

ORCA SAND AND GRAVEL PROJECT

COMPREHENSIVE STUDY REPORT

**WITH RESPECT TO
THE REQUIREMENTS OF A COMPREHENSIVE STUDY PURSUANT TO THE
*CANADIAN ENVIRONMENTAL ASSESSMENT ACT***

JUNE 30, 2005

EXECUTIVE SUMMARY	i
Part A – Comprehensive Study Background	1
1. Introduction.....	2
1.1 Purpose of the Comprehensive Study Report.....	2
1.2 The Federal Review Process.....	5
1.3 The Provincial Review Process	6
1.4 The Federal/Provincial Cooperation Agreement.....	6
2. Project Description and Scope of Assessment.....	7
2.1 The Proponent.....	7
2.2 Project Overview	7
2.3 Project Need/Alternatives Assessment	10
2.3.1 Project Need/Purpose.....	10
2.3.2 Alternatives To the Project	10
2.3.3 Alternative Means of Carrying Out the Project.....	12
2.4 Scope of Project.....	14
2.5 Scope of Assessment.....	15
2.5.1 Factors to be Considered.....	15
2.5.2 Scope of Factors to be Considered.....	15
3. Information Distribution and Consultation	17
3.1 Federal Coordination	17
3.2 Public Consultation in Accordance With The CEA Act.....	17
3.2.1 Section 21 – Public Participation Regarding Proposed Scope of Project.....	17
3.2.2 Section 21.2 – Public Participation in the Comprehensive Study	18
3.2.3 Section 22 – Public Access to Comprehensive Study Report.....	19
3.3 Provincial Consultation Measures	19
3.4 Consultation Measures Undertaken by Proponent.....	20
3.5 First Nation Consultation and Project Review.....	20
Part B – Comprehensive Study Assessment	22
1. Description of the Existing Environment	23
1.1 Description of the Biophysical Environment.....	23
1.1.1 Hydrology and Water Resources	23
1.1.2 Geology and Soils	24
1.1.3 Vegetation.....	25
1.1.4 Species at Risk	26
1.1.5 Fish and Fish Habitat	26
1.1.5.1 Freshwater Ecosystem	26
1.1.5.2 Marine Ecosystem.....	28
1.1.6 Wildlife and Wildlife Management	31
1.1.7 Waste Management.....	34
1.1.8 Noise	34
1.1.9 Air Quality	35
1.2 Description of Socio-Economic and Cultural Environment	35
1.2.1 Current Use of Lands and Resources for Traditional Purposes.....	35
1.2.2 Land and Resource Use	37
1.2.3 Local Communities.....	38
1.2.4 Public Health and Safety.....	38
1.2.5 Navigation.....	39

1.2.6 Archaeological, Heritage and Historical Cultural Resources	39
2. Environmental Effects and Mitigation.....	41
2.1 Environmental Effects and Mitigation for the Biophysical Environment	41
2.1.1 Hydrology and Water Resources	41
2.1.2 Soils.....	42
2.1.3 Species at Risk	43
2.1.4 Fish and Fish Habitat	44
2.1.5 Wildlife and Wildlife Management and Vegetation.....	46
2.1.6 Waste Management.....	47
2.1.7 Noise	48
2.1.8 Air Quality	50
2.2 Environmental Effects and Mitigation for the Socio-Economic and Cultural Environment.....	50
2.2.1 Current Use of Lands and Resources for Traditional Purposes	50
2.2.2 Land and Resource Use	51
2.2.3 Public Health and Safety.....	52
2.2.4 Navigation.....	52
2.2.5 Archaeological, Heritage and Historical Cultural Resources	53
3. Cumulative Environmental Effects Assessment	54
3.1 Introduction.....	54
3.2 Methodology	54
3.3 Discussion	57
3.4 Conclusion	66
4. Effects of the Environment on the Project	67
4.1 Cluxewe River Bank Erosion.....	67
4.2 High Winds	67
4.3 High Precipitation	67
4.4 High Waves.....	67
4.5 Seismic Events	68
4.6 Conclusions.....	68
5. Environmental Effects of Accidents and Malfunctions.....	68
5.1 Hydrocarbon spills	69
5.2 Accidental Forest Fires	70
5.3 Concrete Spills.....	70
5.4 Discharge of Sediments to Marine Environment.....	71
5.5 Discharges from Ships	71
5.6 Grounding of Ships	71
5.7 Risk of accidents and malfunctions during decommissioning.....	72
5.8 Conclusions.....	72
6. Environmental Monitoring and Follow-up Program	73
Part C – Responsible Authorities Conclusions.....	81
1. General.....	82
2. Monitoring and Follow-up Program	82
3. Overall Conclusion	82
APPENDIX A	83
APPENDIX B	85
APPENDIX C	96

1.2 The Federal Review Process

An environmental assessment (EA) of a project is required under the CEA Act, if a federal authority will be required to exercise certain powers or perform certain duties or functions in respect of a project for the purposes of enabling the project to be carried out, in whole or in part.

