SKCDC as extremely rare (S1) and rare (S2); are listed in the provincial *Wildlife Species at Risk Regulations*; are listed in Schedules 1, 2, and 3 of the federal *Species at Risk Act* (SARA); and/or are recognized as being at risk by COSEWIC. To determine whether listed rare species may occur in the project area, SMHI should consult Environment Canada’s advanced search web site ([www.sararegistry.gc.ca](http://www.sararegistry.gc.ca)) and the document entitled *Expected Animal and Invertebrate*

*Species List by Ecoregion* (Saskatchewan Conservation Data Centre 2010a), which can be downloaded from the SKCDC website. Other knowledge about the presence of listed rare species could be obtained from the Ministry of Environment’s Area Fisheries Biologist in La Ronge, Mark Duffy (306-425-4247)

- field surveys will use standardized procedures that are repeatable, such that future comparisons can be made. The data from these surveys will assist in evaluating both direct impacts at crossings and indirect impacts to fish populations from increased public access to watercourses and waterbodies in the area.
- information on the presence or absence of fish species should be supplemented with sampling results. Sampling undertaken at proposed stream crossings will be timed to coincide with the highest likelihood of the fish utilizing the stream for one or more of their life stages (i.e. early spring/summer and possibly again in the fall to assess for the presence of fall spawning species).
- fish habitat and fish utilization assessment should consider First Nations input and comments as First Nations often possess first hand and long term knowledge on these issues.
- the proponent will provide plans proposed to offset any loss in the productivity of fish habitat in order to achieve “no net loss” of fish habitat as a result of the road development.

Special collection permits should be obtained and sampling methodologies will be discussed with Saskatchewan Ministry of Environment’s Fisheries Biologist, Mark Duffy at (306) 425-4247) in La Ronge prior to sampling. The data from these surveys will assist in evaluating both direct impacts at crossings and indirect impacts from increased access. To mitigate impacts to lakes and related fish resources, mitigation should include routing the road to avoid direct access to lakes, especially those containing lake trout or walleye.

With respect to construction activities and sedimentation, it should be noted that the proponent has responsibilities under subsection 36(3) of the *Fisheries Act* that states:

“Subject to subsection (4), no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in place under conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter such water.”

Given that, despite any approvals that may be issued, there is no authorization for the deposit of materials such as noted above under the *Fisheries Act*. Road development and associated work practices must be implemented such that a deposit of a deleterious substance does not occur

#### **8.1.4 Vegetation**

The proposed road and related ancillary features have the potential to impact plant species at risk and species of importance to local residents and has the potential to introduce non-native species to the area. In order to evaluate the potential for these types of impacts, SMHI must document all vegetation types encountered throughout the study area, as well as complete and document the findings of a survey for rare plants and other plant species of interest or concern.

The rare species survey must account for any plants, mosses, lichens, and fungi that may occur in the project area and that meet any of the following criteria: are listed in the SKCDC as extremely rare (S1) and rare (S2); are listed in the provincial *Wildlife Species at Risk Regulations*; are listed in Schedules 1, 2 and 3 of the federal *Species at Risk Act* (SARA); and/or are recognized as being at risk by COSEWIC. Note, that under the SARA, plants, mosses, lichens, and fungi meet the definition of “wildlife species”.

Other plant species of interest or concern will be determined by contacting residents of Black Lake Denesuline First Nation, Fond du Lac Denesuline First Nation, and Métis locals. Plants that may not be recognized as rare by federal and provincial legislation may be important to the local communities for food, ceremonies, income or medicinal purposes

To determine whether listed rare species and other species of interest or concern may occur in the project area, SMHI should consult Environment Canada’s advanced search web site ([www.sararegistry.gc.ca](http://www.sararegistry.gc.ca)) and the documents entitled *Expected Plant Species List by Ecoregion* (Saskatchewan Conservation Data Centre 2010c) and *Expected Fungi Species List by Ecoregion* (Saskatchewan Conservation Data Centre 2010b), which can be downloaded from the SKCDC website. Other knowledge about the presence of listed rare species or species and species of interest or concern could be obtained from the Ministry of Environment’s Species at Risk Biologist, Karyn Scalise at (306) 787-8665) and/or Habitat Biologist, Dave Arneson at (306) 787-8457), the Black Lake Denesuline First Nation, Fond du Lac Denesuline First Nation, Métis Locals, or other people with special knowledge of the area.

The EIS must indicate how the listed plants and other species of interest or concern are accounted for in the survey design and how methodologies employed for the surveys are in agreement with *Standardized Methodology for Surveys of Rare Plants* (Saskatchewan Conservation Data Centre 2009), which can be downloaded from the SKCDC website. The document entitled, *Terrestrial Field Surveys: Permit Requirements, and Design & Methodology Guidelines* (Saskatchewan Ministry of Environment 2009) provides further guidance on general plant and rare plant surveys and can also be downloaded from the SKCDC website.

All data recorded from plant surveys is to be submitted in digital form to the SKCDS. If rare plants listed in the *Wild Species at Risk Regulations* (Saskatchewan) are to be collected during field surveys, a scientific research permit will be required from the Fish and Wildlife Branch of the Saskatchewan Ministry of Environment.

A list of the potential extremely rare (S1) and rare (S2) plants that may occur in the study area should be provided in an appendix. This list should include species that may occur in the area but that have not been reported as occurring. Consulting a list of potentially occurring extremely rare and rare species will be important during construction activities, as such plants not previously documented may be discovered, and mitigation measures will be required.

### **8.1.5 Wetlands**

*The Federal Policy on Wetland Conservation* (Government of Canada 1991) promotes the wise use of wetlands and protection through adequate consideration of wetland concerns in environmental assessments of development projects. The objective of the Policy is to promote

the conservation of Canada's wetlands to sustain their ecological and socio-economic functions, now and into the future. The Policy goals promote the maintenance of the functions and values derived from wetlands throughout Canada, recognition of wetland functions in resource planning and economic decisions, enhancement and rehabilitation of wetlands in areas where continuing loss or degradation of wetlands or their functions have reached critical levels, and utilization of wetlands in a manner that enhances prospects for their sustained and productive use by future generations. Wetlands do not operate in isolation and adjacent upland habitats play an integral part in the maintenance of the functions of wetlands.

Wetlands have important significance as habitat for several extremely rare, rare, and rare-uncommon species of plants, wildlife, and amphibians, and other species with environmental and social significance.

