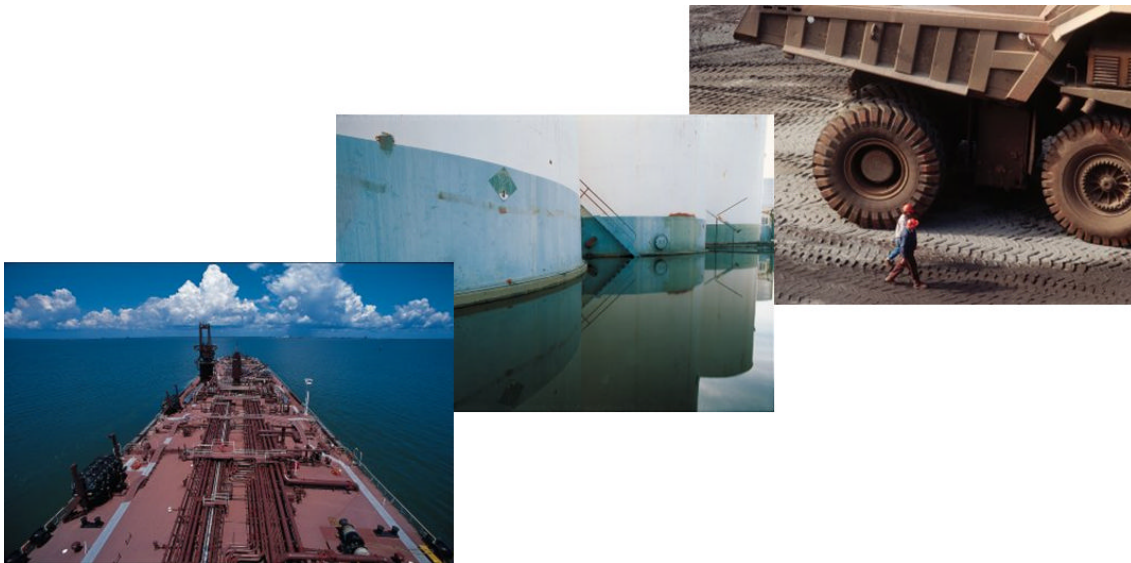


**Recommendations for a Sustainable Funding Mechanism to
Support BC Ministry of Environment Environmental
Emergency Program**

Contract # CC81608001

BC Ministry of Environment

**Final Report
March 31, 2008**



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List of Acronyms

CANUSPAC	Canada United States Pacific
CEPA	Canada Environmental Protection Act
CLC	1992 Civil Liability Convention
CSA	Canada Shipping Act
CWS	Canadian Wildlife Service
DEQ	Department of Environmental Quality
DFO	Department of Fisheries and Oceans
EEP	Environmental Emergency Program
EMA	British Columbia Environmental Management Act
EPA	Environmental Protection Agency (US)
ERRF	Environmental Response Revolving Fund (Hawaii)
FTE	Full time equivalent (Staffing)
FY	Fiscal Year
GRP	Geographic Response Plans
HSRAF	Hazardous Spill Prevention Fund
HNS	Hazardous and Noxious Substances
IOPC	1992 International Oil Pollution Convention
MoE	BC Ministry of Environment
MSRC	Marine Spill Response Corporation
OSLTF	Oil Spill Liability Trust Fund
OSPR	California Office of Spill Prevention and Response
OWCN	Oiled Wildlife Care Network
OWS	Oiled Wildlife Society (of BC)
PwC	PricewaterhouseCoopers LLP
RO	Response Organization
RP	Responsible Party
SMP	Spill Management Program (Oregon)
SPCA	Society for the Prevention of Cruelty to Animals
SSOPF	Ship-source Oil Pollution Fund (Canada)
US	United States
WCMRC/BCO	Western Canada Marine Response Corporation/ Burrard Clean
WCSS	Western Canada Spill Services Ltd

Executive Summary

The BC Ministry of Environment's (MoE) Environmental Emergency Program (EEP) is currently conducting a comprehensive review of its existing environmental emergency legislation and powers to examine ways to fund program activities related to hazardous materials spills. PricewaterhouseCoopers LLP (PwC) was engaged by the MoE to evaluate funding mechanisms in use in other jurisdictions and to identify current BC legislation and capacity for spill prevention, response and recovery for industry sectors that produce, store or transport substantive volumes of hydrocarbons and other hazardous materials in the province. PwC was also to identify and evaluate funding options that address apparent deficiencies within BC and provide options and recommendations for a sustainable funding mechanism to support the mandates and initiatives of the MoE EEP.

PwC considered that such a fund may need to support activities such as: the creation of a terrestrial spill response cooperative; the provision of grants to First Nations and Local Government for spill prevention, preparedness, response equipment and training; the creation of a British Columbia Spill Fund for use in response and recovery to spills; provision of additional resources for the Environmental Emergencies Program to meet its mandate; establishment and maintenance an oiled wildlife response capability and capacity for the province; support for research and development activities related to hazardous material spills; and undertaking additional hazardous material spills prevention and preparedness activities.

PwC examined funding mechanisms for spill prevention and response in a number of jurisdictions and found similarities in the funding mechanisms and the prevention and response programs that exist among these jurisdictions. The analysis of the current situation in BC found that funding for prevention and preparedness activities and organizations is generally lacking. There is no consistent and dedicated funding mechanism existing in BC to support activities related to the prevention and preparedness in the terrestrial environment. There are also no funding mechanisms, initiatives, or organizations involved in the prevention and preparedness for marine spills of non-persistent oils and hazardous materials.

PwC formulated six funding mechanisms that may be used alone or in combination to address the apparent or potential deficiencies in the current BC situation and to support the initiatives of the MoE EEP. The following funding mechanisms are presented:

- Introduction of an additional bulk oil levy on movement of oil in coastal waters;
- Application of a levy on terrestrial production and movement of hazardous materials, including hydrocarbons;
- Increasing enforcement of environmental law and expand the mandates of existing BC Sustainable Environment Fund;

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- Requiring facilities producing, storing and transporting oil or hazardous materials on land to pay membership or registration fees;
- Broadening the mandate of the Oil and Gas Commission's Orphan Site Reclamation fund to include a terrestrial hydrocarbon spill response fund to cover clean-up costs where responsible party is unknown, unwilling or unable to pay; and
- Broadening financial guarantee requirements in the BC EMA and Canada MLA.

Further consideration of these options should be contingent on assessments for the following:

- Adequacy of the current capacity to enforce existing environmental law;
- Capacity of existing response organizations;
- Determination of whether existing limits to liability and/or international, national spill response funds are adequate given the likely extent of damages should a spill occur; and,
- Ability of existing Federal and Provincial environmental funding mechanisms to pay for restoration and preparedness activities.

Where possible, we provide estimates on the range of potential annual revenues generated, predicted administrative costs, the human resource needs required to assess and collect funds on an annual basis and the potential sustainability of recommended options. The recommendations in this report consider the potential activities of the MoE EEP and are intended to address the identified deficiencies and where possible, the options minimize legislative changes, and involve existing funding programs and legislation.

Introduction

The MoE's Environmental Emergency Program is currently conducting a comprehensive review of its existing environmental emergency legislation and powers to examine ways to fund program activities related to hazardous materials spills. Government and industry must address public concern regarding potential risks to human health and the environment associated with the production, storage and transportation of hydrocarbons and other hazardous materials. Current legislation and funding mechanisms are in place to establish liability and provide coverage in cases when the responsible party is incapable of clean-up and recovery of a release of hazardous material into the environment. However, the current model is limited in that it may not provide sufficient incentives and resources for prevention, preparedness and remediation activities, in particular in the terrestrial environment. For example, rapid response capacity in more remote regions of the BC marine economic region may currently be insufficient.

Therefore, the Ministry of Environment is exploring funding models that would support the creation of a sustainable funding mechanism in BC to support the EEP's activities and initiatives related to prevention, preparedness, response, recovery and remediation of hazardous materials and hydrocarbons releases into the environment. PwC was engaged by the MoE to evaluate funding mechanisms in use in other jurisdictions and identify current BC legislation and capacity for spill prevention, response and recovery for industry sectors that produce, store or transport substantive volumes of hydrocarbons and other hazardous materials in the province. PwC was then to identify and evaluate funding options that address apparent deficiencies within BC and provide recommendations for a sustainable funding mechanism to support the mandates and initiatives of the MoE EEP.

This report has three main objectives. The first is to review available information on existing funding mechanisms utilized in other jurisdictions within Canada and the United States. The second is to characterize the extent of current funding and coverage available in BC for activities related to prevention, preparedness, response, recovery and remediation of hazardous materials and hydrocarbon spills. The third is to define and characterize options for the creation of a funding model to support a Provincial program to fund activities related to hazardous materials and hydrocarbon spills. Recommendations are provided based on an analysis of the potential applicability of identified options for supporting the following:

- A terrestrial spill response co-operative;
- Provision of additional resources for the EEP to meet its mandate;
- Provision of grants to First Nations and local governments for spill prevention, preparedness and response training and equipment;
- Supporting research and development activities related to hazardous spills; and

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- Establishing and maintaining response capability for oiled wildlife.

This project is part of a larger evaluation process in which increasingly detailed and comprehensive analyses will be applied as the list of available options is refined and reduced. This first phase focuses on characterizing a broad range of available options and providing recommendations based on an evaluation of general criteria. The desired outcome at this stage is the elimination from further consideration of those options that are not feasible or acceptable for BC. A more in-depth analysis of the short-listed options from the phase 1 recommendations will be completed at a later stage.

In this report, PwC first provides a review of funding mechanisms utilized in other jurisdictions. This is followed by a review of the current state of legislation and the extent of financial coverage and capacity for activities related to prevention, preparedness, response, recovery and remediation of hazardous materials and hydrocarbon spills in BC to identify deficiencies in the current funding mechanisms. The following section presents recommended options for a sustainable funding mechanism in BC. Detailed summary information for each section is provided in the appendices. Our analysis considers the applicability of existing legislation, and/or requirements for new legislation to invoke the recommendations and whether the options are within provincial jurisdictional authority to enact. Where possible, we also provide estimates on the range of potential annual revenues generated, predicted administrative costs, the human resource needs required to assess and collect funds on an annual basis and the potential sustainability of recommended options.

Review of Funding Mechanisms and Response Organizations in Other Jurisdictions

Methodology

PwC reviewed available information on existing funding mechanisms supporting activities to prevent, prepare for, respond to, recover from, and remediate spills of petroleum hydrocarbons and hazardous materials at the federal level for the United States and Canada; the states of Alaska, Washington, Oregon, California and Hawaii; and the Province of Ontario. In addition, we examined a number of industry supported non-profit response organizations (ROs) located in Canada (Western Canada Spill Services Ltd, Western Canada Marine Response Corporation/ Burrard Clean, and Oiled Wildlife Society of BC); Alaska (Alaska Clean Seas, Alaska Chadux Corp., Cook Inlet Spill Prevention and Response Inc, and SEAPRO); and Washington (Islands' Oil Spill Association, MSRC - Western Region, and Washington State Maritime Co-op). Our review considered information available from internet web sites, information reports provided by the MoE EEP, and information provided through interviews with the various program staff. Where possible, information from internet websites was corroborated by program staff.

For each funding mechanisms identified above, summaries are provided with the following information: location, applicable industries, sources of revenue, annual income and expenses (including administrative costs), supported activities and applicable legislation. This information is provided in Appendix A.

For each industry supported response organization identified above, summaries of activities, membership and administrative requirements are provided. This information is provided in Appendix B

Overview

Table 1 on the following page provides an overview summary of the various funding mechanisms utilized in the jurisdictions examined in this study. All jurisdictions reviewed utilize similar funding mechanisms which include: direct levies applied to the production, import, and export of hydrocarbon resources; civil penalties or fines assessed to violators; and membership and registration fees. Revenues generated are typically managed in government accounts or trusts. Generally, national and/or international funds are available to cover costs and expenses for spill clean-up and recovery where costs exceed the established liability of the responsible party (RP), or where the RP is unknown, unable or unwilling to pay. At the State or Provincial level, revenues generated by various funding mechanisms are typically distributed into two types of accounts or funds: i) a response and recovery account used to reimburse costs associated

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with clean-up and recovery from a major spill incident that are either not eligible, or above the limits of available international or national level funding; and, ii) a prevention and administration account used to support activities related to clean-up and recovery of minor spills and contaminated sites, and in some cases, prevention, preparedness and remediation activities. In the case of the latter, funds are either distributed into a designated government funding program, or distributed among various programs intended to carry out the mandate of the fund.

