

ALDERON

IRON ORE CORP

**KAMI IRON ORE MINE &
RAIL INFRASTRUCTURE,
Labrador**

**Kami Iron Ore Project
Environmental Impact Statement**

VOLUME I Part I

September 2012

ENVIRONMENTAL IMPACT STATEMENT DOCUMENT ORGANIZATION

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Foreword

In the preparation of the Environmental Impact Statement for the Kami Iron Ore Project, Alderon has strived to produce a focused assessment which provides useful information in a readable format. It is our objective to allow the reader to quickly gain an overall understanding of the Project and its predicted effects and then to move on the specific areas of interest.

We have designed the Environmental Impact Statement and supporting documentation to achieve this objective. The information is presented in two separate volumes; one for the Project components located in Labrador (Volume One), and one for the Project components in the province of Québec (Volume Two).

Each Volume is divided into two parts: Part I of each Volume presents the overall findings of the assessment with sufficient detail to allow the reader to understand the issues, Project effects and the proposed mitigation measures; Part II of each Volume presents the details of the assessment on a Valued Ecosystem Component basis. Supporting baseline studies are attached as appendices.

Although this format may be a deviation from a more typical presentation, we have ensured that we have addressed the Guideline requirements in their entirety. The table of concordance presented at the beginning of each Volume is provided to help the reader in navigating through the document.

The preparation of the Environmental Impact Statement is the result of many dedicated scientists, engineers and environmental assessment practitioners. Alderon would like to thank Stantec, Amec, BBA Engineering, Golder Associates, Strategic Concepts Norton Rose Canada, and Osler, Hoskin & Harcourt LLP for their professional contributions to this effort.

We would also like to acknowledge the cooperation of the federal and provincial regulatory agencies and public stakeholders and Aboriginal groups who have contributed to our understanding of their expectations, issues and information requirements.

Finally, I would like to thank the Alderon project team for their diligence and support during the preparation of this documentation and, in particular, a special acknowledgment to Elisabeth Poirier-Garneau, Alderon's Manager of Environmental Assessment for her patience, understanding and fortitude.

Alderon looks forward to advancing to the next steps of the Environmental Assessment process.

Original Signed By

Todd Burlingame
Executive Vice President Environment and Aboriginal Affairs
Alderon Iron Ore Corp.

EXECUTIVE SUMMARY

Alderon Iron Ore Corp. (Alderon) is proposing to construct and operate the Kami Iron Ore Project which will consist of an open pit iron ore mine and associated infrastructure in western Labrador, as well as a terminal facility at the Pointe-Noire Terminal at the Port of Sept-Îles, Québec (the Project).

The Labrador Project components will require approvals from the Government of Newfoundland and Labrador and are subject to environmental assessment (EA) under the *Environmental Protection Act* (NLEPA) and associated *Environmental Assessment Regulations*. Federal approvals will be required, which trigger the requirement for a federal EA under the *Canadian Environmental Assessment Act* (CEAA), at the comprehensive study level. This Environmental Impact Statement (EIS) has been prepared to address regulatory requirements for a provincial and federal EA and specifically address the EIS Guidelines (refer to Appendix B) and issues raised by the public through Alderon's public consultation process.