The EIS should meet the following information needs:

#### ***Baseline Data***

- map all wetlands, indicate direction of inflow/outflow, and describe the location, size of wetlands, wetland type, condition, ecological community types, flora and fauna;
- describe contribution of the wetland to the quantity and quality of surface water and groundwater;
- describe terrestrial and aquatic habitat functions;
- describe the ecological function of the wetland in the surrounding ecosystem and adjacent land use; and
- describe the aboriginal use of wetlands.

#### ***Impact Assessment***

- discuss how wetland function and ecosystem functions that contribute to the integrity of the wetland will be affected by the project;
- discuss cumulative environmental effects on the wetlands and wetland functions;
- discuss mitigation measures to ensure the no net loss of wetland function; and
- discuss how the mitigation measures are expected to meet *The Federal Policy on Wetland Conservation* (Government of Canada 1991).

The EIS should also outline the measures that will be taken to maintain the continuity of water flow for any bogs or fens crossed by the road development.

### **8.1.6 Wildlife and Wildlife Habitat**

The proposed road and related ancillary features have the potential to impact wildlife species at risk, species of importance to local residents, wildlife habitat and wildlife behaviour. In addition, rare wildlife species, recreation, hunting, trapping, and traditional use of the land associated with wildlife may be impacted. In order to determine how wildlife might be impacted by the project, it is important to identify the rare species and other species of interest or concern that the project might affect. Current locations and potential habitats of these

species should be described in relation to the project site and adjacent lands within the project study areas.

Rare wildlife species are to include mammals, birds, amphibians, reptiles, arthropods, and land-dwelling mollusks that may be found in the project area and that meet any of the following criteria: are listed in the SKCDC as extremely rare (S1) and rare (S2); are listed in the provincial *Wildlife Species at Risk Regulations*; are listed in Schedules 1, 2 and 3 of SARA; and/or are recognized as being at risk by COSEWIC..

Other wildlife species of interest or concern will be determined by contacting residents of Black Lake Denesuline First Nation, Fond du Lac Denesuline First Nation, Métis Locals, other interested parties, and the Ministry of Environment's Wildlife Biologist, Tim Trottier at (306) 425-4237.

To determine whether listed rare species and other species of interest or concern may occur in the project area, SMHI should consult Environment Canada's advanced search web site ([www.sararegistry.gc.ca](http://www.sararegistry.gc.ca)) and the document entitled *Expected Animal and Invertebrate Species by Ecoregion* (Saskatchewan Conservation Data Centre 2010a), which can be downloaded from the SKCDC website. Other knowledge about the presence of listed species could be obtained from the Ministry of Environment's Wildlife Biologist in La Ronge, Tim Trottier at (306) 425-4237; the Black Lake Denesuline First Nation, Fond du Lac Denesuline First Nation; Métis Locals; or other people with special knowledge of the area. In particular, consultation with knowledgeable area residents should be conducted to identify heron rookeries and nesting areas of other migratory birds that are listed or of interest or concern within the project area, currently and historically occupied woodland caribou and moose habitats within 5 kilometres of the proposed routes as well as known denning sites for wolves, wolverines and black bears. Knowledge about barren-ground caribou use of the area should also be documented, particularly wintering habitats and movement corridors that intersect alternative routes (contact with the Beverly & Qamanirjuaq Caribou Management Board would be useful in this regard). Further available information should be gathered on the population health of each located species.

SMHI should supplement obtained information on large mammals (i.e., moose, woodland caribou, barren-ground caribou, and wolf) with a winter aerial reconnaissance survey within a 5 kilometre distance of each route option. Recorded observations should include location and abundance of wildlife, tracks and a description of wildlife habitat types. Locations of discovered denning sites for wolves, wolverines and black bears should be recorded and supplemented with information found during the previously mentioned consultations.

The *Draft Athabasca Land Use Plan: Stage 1* (Athabasca Interim Advisory Panel 2006) indicates that bald eagles and osprey are species of interest or concern. Aerial surveys will be conducted in early April for bald eagles and osprey nests within one kilometer of the proposed route. (Such a survey should also be undertaken for each route option and the information used in determining the preferred route) Any great blue heron rookeries will also be noted if they are found during the survey.

The document entitled, *Terrestrial Field Surveys: Permit Requirements, and Design & Methodology Guidelines* (Saskatchewan Ministry of Environment 2009) provides guidance for

carrying out appropriate terrestrial vertebrate surveys in Saskatchewan. The document can be downloaded from the SKCDC website.

SMHI must demonstrate that wildlife surveys optimized detection ability, that they were conducted at the appropriate time (day, year, and under suitable weather conditions) and location (relative to the ecological footprint of the development), and that sufficient effort was devoted to obtaining comprehensive coverage of the potentially impacted area.

Please note that for species at risk and species recognized as “at risk” by COSEWIC, estimates of abundance and distribution; and identification of residences, seasonal movement, movement corridors, habitat requirements, key habitat areas, critical habitat, and general life history are requested. Methodology to be used for identifying wildlife habitat is discussed below.

Methodology used for wildlife surveys and the results of the surveys must be documented. All data recorded from wildlife surveys is to be submitted in digital form to the SKCDC. If protected wildlife or species at risk are to be disturbed during the survey investigations, a Scientific Research Permit must be obtained from the Fish and Wildlife Branch of the Ministry of Environment.

The EIS should include wildlife information maps from the *Athabasca Land Use Plan: Stage 1* (Interim Advisory Panel 2006), as well as a map of the vegetation/wildlife habitats for the wildlife species of concern that are found in the study area. The maps should identify the locations of sensitive wildlife habitats for those species along the length of the route alternatives. These wildlife habitats may or may not support existing wildlife populations, but the presences of the habitats may be essential for supporting future wildlife populations. Information on habitats for species of concern should be of sufficient detail to allow a decision regarding route selection and alignment changes to avoid sensitive areas or for the assessment of impacts and selection of appropriate mitigative measures where such habitats cannot be avoided. Wildlife habitat information can be inferred from the analysis of vegetation types (which is discussed in section 8.14).

### **Species at Risk**

SARA establishes obligations to address potential effects on listed wildlife species in a federal environmental assessment. Federal environmental assessments are legally required to address the potential effects of a proposed project on listed wildlife species, their critical habitat, and residences of individuals of those species, and to consider any cumulative environmental effects. Environmental assessments should also include species that are not legally listed under SARA, namely those species that are recommended for legal listing by COSEWIC.