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Table 1. Summary of the Funding Mechanisms existing in pacific US states and Canada. (Figures are provided in local currency, unless otherwise specified).

Jurisdiction	Fund / Program	Funding Mechanisms	Purpose	Annual Revenues	Annual Expenses	Fund Balance	Notes
U.S.A	Oil Spill Liability Trust Fund (OSLTF)	<p>\$0.05 per barrel levy on oil produced or imported in the U.S.</p> <p>Investment Interest</p> <p>Civil Penalties</p> <p>Transfers from legacy pollution funds</p> <p>Cost Recovery</p>	<p>Emergency fund is used for removal and damage assessments associated with:</p> <ul style="list-style-type: none"> • Oil discharges from ships, • Discharges at industrial or onshore oil storage and production facilities. <p>Principle fund is used for:</p> <ul style="list-style-type: none"> • Claims • Appropriations to federal organizations 	<p>Forecast for FY2008¹</p> <p>Barrel Levy: \$350 million</p> <p>Cost Recovery: \$6 million</p> <p>Penalties: \$4.5 million</p> <p>Interest: \$42.9 million</p> <p>Transfers: \$0</p> <p>Total: \$403.4 million</p>	<p>Forecast for FY2008¹</p> <p>Emergency Fund: \$50 million</p> <p>Claims: \$87 million</p> <p>Appropriations to other gov't programs: \$73.7 million</p> <p>Total: \$228.71 million</p>	<p>Forecast for FY2008</p> <p>\$1 billion</p>	<p>Statutory limit is \$2.7 billion</p>

¹ Oil Spill Liability Trust Fund Forecast FY2007–FY2014. Available at: http://uscg.mil/hq/npfc/Documents/PDFs/OSLTF_Forecast.pdf

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Jurisdiction	Fund / Program	Funding Mechanisms	Purpose	Annual Revenues	Annual Expenses	Fund Balance	Notes
State of Alaska	Oil and Hazardous Substances Release Prevention and Response Fund	<p>Response Fund:</p> <ul style="list-style-type: none"> • \$0.01 per barrel levy on oil produced in the state of Alaska • Cost Recovery <p>Prevention Fund:</p> <ul style="list-style-type: none"> • \$0.04 per barrel levy on oil produced in the state of Alaska • Fines/ settlements • Penalties • Cost recovery • Interest earned on balance of Response and Prevention accounts 	<p>Response Fund is used to respond to oil or hazardous substance release, or a threat of a release declared a disaster.</p> <p>Prevention Fund is used to prevent and mitigate the effects of oil and hazardous substance releases and ensure their cleanup through government planning, preparedness and rapid response.</p>	<p>FY2007</p> <p>Response Fund²</p> <ul style="list-style-type: none"> • Barrel Levy: \$1.278 million • Gov't: \$0.036 million • Total: \$1.314 million <p>Prevention Fund³</p> <ul style="list-style-type: none"> • Barrel Levy: \$4.026 million • Appropriations to Gov't Programs: \$0.063 million • Total: \$4.090 million 	<p>FY2007</p> <p>Response Fund²</p> <ul style="list-style-type: none"> • Administration/ Personnel (5 FTE): \$0.422 million • Other: \$0.891 million • Total: \$1.314 million <p>Prevention Fund³</p> <ul style="list-style-type: none"> • Administration/ Personnel (36 FTE): \$3.030 million • Other: \$1.060 million • Total: \$4.090 million 	<p>FY2007</p> <p>Response Fund: \$44.1 million</p> <p>Prevention Fund (in 2005): \$9 million</p>	<p>Statutory limit on response fund is \$50 million</p> <p>In 2009 the Prevention levy will increase to \$0.06 per barrel.</p> <p>The Prevention fund does not have a statutory limit.</p>

² State of Alaska FY2009 Governor's Operating Budget. Component – Response Fund Administration. Available at: http://gov.state.ak.us/omb/09_omb/budget/DEC/comp2259.pdf.

³ State of Alaska FY2009 Governor's Operating Budget. Component – Prevention and Emergency Response. Available at: http://gov.state.ak.us/omb/09_omb/budget/DEC/comp2064.pdf.

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Jurisdiction	Fund / Program	Funding Mechanisms	Purpose	Annual Revenues	Annual Expenses	Fund Balance	Notes
State of Washington	Spill Prevention, Preparedness and Response Program	<p>Response Account:</p> <ul style="list-style-type: none"> • \$0.01 per barrel levied upon receipt of oil at the marine terminal <p>Prevention Account:</p> <ul style="list-style-type: none"> • \$0.04 Administration Tax, levied on receipt of crude oil at marine terminals • \$0.05 Response Service Tax, levied against transfer of refined oil near water. <p>Vessel Response account:</p> <ul style="list-style-type: none"> • Vehicle certification fees <p>State Toxics Control Account:</p> <ul style="list-style-type: none"> • Hazardous Substances Tax • Penalties <p>Coastal Protection Fund:</p> <ul style="list-style-type: none"> • Penalties • marine gas tax 	<p>Response Account is used to respond to a spill of crude oil</p> <p>Prevention Account is used to fund the Dept. Ecology activities, contingency tug, rescue tug, and council activities</p> <p>Vessel Response Account funds a contingency tug, and a rescue tug</p> <p>State Toxics Control supports Hazardous Material Spill preparedness and response.</p> <p>Coastal Protection Fund funds activities for restoration of Natural resources damaged by oil spill</p> <p>General Fund is available for drug lab clean up and Oil spill task force activities</p>	<p>FY2007</p> <p>Spill Prevention, Preparedness and Response Program Budget⁴</p> <ul style="list-style-type: none"> • Vessel response Account: \$1.438 million • Oil Spill Prevention Account: \$10.715 million • Oil Spill Response Account: \$7.078 million • State Toxics Control Account: \$7.731 million • Coastal Protection Fund: \$1.776 million • General Fund-Private/Local (BC & Pac. States Oil Spill Task Force): \$337,870 • General Fund-State: \$30,000 • Total: \$29.107 million 	<p>FY2007</p> <p>Spill Prevention, Preparedness and Response Program Expenses⁴</p> <ul style="list-style-type: none"> • Administration (77.7 FTE staff): \$657,784 • Programs and projects: \$220,000 • Appropriations: \$14.449 million • Total: \$22.676 million <p>Proposed additional needs of the Oil Spill Advisory Council: \$7.349 million</p>	<p>FY2007</p> <p>Response Account: \$9 million⁴</p>	<p>Capability to rescue and rehabilitate oiled wildlife is very limited⁴.</p> <p>As a result of expenditures exceeding revenues, beginning in the fall of 2009 projecting a budget shortfall in the Oil Spill Prevention Account</p>

⁴ Spill Prevention, Preparedness & Response Program Overview. 2007. Available at: http://www.ecy.wa.gov/programs/spills/other/overbook_spills.pdf

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Jurisdiction	Fund / Program	Funding Mechanisms	Purpose	Annual Revenues	Annual Expenses	Fund Balance	Notes
State of Oregon	Dept. of Environmental Quality Spill Management Program (SMP)	<p>Marine Spill Prevention Fund</p> <ul style="list-style-type: none"> • \$42/trip levy on cargo vessels and tank barges • \$836/trip by tank vessels • \$4,500 annual fee applied to petroleum handling facilities • Daily fee for dredges • Annual fee for facilities and pipelines receiving fuel from tank vessels and barges <p>Hazardous Substance Remedial Action Fund</p> <ul style="list-style-type: none"> • \$30 per tonne fee on disposal of waste (with graduated reduction for large quantities to \$2.50/tonne for over 25,000 tonnes of waste) • Cost recovery • Interest on balance 	<p>Marine Spill Prevention Fund</p> <ul style="list-style-type: none"> • prevention and response to oil spills in Oregon waterways (rivers) <p>Hazardous Substance Remedial Action Fund</p> <ul style="list-style-type: none"> • Investigation, management and remediation of contaminated sites <p>Drug Lab Forfeiture Fund</p> <ul style="list-style-type: none"> • Removal and disposal of chemicals and wastes associated with illegal drug manufacturing <p>Highway Spill Fund</p> <ul style="list-style-type: none"> • Highway-related petroleum spill response activities. 	<p>FY2007⁵</p> <p>SMP Revenue by Source:</p> <ul style="list-style-type: none"> • Marine Spill Prevention Fund \$301,186 • Hazardous Substance Remedial Action Fund \$616,871 (fees), \$41,687 (cost recovery) • Drug Lab Forfeiture Fund \$19,547 • Highway Spill Fund \$116,516 (cost recovery), \$30,881 (petroleum load fee) • EPA Core Grant: \$5000 • General Revenue, \$0 	<p>FY2007⁵</p> <p>Spill Management Program</p> <ul style="list-style-type: none"> • Annual budget \$1.24 million • Actual expenditures \$1.187 million • 4-5 FTE staff dedicated to emergency response • 3 additional staff provide back-up and advice • 12 staff on call <p>Marine Spill Prevention Fund</p> <ul style="list-style-type: none"> • 1 FTE staff to review contingency plans and coordinate drills and exercises 	<p>FY2007</p> <p>Marine Spill Prevention Fund: \$2,700</p> <p>Hazardous Substance Remedial Action Fund: \$3.440 million</p> <p>Drug Lab Forfeiture Fund: \$51,000</p> <p>Highway Spill Fund: \$100,400</p>	<p>Drug Lab Forfeiture Fund, Highway Spill Fund, Marine Spill Prevention Fund are dedicated funds and can only be spent on specific activities defined in Oregon Revised Statutes.</p>

⁵ Jeff Christensen, Personal Communication

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Jurisdiction	Fund / Program	Funding Mechanisms	Purpose	Annual Revenues	Annual Expenses	Fund Balance	Notes
		Drug Lab Forfeiture Fund • Forfeited asset sales • Cost recovery Highway Spill Fund • \$4.75 per load fee on petroleum withdrawn from a bulk petroleum facility • Cost recovery					

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Jurisdiction	Fund / Program	Funding Mechanisms	Purpose	Annual Revenues	Annual Expenses	Fund Balance	Notes
		EPA Core Grant					
State of California	California Office of Spill Prevention and Response <ul style="list-style-type: none"> • Enforcement Program • Inland Spills Program • Oiled Wildlife Care Network (OWCN) • Natural Resource Damage Assessment Unit • Scientific Study and Evaluation Program 	Oil Spill Response Trust Fund <ul style="list-style-type: none"> • \$0.25 per barrel levy on imported/ exported oil Oil Spill Prevention and Administration Fund <ul style="list-style-type: none"> • \$0.04 per barrel levy on delivery or transport of oil • Cost Recovery • Civil Penalties • Fines and Settlements 	Oil Spill Response Trust Fund is available for response, abatement, containment and rehabilitation from Oil spill where responsible party is unknown or unwilling to pay, and costs are ineligible under the Federal program. Oil Spill Prevention and Administration Fund supports administration and activities of the OSPR	FY2008 ⁶ Oil Spill Response Trust Fund: <ul style="list-style-type: none"> • Levy not in effect • Interest accrued is credited to the OWCN Oil Spill Prevention and Administration Fund: \$25.469 million Fish and Wildlife Pollution Account: \$2.629 million Marine Invasive Species Control Fund: \$1.299 million Cost recovery and settlements: \$3.877 million Other: \$1.792 million Total: \$35.066 million	FY2008 ⁶ Office of Spill Prevention and Response <ul style="list-style-type: none"> • Operating Budget: \$35.066 million • 252 FTE staff positions 	FY2008 ⁶ Oil Spill Response Trust Fund: <ul style="list-style-type: none"> • \$100 million Oil Spill Prevention and Administration Fund: <ul style="list-style-type: none"> • \$17.7 million 	Oil Spill Response Trust Fund Levy applies when the balance of the trust fund is less than 95% of the statutory target balance (\$54.876 million) Balance will increase to \$100 million through a treasury loan to bring the amount in line with the balance mandated by law The trust fund has not been used to pay for a significant clean up since 2000 ¹

⁶ California State. The Office of Spill Prevention and Response: Funding and Responsibilities. 2007. Available at http://www.lao.ca.gov/handouts/resources/2007/OSPR_111907.pdf

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State of Hawaii	Environmental Response Revolving Fund (ERRF)	<p>Environmental response tax</p> <ul style="list-style-type: none"> • \$0.05 per barrel levy on imported crude oil <p>Fines and penalties for environmental violations</p> <p>Registration fees for facilities producing & storing hazardous materials</p> <ul style="list-style-type: none"> • \$100 annual fee <p>Investment Interest</p> <p>Grants</p> <p>Legislative appropriations</p> <p>Costs recovered from response actions</p>	<p>ERRF provides response capability, personnel, and equipment for the prevention, preparedness, and response to hazardous substance releases, or risks of releases</p> <p>ERRF funds support a variety of other activities including oil spill planning, education, research, and training; a used oil-recycling programs; and a number of environmental protection and natural resource protection programs</p>	<p>FY2007^{7,8}</p> <p>Environmental Response Tax \$1.741 million</p> <p>Interest: \$269,404</p> <p>Registration fees: \$98,250</p> <p>Fines and penalties: \$1.636 million</p> <p>Legislative appropriations: \$66,464</p> <p>Cost recovery: \$25,217</p> <p>Total: \$3.844 million</p>	<p>FY2007⁸</p> <p>ERRF</p> <ul style="list-style-type: none"> • 2 FTE staff for administrative duties <p>Hazardous Evaluation and Emergency Response Office</p> <ul style="list-style-type: none"> • \$3.210 million from ERRF • ERRF funds 18 FTE staff positions <p>Environmental Management division: \$54,991 from ERRF</p> <p>Clean Water Branch: \$275,573 from ERRF</p> <p>Safe Drinking Water Branch: \$754,394 from ERRF</p> <p>Solid and Hazardous Waste Branch: \$621,911 from ERRF</p> <p>Total ERRF Budget: \$4.915 million</p> <p>Actual ERRF Expenditure: \$3.240 million</p>	<p>FY2008⁷</p> <p>Approximately \$7 million</p>	<p>Statutory limit is \$20 million at which point the levy is suspended until the fund drops below \$3 million⁷.</p>
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⁷ Clarence Martin, Hawaii Department of Health. Personal communication.

