SCIENCE RESPONSE TO INFORMATION REQUESTS SUBMITTED TO THE ENBRIDGE PIPELINE PROJECT ENVIRONMENTAL IMPACT ASSESSMENT HEARINGS RESPECTING SPILL MODELING

Context

Fisheries and Oceans Canada's (DFO) Environmental Assessment and Major Projects Division (EAMP), Pacific Region, requested that DFO Science, Pacific Region, on May 15, 2012, provide information regarding specific Information Requests (IRs) submitted to the Enbridge Review Panel that DFO Science has the expertise to evaluate. As the IRs for which Science advice was requested cover a range of issues and scientific disciplines, separate Science Responses have been developed for each category of IRs, and in some cases specific IRs. In addition to science related questions, some IRs included elements that were questions pertaining to DFO policy, management or legal information. This Science Response addresses the scientific elements of the following questions:

- Why did DFO make additional requests with regards to the Proponent's oil spill modeling? What specific concerns does DFO have about the spill modeling that the Proponent has undertaken and/or about the Proponent's analysis of the overall risk of an oil spill? [Volume 7, sections 98 and 99; NGP Response to Federal Government IR No.2, sections 2.73-2.76]

This Science Response report is from the Fisheries and Oceans Canada, Canadian Science Advisory Secretariat, Regional Science Special Response Process (SSRP) of May 29th, 2012 on the Science advice in response to information requests submitted by Intervenors to the Enbridge Northern Gateway pipeline project environmental assessment Panel Review Process. Additional publications from this process will be posted as they become available on the Fisheries and Oceans Canada Science Advisory Schedule at www.dfo-mpo.gc.ca/csas-sccs/index-eng.htm.

Background

The Enbridge Northern Gateway Project proposes to ship dilute bitumen from Kitimat, British Columbia to markets in China and California with tankers of the class Very Large Crude Carriers (VLCC) (Vol. 1, B1-2, Enbridge Northern Gateway Project Section 52 Application). The tanker route from Kitimat through confined waterways in British Columbia and then into open waters of Hecate Strait, Dixon Entrance and Queen Charlotte Sound in British Columbia are illustrated in Figure 1. For assessment purposes Enbridge Northern Gateway defines two areas, the Confined Channel Assessment Area (CCAA) (Figure 2) and the Open Water Assessment Area (OWA) which is BC waters to the territorial sea limit (Figure 1). Incoming ships will deliver cargoes of condensate. Enbridge Northern Gateway estimate 71 condensate and 149 oil tankers call in at the Kitimat terminal for a total of 440 transits per year (Vol. 8C, B3-37, Enbridge Northern Gateway Project Section 52 Application). A marine terminal will be constructed near Kitimat with two tanker berths and one utility berth (Vol. 1, B1-2, Enbridge Northern Gateway Project Section 52 Application). The Project Effected Assessment Area (PEAA) that will be associated with the terminal construction is illustrated in Figure 3.

Two IR submissions were made to the Joint Review Panel (JRP) by DFO. Enbridge Northern Gateway provided responses to requests for information in the IRs. Since then Intervenor review of the Environmental Assessment documents prepared by the proponent (Enbridge Northern Gateway) and of the IRs and the responses by the proponent has resulted in a series of further questions to DFO by Intervenors.