To provide further detail to paragraph 10 of this section, the following information needs should be met:

### ***Baseline Data***

- identify all species listed on Schedule 1 of SARA and those recognized as “at risk” by COSEWIC that may occur in the project area, using recognized survey protocols to provide current field data;

- provide assessments of abundance and distribution using recognized survey protocols that optimize detectability of all species listed on Schedule 1 of SARA and those recognized as “at risk” by COSEWIC and sufficient survey effort to obtain comprehensive coverage; and
- identify residences, seasonal movements, movement corridors, habitat requirements, key habitat areas, critical habitat and general life history of all species listed on Schedule 1 of SARA and those recognized as “at risk” by COSEWIC that may occur in the project area.

### ***Impact Assessment***

- describe the potential effects of a proposed project on species listed on Schedule 1 of SARA and those recognized as “at risk” by COSEWIC, their critical habitat, and residences of individuals of those species;
- discuss measures taken to avoid or lessen those effects;
- discuss measures taken to monitor all adverse effects on listed wildlife species and their critical habitat;
- discuss how measures taken to monitor the adverse effects are consistent with any applicable recovery strategy, management plans and action plans;
- discuss the cumulative environmental effects on species listed on Schedule 1 of SARA and those recognized as “at risk” by COSEWIC, the residences of their individuals and their critical habitat and measures to reduce these effects; and
- discuss residual effects on species at risk and the degree of scientific uncertainty related to the information used.

To assist proponents in accounting and managing species at risk, Environment Canada has developed a guide titled, "*Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada*" (Environment Canada 2004). The latest version of this document is available by contacting Environment Canada's Environmental Assessment Coordinator for Saskatchewan, Amy Wilker (306-780-5399, [Amy.Wilker@ec.gc.ca](mailto:Amy.Wilker@ec.gc.ca)). Species specific timing restrictions and setbacks should also be respected. For a list of plant species appropriate setbacks and survey protocols, the proponent is referred to Environment Canada's *Occupancy Survey Guidelines for Prairie Plant Species at Risk* (Henderson, D. 2009b) and *Activity Set-back Distance Guidelines for Prairie Plant Species at Risk* (Henderson, D. 2009a). These documents are also available by contacting Amy Wilker.

### **Migratory Birds**

The federal *Migratory Birds Convention Act* (MBCA) protects migratory birds and their eggs and nests. To minimize disturbance to breeding migratory birds, construction and vegetation clearing activities should avoid at a minimum the period between May 1 and July 31. If clearing must take place within this timeframe, the proponent should ensure that a person with qualified bird expertise confirm that there are no active nests in the area prior to clearing commencing. The proponent should also be reminded that the deposit of oil, oil wastes or other substances that are harmful to migratory birds in any waters or any area frequented by migratory birds is prohibited.

The EIS should specify the dates for all vegetation clearing and outline mitigation measures to minimize impacts on migratory birds and their eggs and nests.



In an appendix, please provide a list of the potential extremely rare (S1) and rare (S2) wildlife species that may occur in the study area. This list should include species that may occur in the area but that have not been reported as occurring. Consulting a list of potentially occurring extremely rare and rare species will be important during construction activities, as such wildlife species not previously documented may be discovered, and mitigation measures may be required.

## **8.2 Socio-Economic**

### **8.2.1 Community Profile, Social Conditions, and Local Economy**

The all weather roadway will provide access to the currently isolated community of Fond du Lac. Residents will now be able to drive along the new all weather road to a point on the south shore of Lake Athabasca and will have the option of accessing the short distance to the community by either utilizing an ice road in the winter or a ferry service in the summer. A baseline of information on the socio-economic characteristics of the Fond du Lac community should be provided in the EIS. Community involvement is required to confirm the current socio-economic data and to gain a good understanding of the social conditions that could be impacted by the development, and of the economy that supports the existing population.

### **8.2.2 Traditional Use and Values Associated with the Lands and Resources**

A description should be provided regarding the traditional use and values associated with the lands and resources that may be impacted by the road project, as determined through discussions and consultations with the Black Lake Denesuline First Nation and the Fond du Lac Denesuline First Nation, with the Prince Albert Grand Council who hold a traditional knowledge data base for the area and the Métis Locals associated with Northern Region 1. At a minimum, unless otherwise requested by the two First Nations and the Métis Locals associated with Northern Region 1, traditional hunting and gathering activities, and spiritual and ceremonial practices should be described. SMHI is encouraged to involve the two First Nations and Métis Locals associated with Northern Region 1 in determining how traditional uses and values are to be described. Particular discussion will be required around the portions of the proposed and alternate routes that fall within areas zoned in the *Draft Athabasca Land Use Plan: Stage 1* (Athabasca Interim Advisory Panel 2006) as “Special Management Area” and as “Conservation” area.

Should you require additional direction on the Government of Saskatchewan *First Nation and Métis Consultation Policy Framework* (Government of Saskatchewan 2010), please contact the Ministry of First Nations and Métis Relations’ Director, Consultation, Crystal McLeod at (306) 798-5166. For additional information on the Government of Canada’s Action Plan for Consultation with First Nations, Métis and Inuit Peoples, please contact Jeanne Cadorette, Indian and Northern Affairs Canada, at (613) 944-9321.

### **8.2.3 Heritage Resources**

Although there are no known archaeological sites in the vicinity of the proposed road routes, there is moderate to high potential for archaeological sites to be found along the route of the

proposed road.

A Heritage Resource Impact Assessment (HRIA) will be required for all portion of the project that fall within the following areas:

- along dry, upland margins of major bogs or fens (> 1 km in length);
- within 250 m of watercourses and lakes (> 1 km in length);
- within 50 m of historical trails;
- within 250 m of strand lines; and
- on escarpments (defined by 2 or more contour intervals within 200 m), prominent uplands, and hills/ridges (including eskers) within 500 m of a water source.

The HRIA will include a systematic pedestrian survey and sub-surface test exploration. The first component of the study will determine the presence of heritage sites within the project area.

#### **8.2.4 Non-Traditional Uses and Values Associated With the Lands and Resources**

Baseline data on non-traditional uses and values, associated with the lands and resources (i.e.; hunting, trapping, fishing, outfitting, mining, tourism, recreation, wilderness, etc.) that may be impacted by the project, should be gathered and described. Data will include the known locations of planned facilities, including recreational facilities and outfitting camps in the area of the proposed road. This data may be obtained by contacting the Ministry of Environment's Boreal Geomatics Section (306-953-2376). Natural and recreational resources will also be described for areas adjacent to or in close proximity of the proposed road.

#### **8.2.5 Navigable Waterways**

Any proposed works associated with the project that involve building in, on, over, through, or across any navigable waterway could result in interference with the public right to navigate.

The EIS should describe known waterway users, including known vessel use, on affected waterways. As well, all waterways affected by proposed works (new or changes to existing infrastructure) in, on, over, under, through, or across any waterway should be discussed in the EIS. This would also include any temporary works that may impede vessel passage and safety.