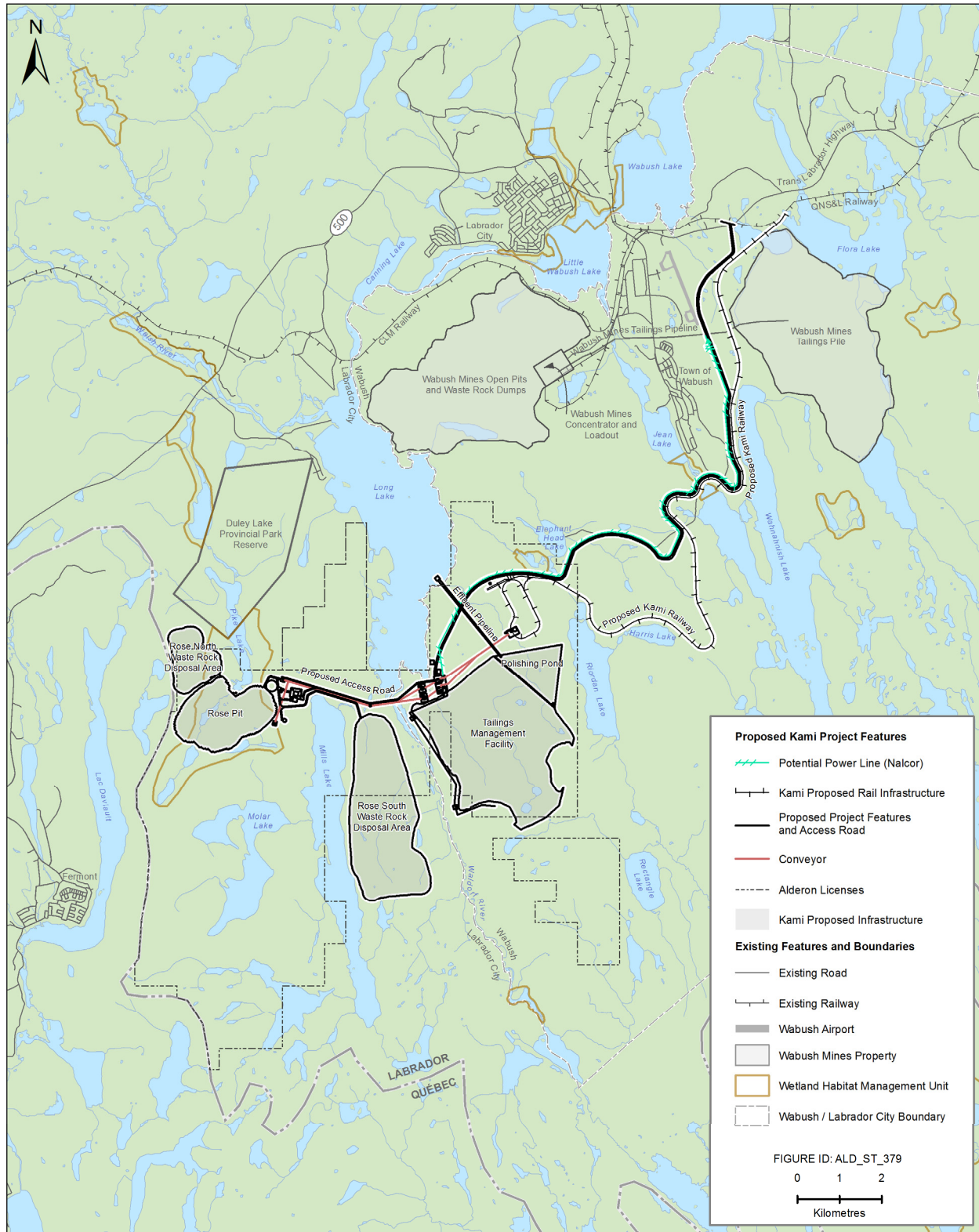
This Executive Summary has been prepared for Volume 1: Kami Iron Ore Mine and Rail Infrastructure, Labrador. The environmental assessment of the Concentrate Storage and Load-out Facility is presented in Volume 2.

Project Description Overview

The Kami Iron Ore Mine and Rail Infrastructure is located entirely within Labrador, south of the towns of Wabush and Labrador City in Newfoundland and Labrador and east of Fermont, Québec. The Project site plan is shown on Figure E-1. The Project includes construction, operation, and rehabilitation and closure of the following primary components:

- Open pit (Rose Pit);
- Waste rock disposal areas (Rose North and Rose South);
- Processing infrastructure which includes crushing, grinding, spiral concentration, magnetic separation, and tailings thickening areas;
- Tailings management facility (TMF);
- Ancillary infrastructure to support the mine and process plant (gate and guardhouse, reclaim water pumphouse, truck wash bay and shop, electrical substation, explosives magazine storage, administration / office buildings, maintenance offices, warehouse area and employee facilities, conveyors, load-out silo, stockpiles, sewage and water treatment units, mobile equipment, access road, and transmission lines);
- Rail transportation component including rail line construction to connect the mine site to the Québec North Shore & Labrador (QNS&L) Railway; and
- Electrical transmission line from terminal to be located by Nalcor to the mine site.