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Canada	Ship-source Oil Pollution Fund (SSOPF)	<p>Transfers from legacy funds</p> <p>\$0.06 per barrel levy on contributing oil imported into, or shipped from a place in Canada, in bulk as cargo on a ship</p> <p>Interest credited on account</p> <p>Cost recovery</p>	<p>SSOPF pays claims for costs and expenses incurred through the prevention, response, recovery and remediation of oil pollution damage</p> <p>Covers claims where funding available from CLC and IOPC are insufficient or ineligible (i.e., mystery spills, non-persistent oil, inland spills)</p>	<p>FY2006⁹</p> <p>Interest: \$12.309 million</p> <p>Costs recovered: \$6,800</p>	<p>FY2006⁹</p> <p>Administration: \$477,503</p> <p>Contributions to IOPC (variable): \$0</p>	<p>FY2006⁹</p> <p>\$350.843 million</p>	<p>No levy has been charged since 1976.</p> <p>Re-imposition of the Levy is at the discretion of the Minister of Transport.</p> <p>There was no payment to the IOPC in 2005/06. Contributions in 2004/05 were \$3.448 million</p>
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⁸ Report to the Twenty-fifth Legislature State of Hawai'i. Environmental Response and Hawai'i Emergency Planning and Community Right to Know. FY 2007. Dec 2007. Available at: <http://hawaii.gov/health/environmental/hazard/pdf/rpt2008.pdf>

⁹ Government of Canada. Sept. 9, 2006. Office of the Administrator of the Ship-source Oil Pollution Fund. Accessed February 18, 2008. Available at: <http://www.ssopfund.gc.ca/english/about.asp>

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Canada/ Ontario	Bill 133 - Community Environment Fund	<p>Cost Recovery</p> <ul style="list-style-type: none"> • Cost recovery incurred by Province or municipalities in responding to a spill. • Municipalities have the authority to issue orders (rather than through court action) <p>Environmental Penalties</p> <ul style="list-style-type: none"> • up to \$100,000 per day for companies responsible for spills. <p>Fines</p> <ul style="list-style-type: none"> • Court assessed. 	<p>All monies recovery through penalties, fines and settlements are deposited in the Community Environment Fund</p> <p>Funds are made available to communities to support environmental remediation and restoration projects and other related activities that address damage caused by spills and pollution</p>	Currently, no penalties have been assessed and the fund is empty ¹⁰	n/a	\$0	Disbursements from this fund are not expected until 2008/09.
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¹⁰ John Steele, Ontario Ministry of Environment. Personal communication.

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Table 2. Summary of the industry supported response organizations existing in Washington, Alaska and Western Canada.
(Figures are provided in local currency, unless otherwise specified).

Jurisdiction	Response Organization	Funding Source	Purpose	Annual Revenues	Annual Expenses	Personnel	Notes
Western Canada	Western Canada Marine Response Corporation/ Burrard Clean (WCMRC/BCO)	<p>\$0.09 per barrel (\$0.67 per tonne) levy on bulk oil</p> <p>Annual Membership fees</p> <ul style="list-style-type: none"> • \$450 vessels ≥ 150,000 tonnes transporting fuel and vessels >400,000 tonnes. 	<p>WCMRC created to provide oil spill response capability in BC's navigable waters</p> <p>Burrard Clean:</p> <ul style="list-style-type: none"> • non-profit co-operative to provide a collective capability to respond to spills in the Burrard inlet <p>Member and sponsor of Oiled Wildlife Society of BC</p>	<p>FY2006¹¹</p> <p>Bulk Oil Levy: \$3.120 million</p> <p>Membership fees: \$669,807</p> <p>Other Revenue (sale of sorbents, spill revenue, interest, training activities, and deferred revenue): \$195,465</p>	<p>FY2006¹¹</p> <p>Administration: \$991,107</p> <p>Logistics and marketing: \$205,924</p> <p>Operations expenses: \$1.411 million</p> <p>equipment amortization: \$538,856</p> <p>Interest on debt: \$218,306</p> <p>Other: \$17,749</p>	<p>Volunteer board of directors¹²</p> <p>President/general manager (part time position)</p> <p>15 full time staff positions</p> <p>7 part time positions</p> <p>31 contract advisors</p>	<p>WCMR/BCO spends approximately \$400,000 per year on preparedness training and exercises. Total staffing expenses range between \$1.5 to 2.0 million annually¹²</p>

¹¹ Burrard Clean Operations. <http://www.burrardclean.com/>

¹² Kevin Gardiner, Burrard Clean Operations. Personal Communication

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Jurisdiction	Response Organization	Funding Source	Purpose	Annual Revenues	Annual Expenses	Personnel	Notes
Western Canada	Western Canadian Spill Services Ltd. (WCSS)	Membership fees \$315 Site fees based on capacity of each company (i.e., number of wells, and length of pipeline)	Voluntary spill preparedness organization of the upstream petroleum industry in N.E. British Columbia, Alberta, and Saskatchewan Provides access to oil spill contingency plans, initial spill response equipment and access to regional and specialty spill response equipment.	FY 2006 ¹³ Fees: \$1.6 million All fees collected are re-invested in either training or capital asset purchases.	Fixed annual administration budget (undisclosed amount).	No employees. Administered by Enform through a management agreement with the WCSS (3.3 FTE). Contractors provide maintenance duties on spill response equipment at various response centers within WCSS boundaries.	Volunteer Board of Directors, Executive Sub-Committee and at the Oil Spill Cooperative level.
Alaska	Alaska Clean Seas	Membership fees Annual renewal fees Daily development fees Rig day fees for exploration members Production fees	Non-profit, incorporated oil spill response cooperative Members are oil and pipeline companies	n/a	FY2008 ¹⁴ Labor and benefits: \$7 million	74 full time employees	115 qualified response personnel, supplied by operating companies under a mutual aid agreement available to participating member companies
Alaska	Alaska Chadux Corp.	Funded through industry members	Member-funded, not-for-profit oil spill response organization	n/a	Wages/payroll, taxes and benefits: approx. \$1 million ¹⁵	10 employees	

¹³ Alan B. McFadyen, Enform/ WCSS. Personal communication.

¹⁴ Ron Morris, President and General Manager, Alaska, Clean Seas. Personal Communication

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Jurisdiction	Response Organization	Funding Source	Purpose	Annual Revenues	Annual Expenses	Personnel	Notes
Alaska	Cook Inlet Spill Prevention & Response Inc	Funded through industry members	Oil spill response & contingency planning	n/a	Annual Budget: ¹⁶ \$1.195 million	17 full time employees 1 full time contract person 1 part-time contract person	
Alaska	Southeast Alaska Petroleum Resource Organization	Funded through industry members	Non-profit corporation providing oil spill response resources to member companies	n/a	n/a	n/a	Wildlife Response Team
Washington	Islands' Oil Spill Association	Funded through donations and memberships only	Community-based, nonprofit organization providing first response for oil spills in the San Juan Islands, shoreline protection, wildlife rescue and training for containment and oiled wildlife responders			354 community volunteers	

¹⁵ Bob Heavilin, General Manager Chadux, Personal Communication.

¹⁶ Doug Lentsch, Cook Inlet Spill Prevention & Response Inc, Personal communication.

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Jurisdiction	Response Organization	Funding Source	Purpose	Annual Revenues	Annual Expenses	Personnel	Notes
Pacific States	Marine Spill Response Corporation/ Marine Preservation Association	Funded by member companies (petroleum exploration and production, refining and marketing, transportation and shipping)	Independent, non-profit, national spill response company	n/a	n/a	n/a	To become a customer of the MSRC (i.e., entitled to cite MSRC in response plans), a company must first become a member of the Marine Preservation Association
Washington	Washington State Maritime Co-op	n/a	Non-profit corporation that provides oil spill contingency plan coverage and emergency response systems to vessels in Washington waters	n/a	n/a	n/a	

Funding and Response Capacity in British Columbia

Restrictions in eligibility for international and federal spill funds require the differentiation of hydrocarbons into persistent and non-persistent oils. The International Fund Convention definition¹⁷ describes persistent oils as including most crude oils, emulsion fuel and some finished products. Non-persistent oils are volatile and include motor gasoline and light fuel oil. Hazardous materials include industrial chemicals and dangerous goods as defined in Schedule 1 in the BC Transport of Dangerous Goods Act.

Three scenarios have been considered for this report, including spills involving: i) terrestrial production, storage and transportation of persistent oils; ii) marine transportation of persistent oils; and, iii) marine transportation of hazardous materials and non-persistent oils. For each sector, the applicable legislation is identified, as well as the existence of funding mechanisms, and the existence of response organizations or programs to support activities related to prevention and preparedness, response and recovery, remediation of oil or hazardous materials spills. Detailed information is provided in tables located in Appendix C.

Terrestrial production, storage and transportation of hydrocarbons and hazardous materials

Both federal (CEPA, Canada Oil and Gas Operations Act) and provincial (BC EMA, BC Transport of Dangerous Goods Act) legislation require companies that produce, store or transport hazardous materials and hydrocarbons on land to develop prevention and preparedness, and emergency response plans. This legislation also requires that companies take measures to prevent a spill. Should a spill occur, the legislation requires companies to clean up the spill and establishes liability for the costs and expenses accrued by the government associated with response, recovery and remediation from an oil or hazardous material release. Current legislation does not establish liability for longer-term recovery or restoration of natural resources damaged or destroyed by a hazardous material release.

Existing funding mechanisms in BC include the BC Ministry of Environment's Sustainable Environment Fund and the BC Oil and Gas Commission's Orphaned Site Reclamation fund. The Sustainable Environment Fund is funded through consumer levies on batteries, tires and disposable diapers, as well as fees, permits and penalties collected through the EMA. Information on the mandate of this fund is not readily available and should be further clarified. A report on the 2005 BC MoE Budget notes that mandated initiatives and activities of the fund include responses to high-risk

¹⁷ Anderson, C. 2001. Persistent vs. non-persistent oils: what you need to know. Available at: http://www.itopf.com/_assets/documents/persistent.pdf

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environmental emergencies and cleanup of contaminated sites¹⁸, and in FY2006, \$35.7 million was appropriated from the fund to support the Environmental Protection Division of the MoE¹⁸. The BC Oil and Gas Commission's Orphaned Site Reclamation fund has sustained funding through a levy on oil and gas production. The fund is available to cover costs associated with the reclamation of orphaned wells, pipelines and oil facilities. The fund will also pay claims by landowners for unpaid lease fees.