The EIS should include the following:

- Appropriately scaled maps depicting where the existing waterways and in-water works are located (latitude and longitude);
- Physical characteristics of the waterway (such as length, width, depth, seasonal flow, and fluctuations);
- Photographs of the proposed work locations (crossings, and upstream and downstream views), if available, and to be shown in an appendix; and
- conceptual drawings (plan and profile views) and proposed construction schedules and methods of the proposed in-water works, both permanent and temporary.

The submission of applications under the NWPA to the Regional Office of the Navigable Waters Protection Program would be required for all water crossings where the Minor Works and Waters (NWPA) Order were not applicable.

### **8.2.6 Health and Police Services**

There is potential for a new roadway to impact air transportation for health services in the communities of Fond du Lac and Uranium City. In addition, police services could potentially be affected by an increase in road traffic. A description of these current services and potential impacts should be provided.

## **9.0 ASSESSING ENVIRONMENTAL IMPACTS**

In conducting the EIA, the consideration of potential environmental effects should be done in a systematic and traceable manner and the methodology used described. The results of the assessment process should be clearly documented using summary matrices and tabular summaries where appropriate. The assessment is to include an evaluation of alternatives in determining the preferred approach. For the environmental effects (including cumulative effects) that are identified for the preferred approach, technically and economically feasible mitigation measures must be considered. Taking into consideration the mitigation measures identified, the report should also clearly identify the residual effects of the project (effects that that will exist after the implementation of mitigation) and make a determination regarding the importance of effects after mitigation measures.

The EIA must provide the information necessary to determine whether the benefits of the proposed development justify the environmental costs of the preferred approach. Information provided in the EIS, related to the potential impacts (including beneficial impacts) for each alternative, should be complete and detailed, including tables, figures, maps, and graphs where appropriate. Impacts should be analyzed as the expected changes from the baseline conditions (the difference between environmental conditions expected if the development were not to proceed and those expected as a consequence of it. Potential impacts should be described in terms of their probability, extent, frequency, reversibility and duration. The methods and assumptions used to estimate the impacts should be clearly documented and a rationale provided for the conclusions. Gaps in the quality of data that limit the analysis and conclusions should be explained and appropriate limitations placed on the reliability of predictions.

The following is a list of identified potential impacts that should be addressed in the EIS:

- disturbance to rare plants species and plant species of interest or concern;
- RAs have responsibilities under subsections 79(1) and 79(2) of the *SARA*. EC reminds RAs that:

“Every person who is required by or under an Act of Parliament to ensure that an assessment of the environmental effects of a project is conducted must, without delay, notify the competent minister or ministers in writing of the project if it is likely to affect a listed wildlife species or its critical habitat.”

“The person must identify the adverse effects of the project on the listed wildlife species and its critical habitat and, if the project is carried out, must ensure that measures are taken to avoid or lessen those effects and to monitor them. The measures must be taken in a way that is consistent with any applicable recovery strategy and actions plans.”

Therefore, the RAs should be made aware as soon as possible whether or not any known species at risk occur in the vicinity of the project site.

- disturbance to rare wildlife (birds, insects, mammals, and amphibians) species and their habitats, and to wildlife species of concern or interest, and their habitats. Please note that the discussion above on SARA in regards to rare plants, also applies to rare wildlife species;
- disturbance to ecosystem functioning caused by fragmentation;
- disturbance and risk to wildlife during construction and operation of the roadway;
- impacts to water and fish from fuel, chemical, or hazardous waste spills or leakages occurring during use, transportation, or storage of these materials;
- impacts from stream crossing construction on water (both quality and quantity), fish, and fish habitat (where present);
  - potential impacts should consider soil erosion (such as stream bank erosion, wind erosion, and erosion along road surfaces), direct soil or streambed disturbance (such as during construction), mass wasting (due to wash outs at road-related blockages or at failed stream crossing structures), or other processes. The direct loss of fish habitat from stream crossing development could occur from in-filling of a waterway.
- drainage impacts on water quality and quantity of receiving water bodies, during both the construction and operation phases.
- impacts to vegetation, including the removal of vegetation (particularly in sensitive habitats); potential adverse effects on biodiversity (such as the potential for the establishment of exotic invasive plant species and possible effects on genetic and species diversity); disturbance effects (such as edge effects); and (where relevant) the potential effects of vegetation control, road salt, and other operational considerations.
- impacts to wetland function and ecosystem functions that contribute to the integrity of the wetland will be affected by the project.
  - wetland functions are to include hydrological, biogeochemical, habitat, and ecological functions as well as social/cultural/commercial values, aesthetic/recreational values, and education and public awareness values.
- impacts on species listed under SARA and those recognized as “at risk” by COSEWIC, as well as impacts to their critical habitat and to residences of individuals of those species.
- impacts to traditional uses and values associated with the land and resources
  - through discussions and consultations with the Black Lake Denesuline First Nation and the Fond du Lac Denesuline First Nation, describe how identified traditional uses and values associated with the land and resources may be impacted by the proposed route locations.

- Métis Locals associated with Métis Northern Region 1 may have some interest in the area, and if so, some discussion would be appropriate on how the proposed route locations may impact their traditional uses and values associated with the land and resources.
- impacts to heritage resources.
- impacts to non-traditional uses and values associated with the land and resources:
  - estimate how the proposed route alternatives could adversely affect or enhance impact trapping, mining, hunting, fishing, camping, recreation, outfitting, wilderness, and other values. Particularly, explore how the road might affect outfitters that are currently offering “fly-in” fishing opportunities within and near the vicinity of the project area.. The potential for unauthorized clearing of trails and/or shorelines for boat launches and other activities should be identified. Contact the Black Lake Denesuline First Nation, the Fond du Lac Denesuline First Nation, the Prince Albert Grand Council, the Municipal Community of Fond du Lac, and the Municipal Community of Stony Rapids to discuss how portions of the road and route alternative may impact non-traditional uses and values within areas zoned in the *Draft Athabasca Land Use Plan: Stage 1* (Athabasca Interim Advisory Panel 2006) as “Special Management Area” and as “Conservation” area.
- impacts to social well-being other than impacts to uses and values associated with the land and resources.
  - for example, people living in the communities of Fond du Lac, Uranium City, and Camsell Portage who rely on air transportation may be adversely affected if the roadway indirectly leads to increased air transportation prices and a reduction in scheduled flights. Contact the communities of Fond du Lac, Camsell Portage, and Uranium City to understand how they may be impacted by the roadway. Other impacts could include unsightly garbage along the roadway and at the terminus of the roadway at the ferry crossing, and the discomfort of travelers if there are not frequent rest-stops.
- local social and economic benefits associated with the local project related to jobs, business opportunities, or training opportunities, with emphasis on benefits to First Nation and Métis people.
- impacts to the safety and health of workers and the general public during construction activities. Health Canada’s guidance document, *Useful Information for Environmental Assessments* (Health Canada 2010), can be found on their web site.
- impacts to the safety of users of the road and associated impacts to the safety of users of other roadways, which are linked to Highway 908, and which may now experience heavier traffic.
- impacts to health services provided through air transportation to the communities of Fond du Lac and Uranium City.
  - the all weather roadway may reduce the amount of air travel resulting in an increase in air transportation prices, and scheduled flights may decrease, impacting the ability to quickly and affordably transport patients in need of medical care. The greatest impact would be felt by those whose transportation for health services is not subsidized. Contact the communities of Fond du Lac and Uranium City to understand