Figure E-1 Kami Iron Ore Project: Site Plan



The mine will have a nominal capacity of 16 million metric tonnes of iron ore concentrate per year. Concentrate will be transported by existing rail to the Pointe-Noire Terminal at the Port of Sept-Îles, where Project-related components will be located on land within the jurisdiction of the Port Authority of Sept-Îles.

The purpose of the Project is to develop the iron ore deposits within the Kami Mine Property in Labrador, and in doing so, to produce iron ore concentrate suitable for sale to international markets. There is currently a very high level of demand for iron ore and steel worldwide, which is creating and maintaining relatively strong markets and good prices for iron and steel.

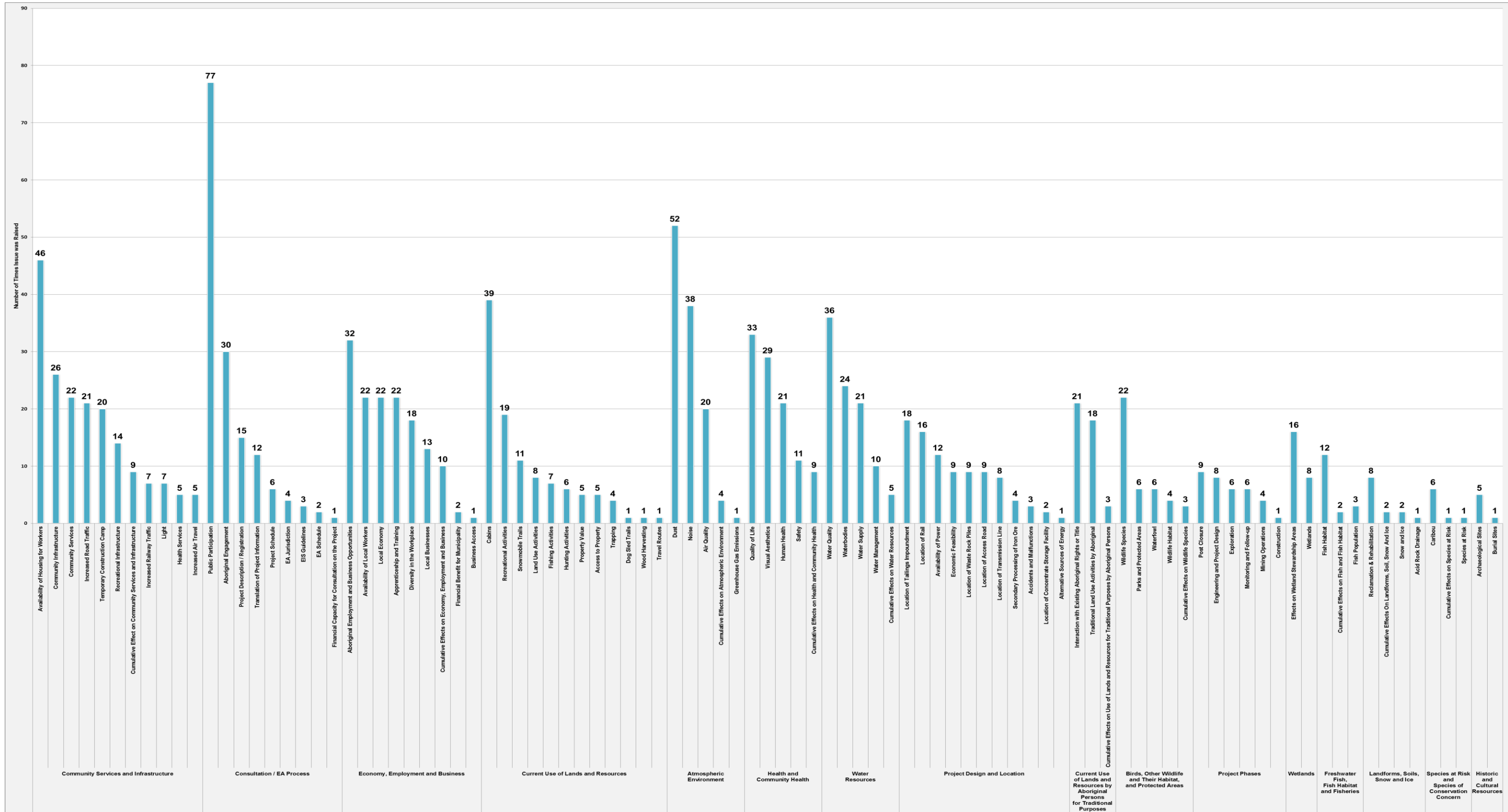
Project construction will occur over approximately 24 months, during which significant direct employment in a wide variety of occupations will be created. During Project operations, further long-term positions will be created, which will extend for approximately 17 years. In addition, the requirement for goods and services during Project construction and operations will provide significant business opportunities. These direct economic benefits will be supplemented by indirect and induced employment and business opportunities through, for example, spending by Project employees and contractors.