Response organizations in BC include the Western Canada Spill Services Ltd. (WCSS) and private contractors (e.g., CEDA, a private contractor available for response, clean-up and recovery of spills of hazardous materials and hydrocarbons on land). Companies involved in the up-stream oil and gas sector in BC pay voluntary membership fees to the WCSS. The WCSS provides response capability (equipment, response planning) to member companies in Northeastern BC, Alberta and Northern Saskatchewan. The WCSS does not respond directly to spills and their coverage does not extend to the Southern and Coastal regions of BC. WCSS does not have any employees and is administered by Enform (training, certification and health and safety services arm of the upstream petroleum industry) through a management agreement with the WCSS¹⁹. There is currently no other industry or government supported organization involved in preparedness and prevention activities related to inland hazardous materials and hydrocarbons spills in areas outside of the geographic coverage of the WCSS.

There is no consistent and dedicated funding mechanism in BC supporting activities related to prevention and preparedness for hazardous materials and hydrocarbons spills on land. Revenue generated through the existing MoE Sustainable Environment Fund may be insufficient to support its broad mandate, and would possibly limit the ability to cover costs associated with response and recovery in the event a major incident involving a spill of hazardous materials and hydrocarbons on land. There is also currently a significant gap in both the legislation and funding available for costs associated with longer-term recovery or restoration of natural resources damaged or destroyed by spills of hazardous materials and hydrocarbons on land.

Marine Transportation of Persistent Oils

Federal legislation prohibits the discharge of oil into marine environments and requires vessels and oil handling facilities to establish an arrangement with a certified response organization capable of responding to a spill equivalent to the volume of oil carried by the vessel. The legislation also requires vessels prepare prevention and response plans and that they demonstrate financial responsibility by providing a certificate of insurance or other security. The legislation establishes the owner of the ship as liable for costs and

¹⁸ BC Ministry of Environment. 2005 Budget. Available at:
http://www.bcbudget.gov.bc.ca/2005_sept_update/est/21_Environment.pdf

¹⁹ Alan Macfayded. Enform/ WCSS. Personal communication.

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expenses associated with response, recovery and remediation from a spill. The BC Ministry of Environment is responsible for prevention and response management for a spill and the BC Marine Spill Response Plan specifies response actions based on widely used International Incident Command systems should a spill occur.

Costs associated with the response and recovery of a marine oil spill are the responsibility of the vessel or facility owner. International funding sources (CLC and IOPC) are available to cover costs of spills of persistent oils where the responsible party is unable to pay, or costs exceed the maximum established liability. If costs should exceed CLC and IOPC limits, or the responsible party is unknown, clean-up costs, expenses, and other losses can be recovered through Canada's Ship Source Oil Pollution Fund. The total potential coverage for a spill of persistent oil in coastal waters of BC, and where the responsible party is known and able to pay is \$617 million.

The CSA enables certified response organizations to charge levies or fees. The WCMRC/BCO is the certified response organization for BC's coastal waters. Funding for this organization comes from a vessel registration fee and a \$0.09 per barrel (\$0.67 per tonne) levy on oil moved within coastal BC waters. BCO maintains spill response equipment, vessels and supplies and trains an operational team of contractors located at port towns and cities along the Coast of BC. BCO provides training to the Fishermen's Oil Spill Emergency Team and BCO is a founding member and sponsor the Oiled Wildlife Society of BC, a non-profit society involved in preparedness activities.

Canada and BC's oiled wildlife policy and response capability is summarized in the Department of Fisheries and Oceans (DFO) Canadian Coast Guard CANUSPAC 2000 Wildlife Working Group Report²⁰. The DFO has no formal plans in place for the rehabilitation of oiled marine mammals. Capacity to treat oiled marine mammals is available at the Vancouver Aquarium. The CWS is responsible for bird species during an oil spill. According to the CANUSPAC report, in the event of an oil spill, the CWS does not endorse bird rehabilitation, but rather focuses on habitat rehabilitation and restoration. Although BC's Marine Oil Spill Contingency Plan, 1992, outlines a provincial strategy for wildlife rescue and rehabilitation, both the CWS and the BC MoE have a "hands-off" policy, allowing qualified agencies to take the lead in responding to oiled bird incidents. The SPCA is recognized as the lead non-government agency responsible for coordinating a response to oiled bird rehabilitation. BCO is also prepared to manage oiled bird rehabilitation operations on a contractual basis and has taken a lead role in the creation of the Oiled Wildlife Society of BC.

Existing legislation (CSA and others) does not include oiled wildlife rehabilitation and rescue as part of the "environment" that the RP is responsible for cleaning up²¹. The issue lies in the legal loophole in terminology that is capitalized on by many RP's.

²⁰ Canadian Coast Guard CANUSPAC 2000 Wildlife Working Group Report. Available at: http://www.pacific.ccg-gcc.gc.ca/er/canuspac00/wildlife_e.htm

²¹ Gail Telfer, Member of BC OWS Board of Directors. Personal communication.

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Because the term “environment” is left open for interpretation, wildlife rescue and rehabilitation does not typically get included. Because wildlife rehabilitation is so expensive, many RP’s in the past have refused to pay. If the RP refuses the case might go to court resulting in a long time lag in rehabilitation expense recovery from the RP, or none at all. There have been many instances where response organizations like OWS or the SPCA were not paid for several months, or at all for the wildlife rehabilitation work they performed. Recently the SPCA sent a memo to the Ministry of Environment requesting to be excluded as a responder to future oil spills because they lack the capacity and resources²¹.

Furthermore, existing legislation does not establish liability with the RP for costs associated with long-term restoration or monitoring of natural resources damaged by an oil spill²⁵. Financial compensation, including fines, penalties and settlements, granted to Environment Canada for restoration of damages sustained by the environment are credited to the Environmental Damages Fund²². This fund is available for community-level projects for assessing and restoring environmental damage caused by pollution.

Existing legislation provides strict requirements for the prevention of marine oil spills and large penalties should a spill occur. Studies have suggested a lack of enforcement is rendering environmental laws ineffective as a pollution deterrent^{23,24}. A potential deficiency may be a lack of sufficient resources for enforcement, including funding for equipment and personnel for surveillance activities required for gathering sufficient evidence to carry out investigations and lay charges. Also, liability for rescue and rehabilitation of wildlife and long-term restoration of habitat is not explicitly included in Provincial and Federal legislation. Although response organizations involved in preparedness activities and providing response and recovery capability exist, the capabilities of these organizations should be evaluated to determine whether coverage and capacity provided, and response times, are adequate given current and projected future levels of production and transportation of oil in the marine environment.

Marine transportation of hazardous materials and non-persistent oils

Federal legislation requires vessels to register with a certified response organization capable of responding to a spill equivalent to the total volume of cargo on board. The legislation also requires that vessels maintain prevention and emergency response plans. Federal legislation establishes spill reporting requirements and establishes that the owner of the vessel is responsible for clean-up and recovery and is liable for costs associated

²² Environment Canada Audit and Evaluation. Environmental Damages Fund Evaluation. Available at: <http://www.ec.gc.ca/ae-ve/default.asp?lang=En&n=608E9C58-1&offset=4&toc=show>

²³ West Coast Environmental Law. 2007. No Response: A survey of environmental law enforcement and compliance in BC. Available at: <http://www.wcel.org/wcelpub/2007/14259.pdf>. PP. 44

²⁴ Wiese, F. 2002. Seabirds and Atlantic Canada’s Ship Sources Oil Pollution: Impacts, Trends, and solutions. Report prepared for World Wildlife Fund Canada. Available at: www.wwf.ca/Documents/Marine/SeabirdsReport.pdf

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with the response and recovery from a spill. The CSA includes shoreline mitigation and restoration as part of the response process, but does not specify the extent of the remediation effort. Provincial legislation is lacking for establishing liability for longer-term restoration of damages to natural resources caused by a spill²⁵.

There is currently no dedicated funding mechanism or initiatives supporting prevention and preparedness activities related to marine spills of hazardous materials or non-persistent oils. In the event of a hazardous material spill in the marine environment, the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances establishes limits of liability for ship owners (up to \$128 million). The international HNS fund is available to cover costs that exceed this limit (up to \$320 million). The HNS does not cover costs where the responsible party is unknown. Claims for costs associated with clean-up and recovery from spills of non-persistent oils are covered by the SSOPF. The SSOPF will also pay claims for costs and expenses for remediation of pollution damage caused by a spill of non-persistent oil, and claims by fisherman for lost economic opportunities.

There is a potential deficiency in capacity for maintaining preparedness for marine spills of hazardous materials or non-persistent oils, as there are no organizations or dedicated funding mechanisms currently available for training and preparedness activities. The responsibility for prevention and preparedness lies with vessel owners and operators. Transport Canada's Hazardous Noxious Substances Program requires owners of vessels and facilities transporting or storing hazardous materials in marine environments to develop and maintain prevention and response plans. BCO will respond to spills of non-persistent oils, but are not capable of responding to hazardous materials spills. Private response contractors (e.g., CEDA, Quantum) are available for clean-up and remediation of marine spills of hazardous materials and hydrocarbons. However, these companies are located in Vancouver, BC, which would result in large response times for spills in remote locations along the coast. The capabilities of existing response organizations should be evaluated to determine whether coverage and capacity provided, and response times, are adequate given current and projected future levels of production and transportation of hazardous materials in the marine environment.

Current legislation does not establish liability for recovery and restoration of habitat and other natural resources damaged by a marine spill of hazardous materials of non-persistent oils. Funding for restoration of damages to natural resources caused by pollution is available through EC's Environment Environmental Damages Fund. It would be important to examine whether potential financial settlements recovered by federal environmental law, and directed through the fund to areas affected by pollution damage, would be sufficient to cover environmental restoration costs associated with a major spill incident in BC's coastal waters.

²⁵ Braul. 2006. British Columbia's Environmental Emergency measures: review and recommendations. Report prepared for Ministry of Environment, British Columbia. Pp 174

Recommendations

In previous sections (and in greater detail in the appendices) funding mechanisms utilized in other jurisdictions are presented, along with an examination of the existing legislation, capacity and funding available for the prevention, preparedness, response, recovery, and remediation of spills associated with sectors involved in the production, storage and transportation of hydrocarbons (persistent and non-persistent) and other hazardous materials. The following is a summary of the apparent deficiencies in the current system in BC and the options that are within the Province's jurisdictional authority to enact.

Summary of Deficiencies

Existing legislation is designed to prevent spills of oil and hazardous materials in marine and terrestrial environments and establishes liability for the costs of clean-up and recovery with the polluter. The effectiveness of the legislation as an incentive depends on consistent enforcement of the regulation. Furthermore, revenues generated through fines, penalties or settlements for offences depend on reliable evidence gained through thorough surveillance and investigation. A report by West Coast Environmental Law found a 50% reduction in enforcement actions in BC between 1995 and 2005, and attributed budget and staffing cuts as being insufficient for Provincial enforcement of environmental law.

Responsibility for ensuring preparedness and spill response plans are in place lies with owners and operators of vessels and facilities for both marine and inland areas. In Northeastern BC, the WCSS ensures spill response capacity is in place for member companies involved in the upstream production, storage and transportation of oil and natural gas. Membership is voluntary and companies that choose not to be involved, or are located outside of WCSS's geographic area, must demonstrate equivalent capability to respond to a spill. Under the CSA, commercial vessels and oil facilities must maintain a membership with a certified response organization. As a designated response organization, BCO collects administration fees and a bulk oil levy in exchange for providing equipment, training, vessels and planning for preparedness and response to an oil spill. BCO does not respond to spills of hazardous materials other than oil. Private hazardous materials response contractor's located in Vancouver are available in the event of a hazardous spill.

Given current and anticipated levels of industrial activity and oil production, storage and transportation in and around coastal waters, it would necessary to determine whether the response capacity afforded by existing response organizations is adequate to address a major spill incident along the coast of BC. Similarly, it would be important to examine whether existing funding mechanisms designed to cover claims for costs and expenses associated with response and recovery, losses incurred by a spill of oil or hazardous materials, and restoration of damages were adequate. An analysis of financial costs

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associated with response and recovery efforts and damages associated with historical spills would provide useful information to assess whether the extent of coverage available through cost recovery and international/ national funds is sufficient to cover the full extent of costs associated with an oil spill. It would also be important to ascertain the likely costs associated with the cleanup and recovery of terrestrial oil and hazardous materials spills given that no funding mechanism is currently in place.

A World Wildlife Fund report suggested that few reported incidents of offshore oil pollution are actually investigated²⁶. The primary reason is lack of resources for gathering evidence, making convictions unlikely. Where evidence is sufficient to carry out an investigation and lay charges, the majority of polluters are charged under the CSA. This act deals primarily with poor shipping practices and does not include offences relating directly to deleterious effects on wildlife or the marine environment, as some of the other acts do. Under Sections 58 and 59 of the EMA, which applies to contaminated sites, the ministry may recover costs associated with remediation of ‘orphan’ sites (i.e., not caused by an environmental emergency). Currently, under Section 88 of the EMA the definition of recoverable costs is limited to costs associated with immediate response to an environmental emergency. Financial settlements and penalties recovered under provincial and federal environmental law may not take into consideration the full extent of damage to natural resources, local economics, wildlife populations and habitat.