the impacts and issues that the roadway may indirectly have on health services in relation to air transportation. SMHI may also wish to contact David Sampson at (306) 425-8584 to obtain further support in understanding the implications of the roadway on health services in relation to air transportation.

- issues and concerns arising from public consultation to date.
  - in addition to summarizing the issues and concerns raised, SMHI should also provide a table indicating the individual consultations, who the person was, the date, and the issues and concerns they raised. Statements of support could also be included in the table. The table should also summarize how the public's concerns, comments or information requests were/will be addressed. Any resulting modifications to mitigation measures or additional mitigation measures introduced to reduce the risk of residual environmental effects should be noted.

The above list is not necessarily complete and any additional potential impacts identified by SMHI, regulators, technical reviewers, the public, and First Nations and Métis communities will need to be addressed.

## **10.0 PROJECT ALTERNATIVES**

Different alternatives for the project that are considered technical and economically feasible should be considered and the environmental impacts for each alternative analyzed and explained in the EIS in order to provide the justification for the preferred approach. The analysis of the alternatives should factor in the life-cycle of the development such as construction, operation, maintenance, decommissioning, and rehabilitation. Evaluation of alternatives may consider route selection, access road and intersection locations, borrow pit locations, and locations for sources of aggregate material.

A discussion of the potential environmental effects that were considered relative to any such alternative means should be included. As well, the site selection process for all significant components of the project should be discussed in the EIS. The information presented should include the rationale for selection of the proposed sites (routes) along with how the current environmental conditions, predicted environmental impacts, and public consultations were considered in the decision making. The information presented should be in the form of tables, figures, and text, presenting the issues and outcomes, and environmental trade-offs associated with the each alternative route.

## **11.0 SELECTION OF THE PREFERRED ROUTE AND DESCRIPTION OF FULL PROJECT**

A detailed description of the preferred approach must be provided describing all phases of the project, including construction, operation, maintenance, decommissioning, reclamation, and monitoring. The description must provide the information necessary to determine whether the benefits of the proposed development to the province and its citizens justify the environmental costs of the preferred route. The following details must be included in the description of the preferred route as follows:

- exact locations (depicted on a map(s) and explained in text) of new highway routes and rights-of way, access roads and intersections at a scale appropriate to the effects and with identifiable geographic and environmental features, surface and ground water resources, current land use and nearby communities, residences, and industries.
- where possible, exact locations of borrow pits, aggregate sources, temporary work camps, maintenance facilities, water withdrawal facilities and other activities associated with the project at a scale appropriate to the effects and with identifiable geographic and environmental features, surface and ground water resources, current land use and nearby communities, residences, and industries.
- a detailed, large-scale map and a photomosaic showing the project area in relation to surrounding topographic and land-use features. Mapping should place the project in the context of current protected area reserves, First Nation Reserves, Treaty land entitlement land selections, recreational areas, wildlife protection lands, communities, heritage resource sites, etc.
- the anticipated schedule of all phases of the project.
- detailed descriptions of timing and the methods proposed for the various undertakings related to stream crossing construction (bridge construction, culvert placement, coffer dams, dewatering, erosion control, etc.).
- a summary of the potential environmental impacts of the preferred route documented through the EIA impacts for the preferred route.
- all potential impacts and mitigation measures of the preferred approach must be described before highway construction begins.

## 12.0 ACCIDENTS AND MALFUNCTIONS

The EIS must identify the potential for environmental effects (including cumulative effects) resulting from accidents and malfunctions and unplanned events during any phase of the project and evaluate the likelihood and circumstances under which these events could occur. The implementation of any mitigation measures, contingency plans, and response mechanisms must also be detailed in this section.

**All spills** of oil, fuel, or other deleterious materials, **regardless of size**, are to be reported to the SK 24-hour Spill Line 1-800-667-7525.

## 13.0 EFFECTS OF THE ENVIRONMENT ON THE PROJECT

The EIS must also take into account how the environment could adversely affect the project. This should include consideration of the effects of severe weather events, such as extreme drought, abnormal precipitation, runoff/flooding, fire, earthquakes, rockfalls etc. The EIS must take into account any potential effects of climate change on the project, including an assessment of whether the project is sensitive to changes in climatic conditions during its lifespan.

## 14.0 REGIONAL/CUMULATIVE IMPACT ASSESSMENT

The EIS should discuss whether existing environmental conditions, including other developments in the area, might influence the development or its potential impacts. The discussion should address whether the project-specific effects of the development combined with the impacts from the existing and planned developments in the region will result in, or contribute to, any cumulative environmental effects or regional effects in the short or long term.

Cumulative effects are residual effects on the environment (i.e. impacts that occur after mitigation measures have been put in place) combined with the environmental effects of past, present, and future projects or activities. Cumulative effects can also result from the combination of different individual environmental effects of the project acting on the same environmental component. As such, the effects of this project must be considered together with those of other projects and activities that have been, or will be carried out, and for which the effects are expected to overlap with those of the project (i.e. overlap in same geographic area and time).

In order to consider the potential cumulative environmental effects of the project, the EIS should identify other past, present, or reasonably foreseeable future projects carried out in the study area. The emphasis in this section should be on “reasonably foreseeable” projects (e.g., projects that have been approved or that are currently advancing through the regulatory approvals process). Ongoing discussion with federal authorities is recommended in preparing a list of other projects and activities that should be addressed. At a minimum, effort should be made to identify other projects planned by local and regional governments as well as provincial and federal agencies.