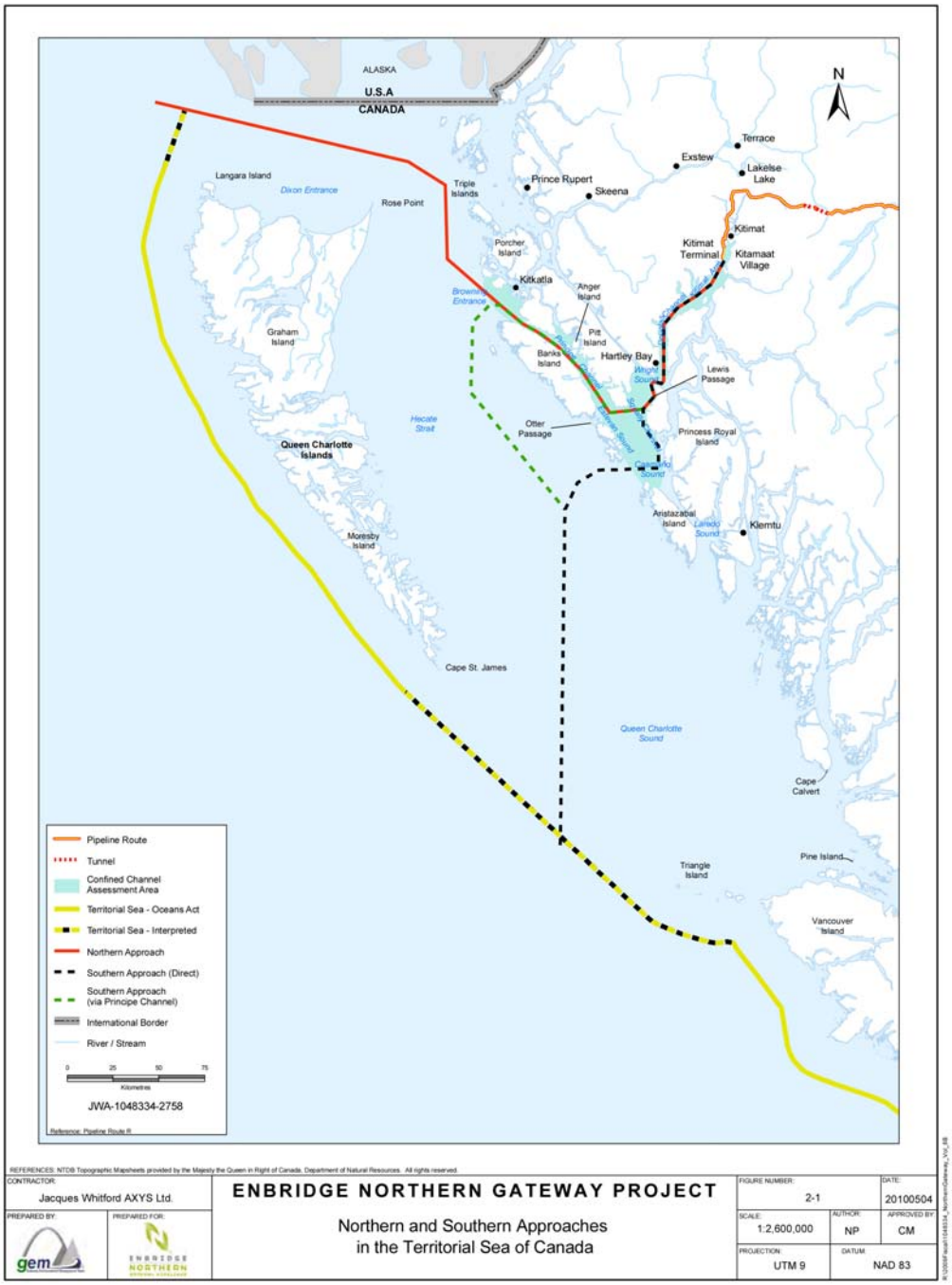

Figure 1. Map illustrating the proposed tanker routes through the Confined Channel and Open Water Assessment Areas (CCAA and OWA). The OWA extends to the territorial sea boundary (from Volume B9-42 Enbridge Northern Gateway Project).