Transport Canada, DFO and INAC will be required to exercise the following powers or perform the following duties or functions with respect to the Project:

- the proposed ship loading facility will require a formal approval by Transport Canada pursuant to paragraph 5(1)(a) of the *Navigable Waters Protection Act*;
- any disturbance to fish habitat from construction of the ship loading facility will require formal approval from the Department of Fisheries and Oceans under ss. 35(2) of the *Fisheries Act*; and,
- a federal funding request under the Major Business Projects Program to Indian and Northern Affairs Canada (INAC) from the 'Namgis First Nation.

By triggering the CEA Act, Transport Canada, DFO and INAC became responsible authorities thus requiring them to undertake an environmental assessment of the Project. A comprehensive study under the CEA Act is required when a proposed project meets at least one of the requirements in the Comprehensive Study List Regulation. In this case, the Project meets two sections of the regulation because it proposes to construct, decommission or abandon both:

- a stone quarry or gravel or sand pit with a production capacity of 1 000 000 t/a or more (s.18(i)); and,
- a marine terminal designed to handle vessels larger than 25 000 DWT unless the terminal is located on lands that are routinely and have been historically used as a marine terminal or that are designated for such use in a land-use plan that has been the subject of public consultation (s.28(c)).

The comprehensive study process requires public consultation with respect to the proposed scope of project for the purpose of the EA, the factors proposed to be considered, the proposed scope of those factors, and the ability of the comprehensive study process to address the issues relating to the project. To accomplish this, responsible authorities prepare a "project scoping document" that is made available to the public for review and comment. Following public consultation, responsible authorities prepare a report and recommendation, which is submitted to the federal Minister of the Environment. The Minister then determines whether the assessment will continue as a comprehensive study or whether the project will be referred to a mediator or a review panel.

If the assessment is continued as a comprehensive study, responsible authorities must ensure that a CSR is prepared. The CSR is submitted to the Canadian Environmental Assessment Agency, which administers a public comment period on the report. Upon completion of public review, the CSR and the comments filed in relation to it are forwarded to the Minister of the Environment for a decision.

For the Orca Sand and Gravel Project, Transport Canada and DFO, in consultation with the CEA Agency, prepared the Project scoping document, and advertised its availability for public review. A 21 day public review period ended on October 20, 2004. The ensuing report to the Minister of the Environment led to confirmation, on January 13, 2005, that the environmental assessment under the CEA Act would continue as a comprehensive study. Indian and Northern Affairs declared itself a responsible authority on April 7, 2005.

1.3 The Provincial Review Process

On September 30, 2003, the B.C. Environmental Assessment Office (BCEAO) issued an order under section 10(1)(c) of the British Columbia *Environmental Assessment Act* (BCEA Act), designating the Project as reviewable under the BCEA Act, and requiring the Proponent to obtain an environmental assessment certificate before proceeding with the Project.

On November 24, 2004, the BCEAO issued an order under section 11 of the BCEA Act outlining the scope, procedures and methods to be applied in the pre-Application and Application review stages of the BCEA Act assessment.

Terms of Reference for the Application were developed by the Proponent, with input from the BCEAO, federal and provincial agencies, local governments and First Nations. These Terms of Reference were approved by the BCEAO in November 2004 as the information required under section 16(2) of the BCEA Act. Federal agencies provided approval-in-principle only at that time, pending the outcome of a public review of the proposed scope of the review, as required under the CEA Act and final confirmation by the federal Minister of the Environment of the appropriate level of review.

In December 2004, the Proponent submitted an Application to the BCEAO. The Application was screened against the Terms of Reference, and accepted by the BCEAO with minor revisions on January 17, 2005.

1.4 The Federal/Provincial Cooperation Agreement

The Canada-British Columbia Agreement for Environmental Assessment Cooperation (2004) provides for a coordinated environmental assessment process to avoid uncertainty and duplication where a project is subject to review under both the BCEA Act and the CEA Act.