Monies recovered under federal environmental law are placed in the Environment Canada’s Environmental Damage Fund which provides grants to community-level restoration projects in areas affected by pollution damages. It would be important to determine if financial settlements and fines recovered under federal marine and environment law, and made available through EC’s program, would provide sufficient funding to cover environmental restoration costs associated with a major spill incident (either inland, or marine).

Financial penalties and settlements recovered under provincial legislation (EMA) are placed in the MoE’s Sustainable Environment Fund. The fund’s current mandate includes emergency response to spills and remediation of contaminated sites. The Oil and Gas Commission’s Orphan Site Reclamation Fund is supported by a levy on the production of oil and gas in the Province. It would be necessary to ascertain whether funding could be made available through these funds for enhancing preparedness and prevention capacity (e.g., training and equipment for responding to clean up and recovery, including rescuing oiled wildlife and restoring damaged habitat).

²⁶ Wiese, F. 2002. Seabirds and Atlantic Canada’s Ship Sources Oil Pollution: Impacts, Trends, and solutions. Report prepared for World Wildlife Fund Canada. Available at: www.wwf.ca/Documents/Marine/SeabirdsReport.pdf

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Recommended Funding Mechanisms

The following funding mechanisms are formulated to address the apparent or potential deficiencies in the current BC situation. Each option may be considered in isolation, or in combination with another option. Further consideration of these mechanisms should be contingent on assessments for the following:

- Adequacy of the current capacity to enforce existing environmental law;
- Capacity of existing response organizations;
- Determination of whether existing spill response funds are adequate given the likely extent of damages should a spill occur; and,
- Ability of existing environmental funding mechanisms to pay for restoration and preparedness activities.

Mechanism 1 – Introduction of an additional bulk oil levy on movement of oil in coastal waters.

Introduction of an additional levy on bulk oil imports and exports to fund initiatives of the MoE EEP and would address a potential deficiency in funds available for: i) preparedness, such as equipment and training for communities and local governments; ii) prevention (enforcement of environmental legislation); iii) remediation/ restoration of habitat damaged by pollution in marine environments (restoration and research); and, iv) oiled wildlife response capability and capacity for the province.

Currently, levies on crude oil produced or imported into the US along the West Coast and Hawaii range from \$0.10 to \$0.12 per barrel. These levies are collected to support government spill response and prevention programs. The Federal EPA levy constitutes \$0.05 of this amount. The remaining portion of the levy is collected to support state-level prevention and response initiatives (Table 1, Appendix A).

As in Canada, oil spill preparedness and response capabilities within the US are provided by industry supported response organizations. Generally, these non-profit organizations are wholly supported through membership fees (Table 2, Appendix B).

The CSA provides Transport Canada with the authority to allow a certified response organization to collect a levy on bulk oil imports and exports. The WCMRC/BCO currently collects a \$0.09 per barrel (\$0.67 per tonne) levy and a membership fee charged to commercial vessels in order to meet their mandate as response organization for Coastal BC.

An additional levy to support the activities of the MoE EEP could be justified on the basis that the existing bulk oil levy is used to support a response organization. In other jurisdictions, vessel owners and companies involved in the oil industry pay levies to support government prevention and response initiatives, in addition to supporting

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response organizations. A provincial levy of between \$0.05 and \$0.10 per barrel could be justified given existing levies in place in other jurisdictions. Approximately 4.6 million tonnes of bulk oil (34,227,907 barrels) are loaded or unloaded in BC each year²⁷. This would result in an estimated \$1.711 million to \$3.423 million in revenue each year.

These funds could be used to support MoE's EEP initiatives (e.g., research, habitat restoration, enforcement, preparedness and response equipment and training for local governments and communities, and capacity to respond to spills of hazardous materials).

Mechanism 2 – Apply a levy on terrestrial production and movement of hazardous materials

Amend the EMA to include the assessment of a levy on the production and movement of hazardous materials (including hydrocarbons) on land.

A revenue model involving taxation, fees or levies, of petroleum and hazardous materials transported on land is also utilized by the Office of Spill Prevention and Response in California; the Spill, Prevention, Preparedness, and Response Program in Washington; the Spill Management Program in Oregon; and the Oil and Hazardous Substances Release Prevention and Response Fund in Alaska (see Table 1, Appendix A). All of these jurisdictions utilize a flat rate tax or fee system, and do not assess levies based on a risk assessment model.

Revenue generated through this levy could be used to establish a Terrestrial Emergency Spill Response and Prevention Program. Funds could be divided into two accounts: i) an emergency spill response trust fund for costs associated with response and cleanup of spills designated as an environmental emergency under the EMA; and ii) a spill prevention and administration account to support administration of the program, enforcement, preparedness activities, grants to communities for preparedness equipment and training, research and development. This might include creation of regional Hazardous Materials response teams throughout the province, or increasing training and capacity of existing fire departments to respond to spills.

For example, potential revenues can be estimated using existing taxation levels utilized in Washington and BC. The Washington State Toxics Control Fund applies a 0.7% tax on first in-state possessor of hazardous substances and petroleum²⁸. Applying a 0.7% tax to the gross value of hazardous materials exported and imported in BC would generate \$6.765 million in revenue per year (Appendix D). The OGC Orphan Sites Fund is supported by a levy on production of oil and natural gas in BC (\$0.94 per m³ of oil, \$0.47/1000m³ gas). Applying this same amount to the total pipeline throughput of oil

²⁷ Burrard Clean. www.burrardclean.com

²⁸ <http://www.ecy.wa.gov/pubs/ftc94129.pdf>

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and natural gas in BC would generate \$64.312 million in revenue each year (Appendix D).

A volume based levy or tax is advantageous as a program funding mechanism since the revenues generated are relatively consistent from year to year. Administrative costs and human resource requirements would potentially be high given the need for assessment of taxes/levies at multiple sources. Determining the size of the levies to ensure sustainability of the fund would require an assessment of the extent of activities required for preparedness and the magnitude of funds that would be required to respond and clean-up a hazardous materials spill.

It is likely that industry would resist implementation of this funding mechanism because of the increased taxation. Once a statutory limit is reached for the emergency spill response trust fund, the levy/tax could be reduced to levels required to service the EEP. The cost of the levy/tax could be justified to industry by potential reductions in clean-up and recovery costs in the event of a spill.

This recommended funding mechanism would fall within provincial jurisdiction, but would require changes to the Environmental Management Act (or other legislation) to allow for the assessment of the levy.

Mechanism 3 – Increase enforcement of environmental law and expand the mandates of existing funds (MoE Environmental Sustainability Fund, EC Environmental Damages Fund) that are supported by revenues generated through environmental penalties, fines and cost recovery settlements.

Revenue generated through this option would rely on consistent enforcement of laws and regulations, including monitoring and surveillance, and support for legal action associated with cost recovery. Enforcement and cost recovery activities would need to be supported, either through revenues generated through this funding mechanism, or through other sources. An advantage of this option is that it would increase the effectiveness of the existing legislation for prevention. However, revenue generated would be variable and unpredictable making an assessment of the administrative costs and human resource requirements for a spill prevention program difficult. The mechanism would involve existing legislation, but it is recommended that the BC EMA, or other federal environmental laws, be amended to broaden the definition of recoverable costs to include costs associated with restoration of natural resources damaged or destroyed in an environmental emergency²⁵. It would also be important to determine whether the mandates of existing funding programs with revenue generated by financial settlements for offences committed under provincial and federal legislation (i.e., BC MoE's Sustainable Environment Fund and EC's Environmental Damages Fund) could be expanded to include the initiatives of the EEP. In the case of the EC Environmental Damages Fund, this would require collaboration between Provincial and Federal governments for use of the funds.

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This option would be favourable to both the public and industry, given no additional taxation is required and it would involve enforcement of existing laws. Influence over revenue generated by financial settlements for offences committed under federal legislation is outside BC provincial jurisdiction. This option would require the coordination and collaboration between MoE and EC to ensure federal funds can be utilized to support the initiatives of MoE's EEP.

Mechanism 4 – Require facilities producing, storing and transporting oil or hazardous materials on land to pay membership or registration fees. Use these funds to support preparedness activities of a Terrestrial Emergency Spill Response and Prevention Program.

This option would apply to all companies involved in producing, storing and transporting oil or hazardous materials on land and would expand preparedness and prevention capacity to the rest of the province. This would ensure an up-to-date registry of information on the location, amounts, and types of hazardous materials stored in the province. A centralized registry would enable effective preparedness planning. The revenue generated would be consistent and fees would be assessed on the basis of program requirements, administrative and human resource requirements, and estimates of the numbers of production and storage facilities, and amounts of materials that are transported in each sector.

Membership arrangements already exist between response organizations and vessels and facilities that transport oil in coastal waters. A similar mechanism is used to ensure preparedness capabilities are available to companies in the upstream oil and gas industry in Northeastern BC, Alberta and Saskatchewan (i.e., WCSS). The State of Hawaii has a similar program within the HEER where land-based facilities pay an annual registration fee of \$100, and funds are used for contingency and spill response planning (Appendix A). Estimates of potential annual revenues are not provided here because information on the numbers of sites and facilities was not available at the time of writing. It is likely that industry would accept this funding mechanism because the service provided would help companies meet legislated preparedness requirements and would reduce their costs in the event of a spill.

Mechanism 5 – Broaden the mandate of the Oil and Gas Commission's Orphan Site Reclamation fund to include a terrestrial hydrocarbon spill response fund to cover clean-up costs where responsible party is unknown, unwilling or unable to pay.

The creation of a terrestrial hydrocarbon spill response trust fund would address a gap in funding available for terrestrial hydrocarbon spill response. In BC, hydrocarbon production mostly involves natural gas extraction and releases of hazardous materials associated with extraction would most likely involve sour gas release and waste water involved in conventional and coal bed methane gas extraction.

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A similar funding mechanism is used to support the Oil and Hazardous Substances Release Prevention and Response Fund in the State of Alaska (\$0.01 per barrel on oil produced in the State of Alaska feeds into the Response Account). Other jurisdictions have a levy-supported response fund in place for marine oil spills (Washington and California). This funding mechanism expands the burden of responsibility for industry beyond reclamation to include recovery and clean-up of releases of hazardous materials associated with extraction of hydrocarbons. The additional levy would be suspended once a statutory limit is reached. It is likely that the petroleum industry would resist this option since it involves increased taxation. Furthermore, the current mandate of the Oil and Gas Commission's Orphan Site Reclamation fund is limited and this option would require changes to the legislation which is outside the jurisdiction of the MoE.

Mechanism 6 - Broaden financial guarantee requirements in the EMA and MLA.

This option addresses potential deficiencies in funding available for clean-up and recovery from a major spill in the terrestrial or marine environments. This option would broaden liability to include environmental restoration and would potentially increase liabilities pending a study on the likely clean-up, recovery and environmental restoration costs associated with a major spill. Financial guarantees would include bonds and liability insurance. This option would have administrative costs associated with processing certificates of financial responsibility. Implementing this option would ensure responsible parties were able to cover costs associated with recovery and/or remediation costs, putting less of a burden on other response funds. Industry may be accepting of this option given that funds are only used in the event of a spill.

Conclusion

PwC examined funding mechanisms for spill prevention and response in a number of jurisdictions and found similarities in the funding mechanisms and prevention and response programs that exist among these jurisdictions. In both Canada and the U.S.A., state or provincial level funding is available where federal and/or international funding is insufficient or ineligible to cover costs or expenses associated with a marine oil spill. At the State or Provincial level, funds for spill prevention and response are typically distributed into two types of accounts or funds: (i) a response and recovery account to cover costs of major spills, and (ii) a prevention and administration account to support programs involved in spill prevention, response preparedness and remediation. Funding for these programs are generated by levies on bulk oil imports and exports; penalties, fines or settlements; cost recovery; registration or certification fees; and interest earned on balances of the response funds.

The analysis of the current situation in BC found that funding for prevention and preparedness activities and organizations is generally lacking. There is no consistent and dedicated funding mechanism existing in BC to support activities related to prevention and preparedness in the terrestrial environment. Prevention and preparedness programs or organizations are lacking for companies not involved with WCSS. There are also no funding mechanisms, initiatives, or organizations involved in the prevention and preparedness for marine spills of non-persistent oils and hazardous materials.