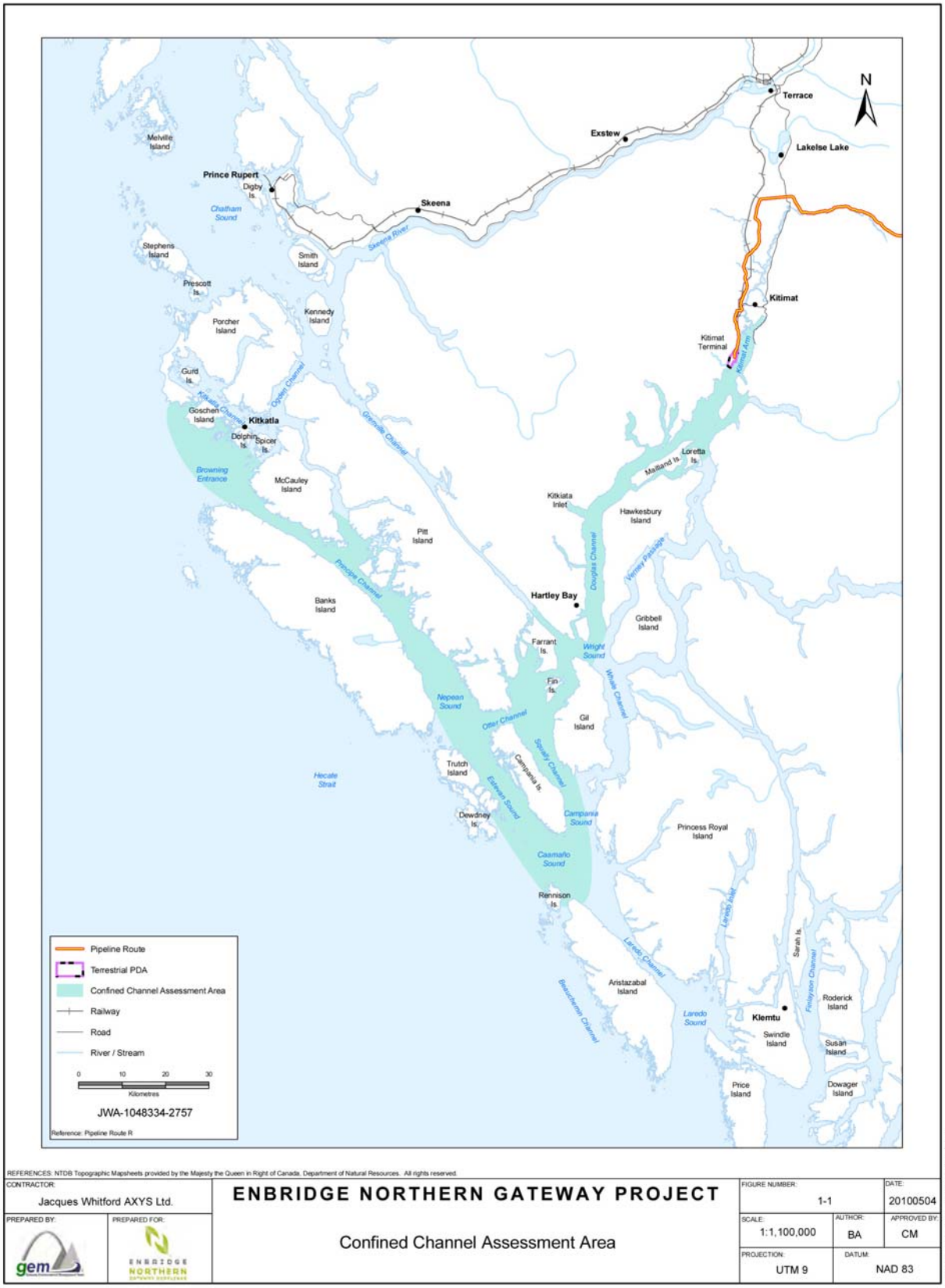

Figure 2. Map illustrating the location and extent of the Confined Channel Assessment Area (CCAA) (from Volume 8B Enbridge Northern Gateway Project Section 52 Application).