Summary of Consultation and Engagement

Since the acquisition of the Kami Property in December 2010, Alderon has worked to establish open and transparent communication with various potentially interested and/or affected individuals and organizations. Alderon's approach includes engagement with regulatory agencies, Aboriginal groups, municipalities, and the public. Consultation activities have been conducted for the Project as a whole (encompassing Labrador and Québec components and interests).

The frequency of issues raised is presented in Figure E-2.

Figure E-2 Frequency of Issues Raised During Engagement Activities



Aboriginal Engagement

Alderon recognizes the importance of building relationships, based on mutual trust and respect, with those Aboriginal groups who have recognized legal rights or whose traditional land and resource use activities in the Project area may be affected by the Kami Project and is committed to working collaboratively and constructively with Aboriginal groups in proximity to the Kami Project to achieve mutually beneficial outcomes. Alderon has engaged with the following five Aboriginal groups:

- Innu Nation;
- NunatuKavut Community Council;
- Uashat mak Mani-Utenam;
- Matimekush-Lac John; and
- Naskapi Nation of Kawawachikamach.

Aboriginal engagement during the EIS development included information sharing, community engagement and capacity building. Community engagement activities undertaken with Aboriginal communities and organizations included:

- Meeting with community leaders to identify appropriate engagement activities;
- Offers to conclude formal engagement arrangements, supported by capacity funding, and the provision of financial and other support for community initiatives; and
- Providing opportunities for community meetings to provide information and hear community concerns.

The five most frequently raised issues raised during Aboriginal engagement were:

- Aboriginal employment and business opportunities;
- Aboriginal engagement;
- Interaction with existing aboriginal rights or title;
- Traditional land use activities by Aboriginal persons; and
- Potential effects to wildlife species.

Public Stakeholder Consultation

The participant list for public stakeholders includes residents of the towns of Labrador City, Wabush, Fermont and Sept-Îles. In addition to stakeholders within these boundaries, Alderon has also engaged other potentially affected and/or interested stakeholders including provincial and federal government agencies and departments, non-governmental organizations (NGOs), economic development organizations, and outdoor recreation users and outfitters.

The following activities were undertaken to consult with public stakeholders:

- Public notices were issued to share information with the general public and those potentially affected by the Project.
- A Project website was created to provide Project information, EA documentation, notifications, and consultation materials. An area on the website was provided for stakeholders to submit contact information and comments.
- Public Open houses were held to provide information to the general public and other interested stakeholders and receive feedback. Sessions included information on the Project and the EA process, including information on community and environmental studies and potential effects. Technical experts and Alderon representatives were present at stations to hear feedback and respond to stakeholder concerns.
- Key stakeholder meetings were held to inform key stakeholders on Project design and EIS studies, and identify issues with the Project to be included in the EIS. Targeted sessions allowed specific stakeholder concerns to be explored in greater depth.