Existing legislation is designed to prevent spills of oil and hazardous materials in marine and terrestrial environments and establishes liability for the costs of clean-up and recovery with the polluter. However, current budgets and staffing levels may be insufficient to adequately enforce environmental law, making it ineffective as a preventative measure, and reducing potential revenues generated through fines, penalties or settlements for offences, which also depend on reliable evidence gained through thorough surveillance and investigation. Existing legislation does not establish liability for expenses associated with rescue and rehabilitation of oiled wildlife or for longer-term recovery or restoration of natural resources damaged or destroyed by a hazardous material or oil release into marine or terrestrial environments.

Further consideration should be given to whether funds available through existing funding sources would be adequate to cover the full extent of costs in event of a spill. Given the current and anticipated levels of industrial activities, it is also important to determine if the capacity of existing response organizations is adequate. Many of these deficiencies could be addressed by expanding the mandate of existing organizations and government funds to include the initiatives of the EEP.

The recommendations in this report take into consideration the potential activities of the MoE EEP and are intended to address identified deficiencies. Consideration has also

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been given to mechanisms utilized in other jurisdictions, and where possible, the options minimize legislative changes, and involve existing funding programs and legislation.

Appendix A. Summary of Funding Mechanisms for Spill Response and Prevention in Pacific States of U.S.A and Canada

United States - Oil Spill Liability Trust Fund

The United States the Oil Pollution Act (OPA) of 1990 establishes that the owner or operator of a facility from which oil is discharged is liable for the costs associated with the containment or cleanup of the spill, and any damages resulting from the spill. When the responsible party is unknown or refuses to pay, funds from the Oil Spill Liability Trust Fund (OSLTF) can be used to cover removal costs or damages resulting from discharges of oil. For any one oil pollution incident, expenditures from the fund are limited to \$1 billion or the balance of the fund, whichever is less. Natural resource damage assessments and claims are limited to \$500 million of the \$1 billion limit. The OSLTF is divided into two components. The Emergency Fund is a recurring \$50 million available to the President annually, and is available to respond to discharges and for initiating natural resource damage assessments. The Principal Fund balance is used to pay claims and funds appropriations by Congress to Federal agencies to administer the provisions of OPA and support research and development²⁹. Through fund appropriations the OSLTF supports various Federal organizations, including the Coast Guard and the Environmental Protection Agency, to cover certain administrative, personnel and research and development costs. Authorized by the Federal Oil Pollution Act, the OSLTF is administered by the U.S. Coast Guard's National Pollution Funds Center²⁹.

The bulk of the fund was established through transfers from other legacy funds. Over \$216 million in transfers from the Oil Pollution Fund, the Offshore Oil Pollution Compensation Fund, and the Deepwater Port Liability Fund were deposited into the OSLTF in 1990. The largest source was the Trans-Alaska Pipeline Liability Fund, which transferred \$335 million between the period of 1995 to 2000. No additional funds remain to be transferred to the OSLTF. The OSLTF is currently funded through a \$0.05 per barrel levy on oil produced or imported into United States. Annual revenues are projected to be decrease from \$449.929 million in FY2007 to \$365.886 million in FY2014. The fund is projected to have a balance of just over \$1 billion in FY 2008³⁰.

Annual expenses a projected to decrease from \$228.710 million in FY2007 to \$181.710 in FY2014. Expenses include: the Emergency Fund (\$50 million annually), claims (\$92 million in FY2007), and appropriations to government organizations (\$86.71 million in

²⁹ US EPA Oil Spill Liability Trust Fund.. Available at: http://www.uscg.mil/npfc/About_NPFC/osltf.asp

³⁰ Oil Spill Liability Trust Fund Forecast FY2007–FY2014. Available at: http://uscg.mil/hq/npfc/Documents/PDFs/OSLTF_Forecast.pdf

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FY2007)³⁰. The fund does not pay administrative costs (e.g., employee salaries and other operating expenses)³¹.

While the fund is in place primarily for addressing oil discharge from ships, it has increasingly been used for discharges at industrial or onshore oil storage and production facilities. The EPA Superfund³² is available to provide funding for response to hazardous materials releases and the clean-up and restoration of hazardous materials waste sites. The EPA Superfund was established through a federal excise tax on the chemical and petroleum industries that expired in 1995.

State of Alaska - Oil and Hazardous Substances Release Prevention and Response Fund

The State of Alaska created the Oil and Hazardous Substances Release Prevention and Response Fund to provide a readily available source of funds to investigate, contain, and clean-up a release or threatened release of oil or hazardous substance in both marine and inland areas³³. The fund is available to reimburse costs for incidents where a responsible party is either unknown or unwilling to cover costs, and where the costs are not eligible for reimbursement through the Federal National Pollution Fund Center. The fund is divided into a Response Account and a Prevention Account.

The Response Account is used to respond to a release or threatened release of oil or other hazardous material following the declaration of a disaster by the Governor. In FY2007, the Response Account had a balance of \$44.1 million. The Response Account is funded through a \$0.01 per barrel levy on oil produced in the state of Alaska, in addition to any costs recovered from responsible parties. The Response levy is suspended when the Account balance reaches or exceeds \$50 million. In 2007, the annual administrative costs for this fund were reported to be \$422,000 and required 5 FTE staff positions³⁴.

The Prevention Account is used to investigate, evaluate, clean-up and take other actions to address oil or hazardous materials releases that have not been declared a disaster by the Governor. It is also used for prevention activities and to fund cost recovery efforts. The Prevention Account is funded through a \$0.04 per barrel levy on oil produced in the state of Alaska, as well as by fines, settlements, penalties, and costs recovered from responsible parties. In FY2005 the fund had a balance of approximately \$9 million. In

³¹ US Coast Guard National Pollution Funds Center: Improvements are needed to reduce the risk of improper payments. 2003. Available at: <http://www.gao.gov/htext/d04340r.html>

³² US EPA Superfund. Available at: <http://www.epa.gov/superfund/>

³³ Alaska Division of Spill Prevention and Response, Office of the Conservation of the Environment. Available at: <http://www.dec.state.ak.us/spar/index.htm>

³⁴ State of Alaska FY2008 Governor's Operating Budget, Department of Conservation Response Fund Administration, Component Budget Summary, December 10th, 2007 http://gov.state.ak.us/omb/09_omb/budget/DEC/comp2259.pdf

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FY2009 the Prevention levy will increase to \$0.06 per barrel. The Prevention account does not have a statutory limit.

The fund is administrated by the Response Fund Administration, in the Division of Spill Prevention and Response, Office of the Conservation of the Environment. The Response Fund Administration manages the Response Fund as a viable, long-term source for the state's core spill prevention and response initiatives. The fund also contributes to a Contaminated Sites Program, an Industry Preparedness Program, a Prevention and Emergency Response program, and a Response Fund Administration program.

Contaminated Sites Program

The contaminated sites program manages the cleanup of contaminated soil and groundwater in Alaska. The program is responsible for identifying, overseeing and conducting the cleanup and management at contaminated sites, and preventing releases from underground storage tank systems and unregulated aboveground storage tanks.

The program has an operating budget of \$7.05 million in FY2009³⁵, with \$3.35 million in revenue from the Oil and Hazardous Response Fund, and remaining funding from government transfers. The program employs 65 FTE staff.

Industry Preparedness Program

Ensures that producers, transporters and distributors of crude oil and refined oil products prevent oil spills, and are fully prepared materially and financially to clean up spills. The program services include reviewing prevention and response plans, conducting spill drills, inspecting facilities and vessels to ensure compliance, reviewing and approving proof of financial responsibility, registering oil spill response contractors, and certifying inspectors.

The program has an operating budget of \$4.33 million in FY2009 with \$2.5 million in revenue from the Oil and Hazardous Response Fund, \$350,000 from a commercial passenger vessel environmental compliance fund, and remaining funding from government transfers³⁶. The program employs 39 FTE staff.

³⁵ State of Alaska FY2009 Governor's Operating Budget, Department of Environmental Conservation Contaminated Sites Program Budget Summary, December 10th, 2007. Available at: http://gov.state.ak.us/omb/09_omb/budget/DEC/comp2386.pdf

³⁶ State of Alaska FY2009 Governor's Operating Budget, Department of Environmental Conservation Industry Preparedness and Pipeline Operations Component Budget Summary December 10th, 2007. Available at: http://gov.state.ak.us/omb/09_omb/budget/DEC/comp1922.pdf

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Prevention and Emergency Response Program

Prevents and mitigates the effects of oil and hazardous releases and ensures their cleanup³⁷. This program leads response activities and protects and minimizes damage to public and environmental resources relating to spills of oil or hazardous material spills. Additional activities involve: overseeing cleanup by the responsible party and intervening when response is inadequate; integrating coastal and inland Alaskan communities in a statewide response system; providing equipment and training to local personnel and communities; coordinating a hazardous materials response team; maintaining government contingency plans; and enforcement of law related to oil or hazardous material spills.

The program has an operating budget of \$3.931 million in FY2009 with \$4.03 million in revenue from the Oil and Hazardous Response Fund and remaining funding from government transfers³⁷. The program employs 36 FTE staff.

State of Washington – Spill, Prevention, Preparedness, and Response Program

The State of Washington has a comprehensive spill prevention, preparedness and response program focused on preventing oil spills in the marine and terrestrial environment and ensuring effective response to oil and hazardous material spills. In FY2007 the program has an annual budget of \$29.1 million which is distributed among a number of funds and accounts, each with different objectives. The program employs approximately 77 full time staff and in FY2007 reported administrative expenses of \$657,784³⁸.

Oil Spill Prevention and Response Fund

Washington's Oil Spill Prevention and Response Fund is available to reimburse costs for incidents where a responsible party is either unknown or unwilling to cover costs, and/or the costs are not eligible for reimbursement through the Federal National Pollution Fund Center. The fund is also used to support the activities of the Oil Spill Advisory Council, to implement and administer the Department of Ecology's Contingency Planning Rule and the Oil Transfer Rule, and some research activities. The fund is divided into the Oil Spill Response Account, the Oil Spill Prevention Account, and the Vessel Response Account.

The Oil Spill Response Account is funded by a \$0.01 per barrel levy on crude oil received at a marine terminal within the State. This account is available for costs

³⁷ State of Alaska FY2009 Governor's Operating Budget, Department of Environmental Conservation Prevention and Emergency Response Component Budget Summary. December 10th, 2007. Available at: http://gov.state.ak.us/omb/09_omb/budget/DEC/comp2064.pdf

³⁸ Spill Prevention, Preparedness & Response Program Overview. 2007. Available at: http://www.ecy.wa.gov/programs/spills/other/overbook_spills.pdf

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incurred in the response and clean-up of a spill of oil. The fund's balance was approximately \$9.0 million in FY2007³⁸.

The Oil Spill Prevention Account is funded by a \$0.04 per barrel levy on crude oil received at a marine terminal within the State and \$0.05 per barrel levy on the transfer of refined oil from or to a vessel located on State waters. This account is used by the Department of Ecology to fund activities related to the prevention of oil spills, including vessel plan reviews and public outreach. This account provides funding for the vessel response account which funds a rescue tug program. The Vessel Response Account also received 16.6% of certain motor vehicle certification fees. This account also transfers funds to the account of the Department of Natural Resource's derelict vessel program.

Vessel Response Account

The Vessel Response Account funds two programs through a 16.6% levy on certain motor vehicle certification fees and transfers from the Oil Spill Prevention Account: the contingency tug program and year-round placement of a tug at the mouth of the Strait of Juan de Fuca. In FY2007 the annual budget for the program was \$1.438 million.

Coastal Protection Fund

The Coastal Protection fund is funded through natural resources damage assessments, spill penalties and the marine gas tax. This fund is used for restoration of natural resources damaged by oil spills, and certain non-personnel related oil projects. In FY2007 the annual budget for the program was \$1.776 million.

State Toxics Control Account

The State Toxics Control Account is funded through a hazardous substance tax, and monies recovered from remedial actions and penalties. Washington State Toxics Control Tax is tied to petroleum products and hazardous substances. The tax is imposed on the first in-state possessor of hazardous substances at the rate of 0.7 percent³⁹. The fund is used for routine hazardous material spill preparedness and response work (including drug lab cleanup). In FY2007 the annual budget for the program was \$7.731 million.