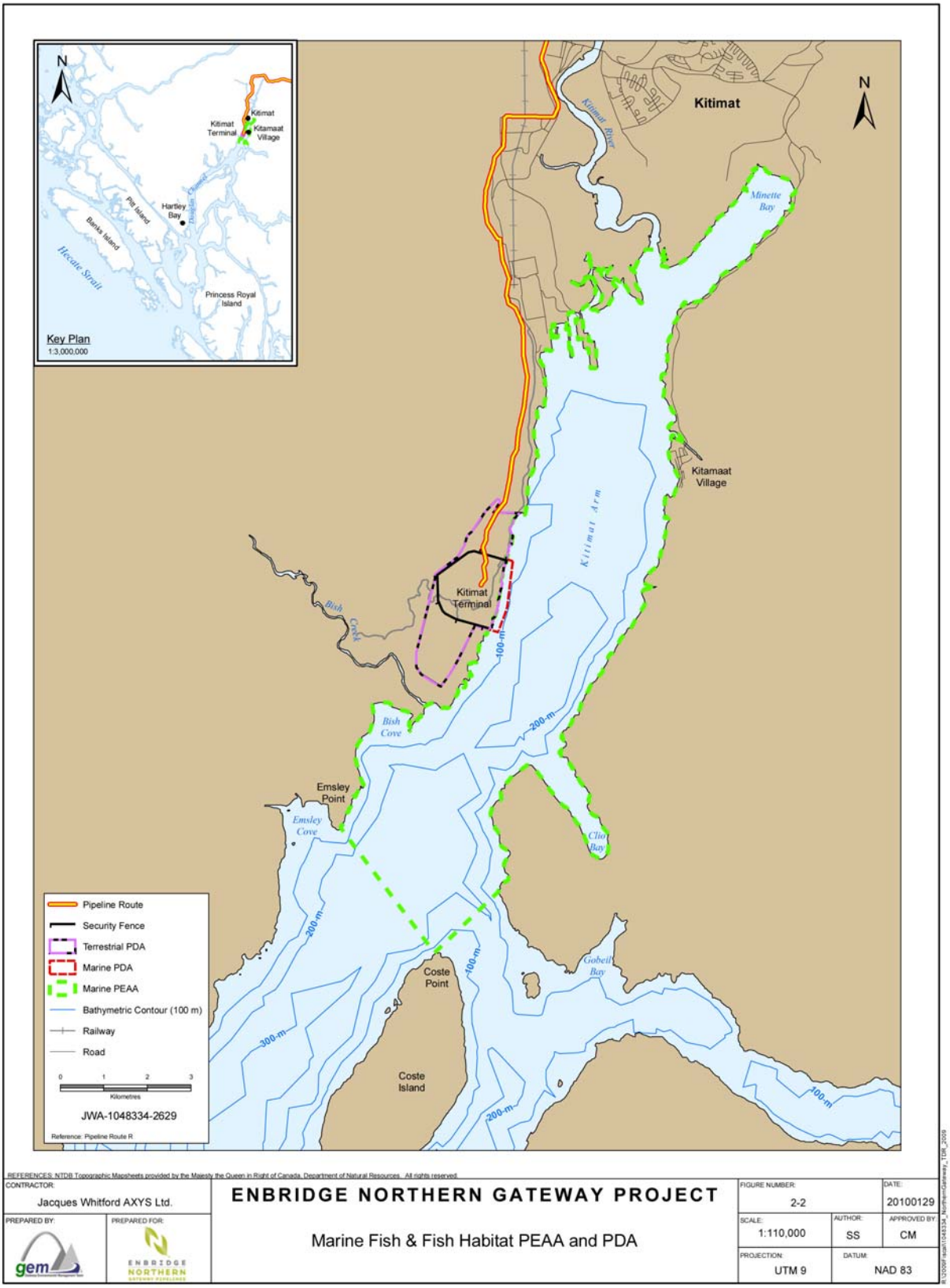

Figure 3. Map illustrating the location and extent of Project Effect Assessment Area (PEAA). (from Enbridge Northern Gateway Project Technical Data Report, Marine Fish and Fish Habitat 2010).

Analysis and Responses

With regard to assessing the potential impact of an accidental petroleum spill in the CCAA or the OWA, DFO Science had asked in IR 2.73 for a more comprehensive assessment of the spread of oil and condensate through Canadian waters from marine accidents along all of the shipping routes, rather than just for the six scenario sites presented in the EA. The assessment as presented does not consider the total geographic area that could be at risk from an oil spill from an incident involving a tanker. Such an assessment is relevant to DFO Science particularly as it relates to potential damage to marine biological resources. For example, would a spill reach Cook Bank in Queen Charlotte Sound, or Queen Charlotte Strait? Could a spill reach the west coast of Haida Gwaii, or reach Chatham Sound or west coast Vancouver Island? Such an assessment has not been made nor adequately addressed for DFO Science in the IR 2.73 or the 2.74 responses.

DFO Science requested more information and clarification regarding the Marine Transportation Quantitative Risk Analysis (QRA) (IR 2.75). The QRA is important as it provides the estimates, presented in Enbridge Northern Gateway's Environmental Assessment documents of the frequency with which catastrophic petroleum spills may occur as result of tanker transportation of petroleum associated with the Enbridge Northern Gateway Project. A more detailed and rigorous response to the questions asked by DFO Science would allow for a better assessment and understanding of the analysis and particularly of the conclusions with respect to catastrophic spill frequency.

Conclusions

DFO Science had requested more detail regarding the total geographic area that could be affected by an accidental spill from a tanker. DFO Science also requested more detail regarding the Quantitative Risk Analysis and the resulting conclusions about the likelihood of catastrophic spill.

Contributors

Name	Affiliation
Bill Crawford	DFO Science, Pacific Region
Linda Nichol	DFO Science, Pacific Region
Michael Foreman	DFO Science, Pacific Region
James Boutillier	DFO Science, Pacific Region
James Irvine	DFO Science, Pacific Region
Marilyn Joyce (Editor)	DFO Science, Pacific Region

Approved by

Robin Brown
Manager, Ocean Sciences Division
DFO Science, Pacific Region
Sidney, British Columbia

This Report is Available from the

Centre for Science Advice - Pacific Region
Fisheries and Oceans Canada
3190 Hammond Bay Road
Nanaimo, British Columbia
V9T 6N7

Telephone: 250-756-7208
E-Mail: CSAP@dfo-mpo.gc.ca
Internet address: www.dfo-mpo.gc.ca/csas-sccs/

ISSN 1919-3750 (Print)
ISSN 1919-3769 (Online)

La version française est disponible à l'adresse ci-dessus.

Correct Citation for this Publication:

DFO. 2013. Science response to information requests submitted to the Enbridge pipeline project environmental impact assessment hearings respecting spill modelling. DFO Can. Sci. Advis. Sec. Sci. Resp. 2012/034.