The issues that were identified most frequently during public consultation included:

- Public participation;
- Potential effects of dust;
- Availability of housing for workers;
- Potential effects on cabins; and
- Potential noise effects.

Regulatory Consultation

Alderon's approach to regulatory consultation is to establish and maintain transparent dialogue with federal and provincial regulators throughout development of the EIS. Consultation activities include ongoing information updates and meetings, including sharing stakeholder and Aboriginal issues as they arise. In addition, Alderon met with reviewing agencies during the development of the EIS to present baseline studies, study methodology and effects assessment for each component chapter.

Post-EIS Submission Consultation

Following submission of the EIS, Alderon will continue Aboriginal engagement, and public and stakeholder consultation activities. In addition, the EIS and Plain Language Summary will be made available for public review and comment.

Avoidance and Mitigation Measures

Alderon has taken measures from the outset of Project planning to avoid and mitigate effects. Wherever possible, the Project has been planned and designed to avoid adverse environmental effects through the careful configuration of Project components and by the use of economically and technically feasible control technologies. In particular:

- The Project was configured to avoid Duley Lake Provincial Park Reserve;
- Where economical and technically possible, the Project was designed to avoid waterbodies and wetland Management Units;
- The larger of the two waste rock disposal areas, Rose South, was moved approximately 5 km to the east to avoid dust, noise, and viewscape issues raised by the residents of Fermont;
- A new road will now be built to avoid Grenfell Drive to access the mine site, eliminating concerns with increased traffic and safety;
- The rail line was moved further away from the northeast section of Wabush to reduce potential interactions with future town development; and
- The location of the proposed power line was re-routed in response to community concerns.

Where avoidance was not possible, mitigation measures have been incorporated into the design of the Project. Specific examples of mitigation by design are provided below:

- The open pit is being designed on the basis of factor of safety and complies with codes and regulations regarding open-pit slopes;
- Waste rock storage areas have been designed for closure and will be constructed using an ascending benched construction sequence. The construction sequence will allow for development and progressive rehabilitation in sections. Material obtained during the clearing and grubbing will be used to revegetate the bench and slope of the preceding lift as progressive rehabilitation progresses;
- The Tailings Management Facility (TMF) has been designed so that the tailings may be progressively rehabilitated according to safety codes and standards;
- The size of the rail loop was reduced in response to consultation with local cabin owners;
- The Project processing plant and associated facilities, including infrastructure such as site buildings, roadways, transmission lines, and sedimentation ponds, will be designed and constructed according to laws and regulations, industry standards, and codes to minimize and prevent adverse environmental effects; and
- Railway design will follow the prescribed standards for track construction as set out by the American Railway Engineering and Maintenance-of-Way Association (AREMA) and QN&SL track standards. Standard subgrade construction techniques will be applied.

In addition, standard mitigation measures and practices demonstrated to be effective on similar projects will be implemented on this Project. Orientation for new employees will include environmental policies and familiarization with protection measures as detailed in the Environmental Protection Plan (EPP) for the Project. Project employees and contractors will undergo regular training and refreshers to ensure they are familiar with potential environmental issues associated with the Project. Alderon is also in the process of pursuing the finalization of an MOU with the municipalities to address the impact of the Project on accommodation and associated infrastructure. Alderon is in the process of pursuing a Corporate Stewardship Agreement with the municipalities and the Province (through the Eastern Habitat Joint Venture) to address the effects of the Project on Management Units, and the development and implementation of a Fish Compensation Plan will mitigate losses of fish habitat resulting from the Project to avoid serious harm to fish.

Management Planning

A variety of Environmental Management Plans (EMPs) will be developed for the Project in consultation with Aboriginal groups, regulatory agencies, and public stakeholders including:

- An EPP;
- A Mine Water Management Plan;
- A Rehabilitation and Closure Plan;
- An Emergency Response Plan (Contingency Plan);
- A Waste Management Plan;
- A Tailings Management Plan; and
- An Avifauna Management Plan.