Oregon Spill Management Program

The Spill Management Program (SMP) is administered by the Oregon State Department of Environmental Quality (DEQ). The SMP is responsible for ensuring oil transporting vessels and oil handling facilities have the approved spill response capabilities in place in the case of an accidental spill of oil. Funding for the Spill Management Program comes

³⁹ http://www.ecy.wa.gov/pubs/0501055/0501055_hwtr.pdf

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from six sources: the Marine Spill Prevention Fund, the Hazardous Spill Prevention Fund (HSRAF), the Drug Lab Forfeiture Fund, the Oregon Highway Fund, Grants from the EPA and through contributions from General Revenue⁴⁰.

The DEQ works with government agencies, river users, and response providers to prepare Geographic Response Plans (GRPs) detailing sensitive areas and protection strategies for riparian and coastal regions⁴⁰. These plans also describe geographic information, equipment requirements and locations, and preferred response activities. Vessels traveling the Columbia and Willamette Rivers must also carry spill response plans that provide clear instructions for dealing with a spill which are reviewed and approved by the Department. Certain facilities are also required to have spill response plans that are reviewed and approved by the Department. In addition, the DEQ staff participates in drills and other training exercises to ensure that any spill will be responded to rapidly and effectively.

Marine Spill Prevention Fund

The Marine Spill Prevention Fund exists specifically to prevent and respond to oil spills in Oregon's coastal and inland waters. The Marine Spill Prevention Fund is funded by fees levied on facilities and vessel trips entering the Columbia River System, the Port of Portland, the Port of Astoria and Coos Bay. In FY2007, total Fund revenues were \$275,000, consisting of a carry over balance from FY2006 (\$2,700) and revenue generated through the following levies: \$42/trip by Cargo Vessel and tank Barge, \$836/trip by Tank Vessel and a \$4,500 annual fee applied to petroleum handling facilities⁴¹.

Of the total Marine Spill Prevention Fund revenue, \$301,186 was transferred to the SMP in FY2007⁴². Additionally, the Fund incurred \$37,300 in administrative costs, \$234,000 in clean up costs⁴³.

Hazardous Spill Prevention Fund

The Hazardous Spill Prevention Fund (HSRAF) is one of the DEQ's primary revenue sources for addressing environmental contamination. Using HSRAF funds, the DEQ investigates sites potentially requiring remedial action, oversees cleanup activities performed by responsible parties, and, where necessary, cleans up sites to protect human health and the environment. In FY2007 the HSRAF budget was \$9.990 million which included \$3.440 million in carry over from FY2006 and \$6.550 million in revenue generated through the following four mechanisms⁴³:

⁴⁰DEQ Spill Management Program. Available at: <http://www.deq.state.or.us/lq/pubs/factsheets/cu/SpillManagement.pdf>

⁴¹DEQ Marine Oil Spill Prevention. Available at <http://www.deq.state.or.us/lq/pubs/factsheets/cu/MarineOilSpillPrevention.pdf>

⁴² Jeff Christensen Email Communication with. Received March 27, 2008.

⁴³ Other Fund and Federal Fund Revenue Narrative. Available at http://159.121.9.10/msd/budget/0709ARB/07_LQ/LQREVNAR.pdf

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- A fee of \$30 per ton applied to materials defined as hazardous waste or polychlorinated biphenyl are brought into the hazardous waste management facility near Arlington for treatment or disposal;
- Costs recovered by DEQ from responsible parties where DEQ conducted clean up work at hazardous substance contaminated sites, voluntary cleanups and enforcement sites, and contemporaneous spill sites;
- Interest accrued on the Balance of the HSRAF (\$3.440 million in FY2006);
- Advanced cost recovery payments received from responsible parties (dedicated to specific clean up projects and not available for general program use). The amount of funds advanced from each responsible party varies from site to site and are determined through negotiations with the responsible party. In one example, several parties contributed a share of clean up costs, enabling the DEQ to perform clean up duties on their behalf and provide funds for a long term ground water treatment facility.

Of the total HSRAF revenue, \$616,871 was transferred to the SMP in FY2007⁴². The HSRAF incurred \$1.050 million administrative costs and incurred \$6.850 million in clean up costs⁴³.

Illegal Drug Lab Cleanup Fund

The Illegal Drug Lab Cleanup Fund was established to remove and dispose of chemicals and wastes associated with illegal drug manufacturing facilities⁴³. In FY007, the fund balance was \$111,000, consisting of a carry over balance from FY2006 (\$51,000), and \$60,000 in revenue generated from the following three sources: 10% of the net drug-related assets forfeited to the Oregon State Police, and 5% of forfeitures to local law enforcement agencies; costs recovered from parties responsible for cleanup (e.g., landlords); and restitution from convicted parties when directed by the courts

In FY2007, \$19,547 was transferred to the SMP from the Illegal Drug Lab Clean Up Fund⁴². The Fund incurred \$1,200 in administrative costs, and incurred \$89,000 of clean up costs.

Oregon Highway Spill Fund

The Oregon Highway Spill Fund was established in 1993 by the state of Oregon to pay for highway-related spill response activities⁴³. Total revenue in FY2007 was \$180,800, and included a balance of \$100,400 carried over from FY2006, \$80,400 from the petroleum load fee, and costs recovered from responsible parties. The petroleum load fee is assessed on withdrawals of a petroleum product from a bulk facility, and on importation of petroleum products in a cargo tank or barge for delivery into a storage tank⁴³. The fee is currently \$4.75 per load. In FY2007 the fund incurred \$20,700 in administrative costs and transferred \$116,516 to the Spill Management Program⁴³.

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Environmental Protection Agency Core Grant

The DEQ receives three annual grants from the U.S. Environmental Protection Agency (EPA) on a five year term. The grants have a total value of \$42,000,000⁴⁴, with \$5000 contributing to the Spill Management Program in FY2007⁴².

The first two grants are the Clean Water State Revolving Fund and the Water Pollution Control, Clean Water state Revolving Fund. Both funds provide financial assistance in the form of low cost loans and each have a value of \$15 million. The first of the two grants was initiated in 2003 and will conclude in 2008 and the second grant was initiated in 2004 and will conclude in 2009⁴⁴. The third grant is intended to provide low cost loans for important local water quality projects selected through Oregon's integrated planning and priority setting process. These loans will be issued to governmental and quasi-governmental entities for (i) the planning and construction of wastewater treatment facilities, (ii) projects related to the reduction of pollution from surface water runoff as well as temperature and groundwater impacts, and (iii) the implementation of projects improving the health of nationally recognized estuaries in Oregon⁴³. The total value of this fund is \$12 million and the term began in 2005 and will mature in 2010⁴³.

California Office of Spill Prevention and Response

The California Office of Spill Prevention and Response (OSPR) is administered by the California Department of Fish and Game. The OSPR is responsible for protection, management and restoration of terrestrial and aquatic natural resources. Their mandate is to ensure capacity and resources are available for prevention, preparedness, restoration and response to spills of oil and other hazardous materials. Recently the scope of the OSPR has been increasing to include inland spills.

The OSPR requires that vessels and facilities demonstrate adequate financial responsibility and will review contingency plans for over 7,426 vessels, and 125 marine facilities (FY 2008), including terminals, transfer units, pipelines, offshore platforms and marine fuelling stations⁵⁰. The OSPR establishes and enforces requirements for oil spill insurance for tanker (\$1 billion) and non-tanker (\$300 million) ships, and carries out drills and exercises coordinated with US Coast Guard and other government entities to evaluate the preparedness of facilities and vessels. These drills are used to assess and rate oil spill response organizations.

The OSPR administers the Oil Spill Response Trust Fund, the Oil Spill Prevention and Administration Account, the Fish and Wildlife Pollution Account and the Marine

⁴⁴ EPA Grants Award Database. Available at:
http://yosemite.epa.gov/oarm/igms_egf.nsf/recipient2!OpenView&Start=16.484&Count=500&Expand=16.495#16.495

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Invasive Species Control Fund. For FY2008 the OSPR budget is \$35.066 million⁴⁵. Funding sources include: \$25.469 million from the Oil Spill Prevention and Administration Fund; \$2.629 million from the Fish and Wildlife Pollution Account; \$1.299 million from the Marine Invasive Species Control Fund, \$3.877 million from reimbursements (cost recovery and settlements) and \$1.792 million from other funds.

Oil Spill Response Trust Fund

The Oil Spill Response Trust Fund is available to pay for response, abatement, containment and rehabilitation from an oil spill in marine waters, where the responsible party is unknown or unable to pay for cleanup, and where costs are ineligible for coverage under the Federal Oil Spill Trust Fund⁴⁶. The fund is supported by a \$0.25 per barrel levy received from operators of marine terminals, pipelines and refineries on crude oil imported into and exported from the State. The State government has the statutory authority to increase the levy to \$1.00 per barrel under certain conditions. The levy applies when the balance of the fund is less than 95% of the statutory target balance of \$54.876 million. In FY2007 the fund balance was \$58 million. In FY2008 the fund balance will increase to \$100 million through a treasury loan to bring the amount in line with the balance mandated by law⁴⁷. The fund has not been drawn from since 2000⁴⁵.

Oil Spill Prevention and Administration Account

The Oil Spill Prevention and Administration Fund pays for operational and administrative costs of the OSPR. The fund is intended to be used to implement oil spill prevention programs; to implement research on prevention and control technologies, and improved prevention and response techniques; to finance environmental and economic assessments for oil spills; and to implement and maintain emergency programs, equipment and facilities to respond to oil spills. Funds are not to be used for responding to an oil spill.

The main source of funds are from a levy of \$0.04 per barrel by marine terminal operators on oil delivered through a marine terminal, and by operators of pipelines for oil transported into the State⁴⁸. Projected revenue for FY2008 was \$35.6 million, and the projected fund balance at the end of FY2008 is \$17.7 million⁴⁵.

⁴⁵ The Office of Spill Prevention and Response: Funding and Responsibilities. Presentation to the Assembly Committee on Natural Resources. Nov 15, 2007. Available at: http://www.lao.ca.gov/handouts/resources/2007/OSPR_111907.pdf

⁴⁶ State of California, Manual of State Funds. Fund: 0321. March, 2008. Available at: <http://www.dof.ca.gov/html/calstars/funds/0321.DOC>

⁴⁷ California Dept. Fish and Game. OSPR Technical Advisory Committee Meeting Minutes. January 2007. Available at: http://www.dfg.ca.gov/ospr/commit/tac/minutes/tac_1-30-07.pdf

⁴⁸ State of California, Manual of State Funds. Fund: 0320. March, 2008. Available at: <http://www.dof.ca.gov/html/calstars/funds/0320.DOC>

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Enforcement Program

The OSPR enforcement program responds to reports of incidents of petroleum-based spills, chemical spills, drug lab waste, releases of unknown substances, train accidents and other spills. Additionally, Fish and Game wardens, with authority to enforce criminal and civil statutes, enforce laws that prevent oil spills, dispatches personnel, and investigate spills. The OSPR Enforcement Branch also monitors oil transfer operations, and investigates incidents to gather information and prepare evidence for court cases.

Inland Spills Program

The Inland Spills Program is supported by the Fish and Wildlife Pollution Account. The account is available to reimburse or pay the cost of cleanup, removal and abatement actions related to inland spills. The account is a repository for funds recovered for specified cleanup, removal, or abatement actions, proceeds from civil penalties, and settlements recovered through legal action⁴⁹. In FY 2008 \$2.629 million was deposited in the account⁴⁵. Given reliance on cost recovery and penalties, revenue flow is unpredictable and below what is adequate to respond to spills⁵⁰. The OSPR is currently seeking a permanent funding source for their in-land spill program.

Scientific Study and Evaluation Program

The Scientific Study and Evaluation Program receives funding for projects to research, identify and evaluate sensitive sites for the creation and validation of site-specific response strategies to protect sensitive sites. Research activities include: investigating and evaluating new oil spill response and clean-up methods, research on adverse effects of oil spills, and natural resource damage assessment tools and research on ecological trade-offs and application monitoring for oil dispersants. In FY2006 \$770,000 was allocated to research projects.

Natural Resource Damage Assessment Unit

The Natural Resource Damage Assessment (NRDA) Unit ensures natural resources damaged by an oil spill are appropriately and fully restored. The NRDA also conducts assessments for non-marine oil spills for in-land pollution incidents. Their main role is to assess damages and quantify monetary damages that the responsible party must contribute to restoration, with the objective of obtaining a settlement from the responsible party, and then applying the compensation to restoration of damaged resources. Other activities include habitat acquisition, wetland restoration, wildlife enhancement projects.