The projects should not be limited to other public transit/transportation infrastructure projects. All projects must be considered, especially those that may add cumulative effects on water quality, vegetation, wildlife habitat, air quality, and noise, as these environmental factors often experience the most impact from multiple projects/cumulative effects and should be a focus of a cumulative effects analysis. Generally speaking, the information available to assess the environmental effects from other projects can be expected to be more conceptual and less detailed as those effects become more remote in distance and time to the project, or where information about another project or activity is not available. The consideration of cumulative environmental effects may, therefore, be at a more general level of detail than that considered in the assessment of the direct project-environment interactions.

Where potentially significant adverse cumulative effects are identified, additional mitigation measures may be necessary.

The Agency guidance documents, *Operational Policy Statement - Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act* (Canadian Environmental Assessment Agency, 2007) and *Cumulative Effects Assessment Practitioners Guide* (Canadian Environmental Assessment Agency 1999) should also be consulted regarding the scope of cumulative impacts to be evaluated in the EIS.



## 15.0 MITIGATION MEASURES

Measures that will be implemented to minimize adverse impacts and enhance positive impacts of the preferred route must be described. Any adverse impacts resulting from the project that cannot be mitigated must be explained. A table summarizing the mitigation measures for the identified potential impacts for the preferred route would be beneficial to technical and public reviewers.

All potential impacts and mitigation measures of the preferred route must be identified before highway construction begins. Provincial and federal government specialists have provided some of the details and considerations that must be included in developing the mitigation measures:

- stream crossing requirements – bridge construction, culvert placement (and related cross-sections);
- bridge structures that completely span a watercourse without altering the stream bed or bank are preferred to structures that are placed within the stream bed and, therefore, result in loss of fish habitat or alteration of natural channel processes;
- for road crossings developed on fish bearing waters, Best Management Practices for reducing or eliminating impacts to fish and fish habitat must be developed and implemented. These practices should address habitat loss, compensation for habitat loss and sediment and erosion management during all phases of construction and operation of the road;
- rehabilitation measures for borrow sources.
- estimated aggregate requirements and anticipated life of aggregate sources, including use in other projects (if applicable) and rehabilitation.
- erosion and sediment control measures and related locations.
- in regard to reclamation and revegetation within the right-of-way, section 9.1 of the IEE states that “Within 2 to 4 weeks of revegetation, a seedling establishment survey will be conducted.” Some of the species listed may take longer than 2 to 4 weeks to establish or they may not establish until the following season. Therefore, EC recommends that a seedling establishment survey be conducted one year after revegetation as well as in the proposed 2 to 4 weeks.
- provide an Erosion and Sediment Control (ESC) Plan in the EIS for review by EC.
- standards for overall construction.
- the procedures and guidelines that will be utilized in construction, operation, and mitigation activities.
- provide an Environmental Construction and Operation (ECO) Plan in the EIS for review by EC.
- procedures for documenting the types, quantities, storage locations, and handling procedures for waste, fuel, hazardous substances, and waste dangerous goods.
- measures to manage wastes and debris (including non-merchantable timber) during clearing and construction. Note that wastes deposited on Reserve Land may require a permit under the Indian Waste Disposal Regulations of the Indian Act.

- measures to prevent spills or leakages of fuel, chemicals, or hazardous wastes during use, transportation, or storage of these materials.
  - the approximate volumes of stored fuel and lubricants for equipment should be identified along with the likely locations and related mitigation measures to ensure environmental protection. Any measures that will be implemented to recycle and reuse materials, increase energy efficiency and reduce waste should be outlined.
- measures to ensure occupational health and safety of worker during construction, including measures for health and safety when working with explosives..
- measures to ensure the safety of the users of the all weather roadway, and additional measures that may be taken to ensure the safety of the users of adjoining roadways that may be subject to heavier usage as a result of the new all weather roadways.
- measures to provide training opportunities, and ongoing employment for local communities, First Nations, and Métis people.
- measures to mitigate impacts to rare plants.
- measures to prevent the spread of non-native vegetation.
- measures to mitigate impacts to rare wildlife and their habitats.
- measures to mitigation impacts to migratory birds.
  - if clearing must take place within the restricted timeframe, SMHI will ensure that a person with qualified bird expertise confirms that there are no active nests in the area before clearing begins.
- measures taken to avoid or lessen any effects of the proposed project on rare wildlife species and other wildlife species of concern or interest, as well as measures taken to avoid or lessen any effects on critical habitats and residences of individuals of those species. In accordance to the *Draft Athabasca Land Use Plan: Stage 1* (Athabasca Interim Advisory Panel 2006), the discussion should include measures taken during the road construction, operation, and closure stages to limit hunter access and minimize the impact on caribou and their habitats.
- measures taken to monitor all adverse effects on listed wildlife species and their critical habitat.
- measures taken to monitor the adverse effects, consistent with any applicable recovery strategy, management plans, and action plans.
- measures taken to reduce the cumulative environmental effects on all SARA listed species and those recognized as “at risk” by COSEWIC, as well as cumulative effects to critical habitats and to the residences of individuals of those species.
- discuss residual effects on species at risk and the degree of scientific uncertainty related to the information used.
  - under the SARA, every person who is required by, or under an Act of Parliament to ensure that an assessment of the environmental effects of a project is conducted must, without delay, notify the competent minister or ministers in writing of the project if it is likely to affect a listed species or its critical habitat. The person must identify the adverse effects of the project on the listed wildlife species and its critical habitat and, if the project is carried out, must ensure that measures are taken to avoid or lessen

those effects and to monitor them. The measures must be taken in a way that is consistent with any applicable recovery strategy and action plans.

- also, under section 79 of the SARA, the RAs have a responsibility to notify EC if the project “is likely to affect a listed wildlife species in its critical habitat”. Therefore, the RA’s should be made aware as soon as possible whether or not any known Species at Risk are to occur in the vicinity of the project. A strategy should be developed to protect any identified species at risk, with a primary focus on avoidance. The methods to be used to conduct the biological inventory as well as any measures to protect and identify species at risk should be provided for review and further guidance. This information should also be outlined in the EIS.
- measures to mitigate impacts to wetlands.
  - discuss how the mitigation measures are expected to meet or exceed *The Federal Policy on Wetland Conservation* (Government of Canada 1991) with the goal of achieving ‘no net loss’ of wetland function under the Policy.
  - discuss how the development of wetland compensation plans meet or exceed the requirements of the Wetland and Upland Mitigation Guidelines for Road Construction (TEC, 2006).
  - in addressing wetland mitigation, SMHI may wish to formulate strategies similar to those used for the Lewvan Interchange along the Trans-Canada Highway in south Regina.
- measures to mitigate changes to local natural drainage patterns. Note, that if such impacts occur, a drainage permit must be obtained from the Saskatchewan Watershed Authority.
- measures to prevent disturbance to water and fish resulting from water runoff, soil erosion, soil disturbance, or mass wasting.
- measures to ensure that heritage resources are protected.
  - where heritage resources have been identified within the project area, the HRIA will indicate where suitable site avoidance measures (including right-of-way relocation) may be implemented. The HRIA will also establish the content, structure and importance of those heritage sites located in unavoidable conflict with development. On that basis, both the need for and scope of any migratory follow-up (including archaeological salvage excavation) will be determined.
  - the HRIA must be carried out by qualified personnel under an approved investigation permit issued through the Heritage Branch of the Ministry of Tourism, Parks, Culture and Sport.
- measures to accommodate issues and concerns documented during public consultation.