In addition to the EMPs, a Healthy and Safety Program will be developed, and Hazard Identification and Risk Assessments will be undertaken.

Alderon is participating in the Labrador West Regional Task Force to manage effects collaboratively with local mining companies, municipalities and governments. The Labrador West Task Force serves to identify ways in which multiple stakeholders may collaborate to manage impacts upon the communities of Labrador City and Wabush arising from the rapid growth of the local mining industry. The Task Force operates in conjunction with the Labrador West Community Advisory Panel, which provides information to the Task Force about issues and opportunities for sustainable development in the communities of western Labrador.

A Development Plan and a Rehabilitation and Closure Plan will be developed for the Project in consultation with the provincial government. The Rehabilitation and Closure Plan will define in detail the actions necessary to achieve the rehabilitation and closure objectives and requirements. It will address ownership, transfer, and control of Project components, and the responsibility for monitoring and maintaining Project structures.

Specifically, the Rehabilitation and Closure Plan will describe how:

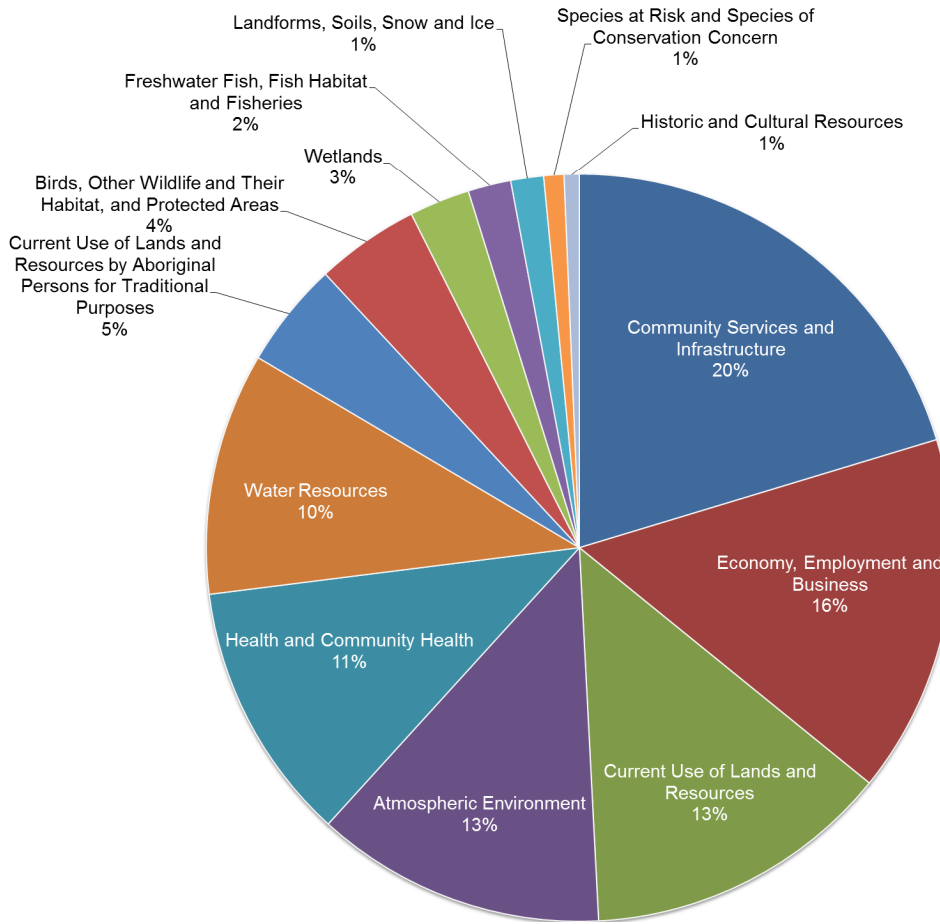
- Hazardous chemicals, reagents and materials will be removed;
- Equipment will be disconnected, drained and cleaned, disassembled and sold for reuse or to a licensed scrap dealer;
- Any equipment deemed potentially hazardous will be removed from the site and disposed of in accordance with appropriate regulations;
- All buildings and surface infrastructure including the rail line will be dismantled and removed and disposed of;
- Material and equipment with salvage value will be removed and sold for its value;
- Fuel storage and dispensing facilities will be removed;
- Soil and groundwater conditions in areas that warrant assessment (e.g., fuel dispensing facility, chemical storage buildings, ore storage areas) will be assessed and remedial measures will be implemented where necessary;
- The tailings pile will be left in place, and the surface area that was not rehabilitated progressively will be graded and vegetated;
- Dewatering wells and groundwater monitoring wells will be decommissioned;
- Barricades and signage will be installed around the open pit in areas not completed as part of progressive rehabilitation during the operations stage, as necessary;
- In general, site drainage patterns will be re-established, as near as practical, to natural, pre-development conditions; and
- Grading and/or scarification of disturbed areas will be undertaken to promote natural revegetation, or, in areas where natural revegetation is not sufficiently rapid to control erosion and sedimentation, the placement and grading of overburden will be considered.