## 16.0 Commitments Register

Technical reviewers will expect a commitments register outlining each commitment made to mitigate the environmental impacts of the preferred route and to meet any regulatory requirements. The register should provide a brief description of the commitment, indicate how the commitment is to be implemented, indicate how and when the implementation of the

commitment is to be assessed, and describe any follow-up action items. The register should be developed in consultation with the EAB, the RAs and the Agency.

## **17.0 Monitoring, Reporting and Follow-Up**

Technical reviewers will expect a monitoring and reporting strategy for the commitments outlined in the Commitments Register. The reporting should indicate how effectively the commitment has been or is being met, indicate any preventive actions where a commitment may not be met, and any actions to correct non-conformances where a commitment has not or is not being met. The strategy should indicate which reviewing agency should be reported to for each commitment, and include a strategy on how the EAB and federal regulatory agencies will be kept informed of all monitoring and reporting to ensure that these actions are being undertaken. An annual report to the EAB, summarizing monitoring and reporting activities is a suggested approach.

A statement on inspection and compliance monitoring activities is necessary in the EIS to later ensure that proposed mitigation is implemented and functioning as expected (note: additional mitigation monitoring information may also be requested during project construction). It is preferred that an initial mitigation monitoring plan be submitted as part of the EIS, and that if necessary modification be made and submitted prior to construction.

INAC, TC and DFO and have not currently identified a likely need for a formal federal follow-up program for the proposed project. A decision on the need for a follow-up program is typically made once the likely effects of the project and proposed mitigation measures are known.

## **18.0 SIGNIFICANCE OF RESIDUAL ADVERSE ENVIRONMENTAL EFFECTS**

The criteria for evaluating and describing the significance of the residual (post-mitigation) effects (including cumulative effects) may include: magnitude; duration and frequency; ecological context; geographic extent; and degree of reversibility. Existing federal and provincial regulatory and industry standards and guidelines are relevant as points of reference for evaluating significance. Professional expertise and judgment may also be applied in evaluating the significance of an environmental effect. All applicable federal and provincial laws must be respected.

To satisfy CEA Act requirements, this statement must include conclusions specifically on whether the project is likely to cause significant adverse effects on the environment. The analysis must be documented in a manner that readily enables conclusions on the significance of the environmental effects to be drawn. The RAs will make the final decision on the significance of the environmental effects.

## **19.0 PUBLIC INVOLVEMENT**

In addition of the opportunity for the public to comment on the scope and draft PSGs as discussed in section 19 below, the public will be given an opportunity to participate in the conduct of the environmental assessment through public meetings to be held by the proponent, as is required in both federal and provincial environmental assessment procedures. SMHI will undertake a significant public involvement program that informs the public about the project and receives feedback on potential issues, interests and concerns related to the project and alternate routes. These issues should then be recorded in the EIS along with the measures that will be taken to address concerns and enhance opportunities. Public meetings or open houses should be held in the impacted communities to outline the preferred route and route alternatives and to obtain comments on the options. Prior to this, meetings/interviews should be held with trappers, fishermen, hunters, elders, councilors and others from the communities/First Nations to obtain a clear understanding of the issues, land uses and local knowledge that will assist in choosing a preferred route.

The public will also be provided with an opportunity to examine the EIS, the comprehensive study report prepared by the federal government and the Technical Review Comments prepared by the provincial Environmental Assessment Branch. The public will be requested to provide their comments to the respective federal and provincial Ministers who will be issuing an environmental assessment decision. This final public review period must be a minimum of 30 days to meet provincial requirements and will be extended, if necessary, through consultation with the Project Administration Team as per the Cooperative Agreement.

## **20.0 Invitation for Public to Comment on Project Scope and Draft Guidelines**

By policy, the Ministry of Environment makes Draft PSGs available to the public so that they can provide input into the Guidelines and outline any additional issues of interest to the public that should be included in the Guidelines. Interested persons may submit their comments on the above issues to:

Howard DeLong,  
EA Development Project Administrator  
Saskatchewan Ministry of Environment  
Environmental Assessment Branch  
3211 Albert Street, 4th Floor  
REGINA SK S4S 5W6  
Phone: (306) 787-6138  
Fax: (306) 787-0930

## **Appendix A: Recommended Mapping Requirements**

A description of the proposed work should include a map(s) identifying the proposed work with sufficient detail that the reader can understand the work and the location within the province of Saskatchewan. The following is a list of minimum recommended mapping requirements to display on every map:

- Title
- The Ministry of Highway and Infrastructures' name
- Author of map
- Date of map
- Nearby place names
- Major lakes and names
- Major rivers and names
- Nearby major roads and names
- North arrow
- Scale bar
- Coordinates
- Standard used for map coordinates (the Ministry of Environment typically used NAD83(CSRS98))
- UTM Zone (if applicable)
- Legend
- Small reference key map showing the location of the proposed project in relation to whole province of Saskatchewan Other information on the map(s) that would help in the evaluation of the proposal would include locations of other resources or values that could be impacted by the program(s). One map should also indicate the proposed work.

## Appendix B: Data and Information Sources

Agriculture and Agri-Food Canada. *Watersheds*; <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1229003100989&lang=eng>, or follow link - Agriculture and Agri-Food Canada/Programs and Services/Agri-Geomatics/Watershed

Agriculture and Agri-Food Canada. *Soil Landscapes of Canada*, <http://sis.agr.gc.ca/cansis/nsdb/slc/intro.html>, or follow link – Agriculture and Agri-Food Canada Canadian Soil Information Service/National Soil DataBase (NSDB)/Soil Landscapes of Canada (SLC),

Athabasca Interim Advisory Panel. 2006 *Draft Athabasca Land Use Plan, Stage One*, <http://www.environment.gov.sk.ca/Default.aspx?DN=77e08791-38ff-4b6c-bbd3-79c2af8320cc>, or follow link Government of Saskatchewan/Ministries and Agencies/Environment/Programs and Services/Land/Land Use Planning/Athabasca/Athabasca LUP Stage 1 Document

Canadian Environmental Assessment Agency. 2007. *Operational Policy Statement: Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*, <http://www.ceaa.gc.ca/default.asp?lang=En&n=1F77F3C2-1> , or by following link – Canadian Environmental Assessment Agency/Policy & Guidance/Guidance Materials/Operational Policy Statements/Addressing Cumulative Environmental Effects under the *Canadian Environmental Assessment Act*

Canadian Environmental Assessment Agency. 1999 *Cumulative Effects Assessment Practitioners Guide*. Prepared by the Cumulative Effects Assessment Working Group and AXYS Environmental Consulting Ltd. 134 Pages. <http://www.ceaa.gc.ca/default.asp?lang=En&n=1F77F3C2-1>, or by following link - Canadian Environmental Assessment Agency/Policy & Guidance/Guidance Materials/Procedural Guides/Cumulative Effects Assessment Practitioners Guide

Canadian Environmental Assessment Agency. *Basics of Environmental Assessment*. <http://www.ceaa.gc.ca/default.asp?lang=En&n=B053F859-1> or follow link – Canadian Environmental Assessment Agency/Environmental Assessments/Basics of Environmental Assessment

Canadian Plains Research Centre. 1998. *The Ecoregions of Saskatchewan*, University of Regina, Regina, Saskatchewan. 204 pages. Available for purchase from the Government of Saskatchewan, <http://www.publications.gov.sk.ca/details.cfm?p=11934>. or follow link – Government of Saskatchewan/Publication/Canadian Plains Research Centre/Natural Sciences/The Ecoregions of Saskatchewan

Environment Canada. 2004. *Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada*. First Edition, Canadian Wildlife Service, Environment Canada. 68 Pages. For a copy, contact Environment Canada's Environmental Assessment Coordinator for Saskatchewan, Amy Wilker (306-780-5399, [Amy.Wilker@ec.gc.ca](mailto:Amy.Wilker@ec.gc.ca))

Government of Canada. 1991 *The Federal Policy on Wetland Conservation*. Canadian Wildlife Services, Environment Canada, Ottawa, Ontario. 15 pages.  
<http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=BBAAE735-EF0D-4F0B-87B7-768745600AE8>, or follow link –Environment Canada/Reports and Publications/Find a Publication/

Government of Canada and Government of Saskatchewan 2005. Canada-Saskatchewan Agreement of Environmental Assessment Cooperation. 16 pages

Government of Saskatchewan. 2010. *First Nation and Métis Consultation Policy Framework*. 20 pages <http://www.fnmr.gov.sk.ca/Consultation-Policy-Framework>, or follow link – Government of Saskatchewan/Ministries and Agencies/First Nations and Métis Relations/Aboriginal Consultation/Government of Saskatchewan First Nations and Métis Consultation Policy Framework.

Health Canada. 2010. *Useful Information for Environmental Assessments*. Ottawa, Ontario. 17 pages. [http://www.hc-sc.gc.ca/ewh-sent/alt\\_formats/hecs-sesc/pdf/pubs/eval/envIRON\\_assess-eval/envIRON\\_assess-eval-eng.pdf](http://www.hc-sc.gc.ca/ewh-sent/alt_formats/hecs-sesc/pdf/pubs/eval/envIRON_assess-eval/envIRON_assess-eval-eng.pdf), or follow link Health Canada/Environmental & Workplace Health/Reports and Publications/Environmental Health Assessment/Useful Information for Environmental Assessments

Henderson, Darcy 2009a. *Activity Set-Back Distance Guidelines for Prairie Plant Species at Risk*. Canada, Environment Canada, Canadian Wildlife Service, Prairie and Northern Region, Saskatoon, Saskatchewan. 18 pages. For a copy, contact Environment Canada's Environmental Assessment Coordinator for Saskatchewan, Amy Wilker (306-780-5399, [Amy.Wilker@ec.gc.ca](mailto:Amy.Wilker@ec.gc.ca))

Henderson, Darcy 2009b. *Occupancy Survey Guidelines for Prairie Plant Species at Risk*. Canada, Environment Canada, Canadian Wildlife Service, Prairie and Northern Region, Saskatoon, Saskatchewan, 44 pages. For a copy, contact Environment Canada's Environmental Assessment Coordinator for Saskatchewan, Amy Wilker (306-780-5399, [Amy.Wilker@ec.gc.ca](mailto:Amy.Wilker@ec.gc.ca))

Saskatchewan Conservation Data Centre. 2010a *Expected Animal and Invertebrate Species List by Ecoregion*. <http://www.biodiversity.sk.ca/SppList.htm>

Saskatchewan Conservation Data Centre. 2010b *Expected Fungi Species List by Ecoregion*. <http://www.biodiversity.sk.ca/SppList.htm>

Saskatchewan Conservation Data Centre. 2010c *Expected Plant Species List by Ecoregion*. <http://www.biodiversity.sk.ca/SppList.htm>

Saskatchewan Conservation Data Centre. 2009 *Standardized Methodology for Surveys of Rare Plants*. <http://www.biodiversity.sk.ca/Pubs.htm>



Saskatchewan Ministry of Environment. 2009 *Terrestrial Field Surveys: Permit Requirements, and Design & Methodology Guidelines* <http://www.biodiversity.sk.ca/Pubs.htm>

Saskatchewan Ministry of Environment. *EIA Conduct – EIS Content* <http://www.environment.gov.sk.ca/Default.aspx?DN=2eea259e-3f48-41af-9cb7-0a9f650762b3>, or follow link – Government of Saskatchewan/Ministries and Agencies/Environment/Programs and Services/Environmental Assessment/A Guide to the Environmental Assessment Process/EIA Conduct – EIS Content

Saskatchewan Ministry of Environment. *Past/Historical Fire Activity*. <http://www.environment.gov.sk.ca/Default.aspx?DN=e3b65a62-d11c-4a21-bd82-5247414d0f7d>, or follow link. Government of Saskatchewan/Ministries and Agencies/Environment/Programs and Services/Wildfire Management/Past-Historical Fire Activity. May also wish to directly contact the Ministry of Environment's Fire Management and Forest Protection Branch, Science and Planning Section (206-953-3459) for digital fire disturbance information, large scale maps, and the most recent fire disturbance updates. Saskatchewan Ministry of Environment. 2009

Saskatchewan Research Council. 2006. *Landcover, Northern Digital Land Cover*, Saskatoon, Saskatchewan. Available by contacting the Ministry of Environment's Boreal Geomatics Section (306-953-2376).