The Rehabilitation and Closure Plan will also detail the steps and procedures to be taken to progressively rehabilitate the site during operations and to provide final rehabilitation upon closure of the mine. All events associated with activities included in the Development Plan, and the Rehabilitation and Closure Plan, as well as those activities required for ongoing site monitoring and maintenance are included in financial assurance coverage. The Development Plan and Rehabilitation and Closure Plan provide the basis for the Financial Assurance agreement which is required to obtain approval for the proposed development.

Environmental Assessment Overview

The EIS focuses on issues raised during regulatory consultation, Aboriginal engagement and public stakeholder consultation. The proportion of issues identified during Aboriginal engagement and public consultation activities is shown in Figure E-3. In accordance with standard practice and the EIS Guidelines, the environmental effects of the Project were assessed for Valued Ecosystem Components (VECs) which are components or attributes of the environment that are important for ecological, legal, scientific, cultural, economic, or aesthetic reasons.

Figure E-3 Proportion of Issues Identified During Aboriginal Engagement and Public Consultation Activities



The biophysical VECs are:

- Atmospheric Environment;
- Landforms, Soils, Snow and Ice;
- Water Resources;
- Wetlands;
- Freshwater Fish, Fish Habitat, and Fisheries;
- Birds, Other Wildlife and their Habitats, and Protected Areas; and
- Species at Risk and Species of Conservation Concern.

The socio-economic VECs are:

- Historic and Cultural Resources;
- Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons;
- Other Current Use of Lands and Resources;
- Community Services and Infrastructure;
- Health and Community Health; and
- Economy, Employment, and Business.

The interactions between the Project and the VECs identified above have been analyzed to identify mitigation and effects management measures, and to determine the significance of residual adverse environmental effects. A complete assessment of Project effects, cumulative effects and effects resulting from accidents and malfunctions is presented in Chapters 14 to 26 of this EIS (a summary is provided in Chapter 13).

The Project will not result in likely significant adverse residual effects in isolation or cumulatively with other projects and activities. In the case of Economy, Employment and Business, the residual effects of the Project will be positive. Accidents and malfunctions, should they occur, may result in significant effects for some VECs. However, these are not likely to occur given the planning that has been undertaken (e.g., forest fire prevention and response plan, rail inspection and maintenance) and the standards that have been prescribed.

Environmental factors which could potentially affect the Project's design, construction and operation include local conditions and natural hazards, such as severe and/or extreme weather conditions and external events (e.g., flooding, ice jams, rock slides, landslides, fire, outflow conditions and seismic events). Planning and design of the Project has and will continue to consider extreme climatic, hydrologic, and geohazard criteria. Experience of other iron ore mines in the area, in combination with prescribed codes and standards provides a high level of confidence that environmental conditions are not likely to significantly affect the Project. Site monitoring will be undertaken to identify potential problems and verify effective mitigations. As such, no significant adverse effects of the environment on the Project are anticipated.

Benefits of the EA to Canadians

Environmental assessment, as a planning tool, is being used by Alderon to integrate issues and concerns raised by Aboriginal groups and stakeholders into Project planning and design. The EA process for the Project benefits Canadians in the following ways:

- Increased environmental benefits;
- Incorporation of sustainable development principles;
- Public participation;
- Application of technological innovations, where required;
- Increased scientific knowledge; and
- Community and social benefits.

Careful Project design and planning, in combination with identifying and addressing Aboriginal and public issues, has reduced adverse environmental effects and enhanced positive environmental effects. Examples include:

- The Project access route was changed, and a new road is to be constructed in order to eliminate the potential for traffic congestion along Grenfell Drive in Wabush.
- The Rose South Waste Rock Disposal Area was originally planned to be located adjacent to the pit and closer to the town of Fermont, Québec. In response to public requests and concerns over potential environmental effects to the town and its residents, Alderon has relocated the waste rock disposal area approximately 5 km to the east.
- Rail infrastructure was re-aligned so that it is farther from the northeast section of the Town of Wabush, and the size of the rail loop has decreased, thereby, decreasing the over-all Project footprint.
- The Tailings Management Facility (TMF) was sited to avoid waterbodies, to the extent possible.
- Through an environmental constraints analysis conducted at an early stage in the EA process, Project components were located to avoid, where economically and technically feasible, environmentally sensitive areas such as lakes, the Duley Lake Provincial Park Reserve and wetland Management Units. As such, environmental effects on these features were minimized by avoidance.

Follow-up and Monitoring

A follow-up and monitoring program will be designed and conducted, as appropriate, during all phases of the Project. The purpose of the follow-up program is to verify the accuracy of the predictions made in the environmental assessment as well as the effectiveness of the mitigation measures. Compliance and inspection monitoring will also be conducted. Compliance monitoring requirements will be guided by the *Metal Mining Effluent Regulations (MMER)* under the *Fisheries Act*, the *Environmental Control Water and Sewage Regulations* under the *Newfoundland and Labrador Water Resources Act*, and the Certificate of Approval that will be developed by the Newfoundland and Labrador Department of Environment and Conservation. The EPP for the Project will also serve as a standard against which compliance monitoring will be conducted.

The Project will result in effects to fish and fish habitat, and therefore a Compensation Plan will be developed. As part of this, compensation monitoring and follow-up will be necessary, the requirements of which will be included in the Compensation Plan. Ambient air, sound pressure level, and greenhouse gas emissions monitoring will also be conducted.

From a socio-economic perspective, monitoring will occur as per the Benefits Agreement, Benefits Plan and Diversity Plan including the monitoring of success in meeting targets specified in these plans. Continued engagement with local stakeholder groups, local authorities, and Aboriginal groups will serve to provide Project updates and monitor issues that may arise to be addressed.

Concordance with Guidelines

The EIS Guidelines require that the Executive Summary include a Table of Concordance that describes where each information requirement of the EIS Guidelines has been addressed in the EIS. Table E.1 lists the information requirements of the EIS Guidelines and gives the section(s) of the EIS in which the required information is presented.

Table E.1 Detailed Table of Concordance in Compliance with the EIS Guidelines

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1.2.3 Sustainable Development	4.3.3
1.2.4 Precautionary Approach	4.3.4
2.0 THE ENVIRONMENTAL ASSESSMENT PROCESS	
2.1 Contacts for the Environmental Assessment	1.1
2.2 Environmental Assessment Requirements	1.3
2.2.1 Canadian Environmental Assessment Act	1.3
2.2.2 Newfoundland and Labrador Environmental Protection Act	1.3
2.2.3 Québec	1.3
2.2.4 Delegated EIS Preparation	Information; Proponent has noted
2.3 Federal-Provincial Cooperation	Information; Proponent has noted
2.4 Public Consultation	1.5 and Chapter 10
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3.1.1 Labrador	1.2
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