⁴⁹ State of California, Manual of State Funds. Fund: 0207. March, 2008. Available at: <http://www.dof.ca.gov/html/calstars/funds/0207.DOC>

⁵⁰ California Dept. Fish and Game. OSPR Technical Advisory Committee. Biennial Report 2005-2006. Available at: http://www.dfg.ca.gov/ospr/commit/tac/tac_2005-2006_biennial_report.pdf

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Oiled Wildlife Care Network (OWCN)

The OSPR has legal responsibility to establish and maintain permanent rescue and rehabilitation stations for seabirds, sea otters, and other marine mammals. The OWCN was created in 1994 as a statewide collective of wildlife care providers and facilities capable of working with oil-affected wildlife. The OWCN consists of 25 participating organizations and 12 regional facilities built specifically for care of oiled birds and marine wildlife. The OWCN is wholly funded through interest generated by the Oil Spill Response Trust Fund through a Memorandum of Understanding (MOU) with the OSPR. The OWCN is administered by the Wildlife Health Center at the School of Veterinary Medicine at the University of California, Davis. The OWCN also carries out research on the effects of oil on wildlife and for improving the quality of response.

The OWCN employs 6 full time staff: 3 veterinarians, a facilities manager, a volunteer coordinator and an administrative coordinator⁵¹. In the FY2008, OWCN revenue will increase from \$1.3 million (interest received from the Response Trust Fund in FY2007) to \$1.5 million, and will result in 2 more full time staff additions. Of the \$1.3 million budget for OWCN, administrative costs account for the majority of allocation of OWCN revenue. Administrative expenses consist of staff salaries, facility maintenance, and purchase of equipment and supplies⁵¹.

Hawaii Environmental Response Revolving Fund

Within the Hawaii State Department of Health, the Environmental Response Revolving Fund (ERRF) is administered by the Environmental Health Administration (EHA). The primary purpose of the ERRF is to provide operational and response capability, personnel, and equipment for the prevention, preparedness, and response to hazardous substance releases, or risks of releases within the State of Hawaii. The ERRF also supports a wide diversity of activities and initiatives including: prevention and preparedness activities, such as oil spill planning, education, research, and training; a used oil-recycling program; and a number of environmental protection and natural resource protection programs involved in energy conservation and alternative energy development, air and water quality improvement, global warming, solid and hazardous waste, an underground storage tank program, and a soil remediation site and facility.

In FY2007 total revenue for the ERRF was \$3.844 million⁵². The ERRF is partly supported by the 'Environmental Response Tax' of \$0.05 per barrel on all crude oil imported into the State of Hawaii. In 2007 this levy resulted in \$1.741 million in revenue⁵². Fines and penalties for environmental violations amounted to \$1.636 million in revenue in FY2007. An annual registration fee of \$100 for facilities storing and

⁵¹ Levon Hull, Personal Communication , April 3, 2008

⁵² Report to the Twenty-fifth Legislature State of Hawai'i. Environmental Response and Hawai'i Emergency Planning and Community Right to Know. FY 2007. Dec 2007. Available at: <http://hawaii.gov/health/environmental/hazard/pdf/rpt2008.pdf>

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producing hazardous materials (including oil) produced \$100,000 in FY2007 which are redistributed to non-profit environmental programs, and organizations involved in preparedness and prevention activities⁵³. Additional revenue was provided from investment interest (\$269,404), registration fees (\$98,250), legislative appropriations (\$66,464), and costs recovered from response actions (\$25,217). The ERRF has a statutory limit of \$20 million, at which point the levy is suspended until the fund drops below \$3 million. Currently the fund balance is between \$7 and 8 million⁵³.

Administration of the ERRF requires 1-2 dedicated full time staff⁵³. Additionally, the ERRF is used to support various staff positions and operational expenses in other programs within the Environmental Health Administration, including: the Office of Hazard Evaluation and Emergency Response (HEER; \$3.210 million), Environmental Management Division (\$54,991), Clean Water Branch (\$275,573), Safe Drinking Water Branch (\$754,391), and the Solid and Hazardous Waste Branch (\$621,911). In FY2007, the total ERRF appropriation was budgeted at \$4.914 million. Additionally, in FY2007 ERRF funding was made available to a Hawaii policy forum (\$100,000), an oil recycling program (\$200,000), and legal services (\$136,000).

The HEER receives the majority of funding and is involved in activities for planning, preparing, and responding to hazardous substance releases. The HEER also provides services for hazard evaluation of ecological and human health risk; and site discovery, assessment and cleanup programs. In FY2007, ERRF expenditures were used to fund 18 FTE staff positions (\$1.080 million), and response and operations costs (\$589,060).

Canada Ship-Source Oil Pollution Fund

The Ship-Source Oil Pollution Fund (SOPF) pays claims for costs and expenses incurred through the prevention, response, recovery and remediation of oil pollution damages caused by oil discharged from all classes of ships at any place in Canada and Canadian waters. The SOPF was enacted in 1989 by amendments to the Canada Shipping Act (CSA) and is currently governed by Part 6 of the Marine Liability Act (MLA) Statutes of Canada, 2001.

The role of the SOPF is to provide an additional layer of compensation in the event that funds available under the 1992 Civil Liability Convention and the 1992 International Oil Pollution Convention (IOPC) Fund (i.e., up to \$342.09M) are insufficient to meet all established claims⁵⁴. Unlike the IOPC, the SOPF is not limited to sea-going tankers or persistent oils (crude oil, heavy fuel oils), and the SOPF pays claims for oil pollution damage and clean-up costs where the identity of the ship that caused the discharge cannot be established.

⁵³ Clarence Martin, personal communication. 21Feb08

⁵⁴ Government of Canada. Sept. 9, 2006. Office of the Administrator of the Ship-source Oil Pollution Fund. Accessed February 18, 2008. Available from <http://www.ssopfund.gc.ca/english/about.asp>.

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Any person may file a claim with the SOPF for oil pollution loss or damage, or costs and expenses. The SOPF administrator is then obliged to take measures to recover the amount of compensation paid to claimants from the responsible party and the IOPC fund, or any other person liable. Canadian fishers can make a claim for loss of income caused by an oil spill from a ship. Response organizations (RO, as defined in the Canadian Shipping Act) have no direct claim against SOPF, but can assert a claim for costs and expenses after exhausting right of recovery against the ship owner. The maximum liability of the SOPF is \$147,357,402 for all claims originating from one oil spill.

The fund was originally established through a transfer of \$149,618,850 from the Maritime Pollution Claims Fund in 1989 and a \$0.15 per tonne (\$0.02 per barrel) levy on shipments by sea and movement of oil by water within Canada in effect between 1972 and 1976. No levy has been charged since 1976.

SOPF revenues include interest credited on the account (\$12.309 million in FY2006) and recoveries of costs and expenses under the Marine Liability Act (\$6,800 in FY 2006). The Minister of Transportation has the statutory authority to impose a maximum levy of 44.19 cents per metric tonne (\$0.06 per barrel) on contributing oil imported into, or shipped from a place in Canada, in bulk as cargo on a ship. The levy would apply to oil companies, power generating authorities, and other industries that import oil in excess of 300 tonnes into Canada by ship or ship oil from any place in Canada. Re-imposition of the levy is at the discretion of the Minister of Transport.

As of March 31, 2006 the balance in the SOPF was \$350,842,718⁵⁵. Administrative costs were reported at \$477,503 in FY2006, including legal costs for recovery of funds. The SOPF also contributes to the IOPC Fund. There was no payment to the IOPC in FY2006, and contributions in FY2005 were \$3,448,152.

The SOPF does not currently support any specific programs, activities or initiatives with respect to preparedness, prevention, response, recovery or remediation.

Canada - Ontario Bill 133 - Community Environment Fund

Recent amendments to Ontario's Environmental Protection Act (EPA), passed in 2005, authorizes the ministry director to impose environmental penalties (EP) up to \$100,000 per day to a company involved in an unlawful spill or discharge. The amendment also provides a ministry director and municipalities with powers to issue orders to recover costs incurred by the Province and municipalities in responding to a spill, rather than recovery through court action. The legislation is designed to encourage companies to prevent spills and ensure fast effective clean-up when spills occur.

⁵⁵ Administer, Ship-Source Oil Pollution Fund. March 31, 2006. The Administrator's Annual Report, 2005 – 2006. Accessed February 19, 2008. Available from http://www.ssopfund.gc.ca/documents/2006ShipSourceAR_e.pdf.

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All penalties and financial settlements collected under the act are deposited in a dedicated community clean-up fund. The fund is used for environmental clean-up purposes only, and will be made available to communities to support environmental remediation and restoration projects and other related activities that address damage caused by spills and pollution. Disbursements from the Community Environment Fund are not expected until 2008/09.

Appendix B. Summary of Industry Supported Response Organizations in Canada, Alaska, and Washington

Canada

Western Canada Marine Response Corporation/ Burrard Clean Operations

(PO Box 82070, Burnaby, B.C., V5C 5P2, Canada. Tel: 604-294-6001)

Burrard Clean Operations (BCO) is the field response and operations division of the Western Canada Marine Response Corporation (WCMRC). BCO was established in 1976 by the oil industry as a non-profit co-operative to provide capability to respond to spills in Burrard Inlet⁵⁶. WCMRC was created in 1995 following changes to the Canada Shipping Act which broadened requirements for response capability in Western Canada and expanded the “Geographic Area of Response” to include all navigable coastal and inland waters of BC. BCO became a division of WCMRC and increased its membership base to include all vessels and oil handling facilities operating within BC’s navigable water.

Section 660.2 of the Canada Shipping Act requires all companies that ship oil by water to contribute to response preparedness through bulk oil cargo fees and annual membership fees to the established response organization.⁵⁷ WCMRC/BCO is supported by a Bulk Oil Cargo levy charged at a rate of \$0.67 per tonne (\$0.09 per barrel) of bulk oil loaded or unloaded within WCMRC/BCO’s geographic area. Membership fees of \$450 annually are also paid by any vessel $\geq 150,000$ tonnes that is carrying fuel for delivery and any vessel $\geq 400,000$ tonnes entering the BC marine economic zone as well as any marine oil handling facility. These funds are used for fee administration, preparedness and prevention activities and exercises, and other administrative expenses.

In FY2006, WCMR/BCO received \$3.120 million in bulk cargo fees, and \$669,807 in membership fees⁵⁸. Other revenues resulted from the sales of equipment, training activities, and interest on deferred revenue from previous years. For this same period, administration costs were \$991,107, logistics and marketing expenses were \$205,924, and operations expenses were \$1.411 million. Additional expenses included \$538,856 on equipment amortization and \$218,306 interest on debt.

WCMR/BCO spends approximately \$400,000 per year on preparedness training and exercises. Total staffing expenses range between \$1.5 to 2.0 million annually⁵⁹.

⁵⁶ Burrard Clean Operations. <http://www.burrardclean.com/>

⁵⁷ Canada Shipping Act. <http://laws.justice.gc.ca/en/showdoc/cs/C-10.15/bo-ga:l_8-gb:s_169/en#anchorbo-ga:l_8-gb:s_169>

⁵⁸ WCMRC July 1, 2007. Fee Justification Document – Amended Membership Fees. Accessed March 3, 2008. Available from <http://www.burrardclean.com/>

⁵⁹ Kevin Gardiner, Personal Communication.

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The WCMR/BCO has a volunteer board of directors. Staff for WCMR/BCO include: the president/general manager (part time position), 15 full time staff positions (2 currently vacant, and 2 are currently being filled by contract personnel), and 7 part time positions⁵⁹.

The WCMRC/BCO also maintains an Advisors group of 31 experts in spill response on contract from locations around North America⁵⁹.

WCMRC/BCO also provides the following services: spill response training courses, certification exercise facilitation, spill trajectory modeling services, spill equipment sales, incident command supplies and sorbent sales.

WCMRC/BCO recruits and trains a network of fishers and contractors to assist in their operations. This organization is called the Fishermen's Oil Spill Emergency Team (FOSET). FOSET includes approximately 118 vessels and crew located along BC coast line. FOSET members participate with WCMRC/BCO in preparedness exercises and training on an annual basis⁵⁹.

WCMRC/BCO is a founding member of and sponsor of the Oiled Wildlife Society of BC (OWS). WCMRC/BCO supports the OWS through storage and maintenance of a response trailer of society equipment at their facility, and arrangements for call out if trailer is required, participation and hosting of society meetings, and donations (e.g., computer equipment). No fees are collected from WCMRC/BCO members for wildlife support, other than for hazing equipment requirements as per the CSA requirements.

BC Oiled Wildlife Society

The BC Oiled Wildlife Society (OWS) has no dedicated annual source. Sources of revenue are from: fees for rental of their two trailers to Focus Wildlife (an international oiled wildlife response organization); fees for facilitating training courses for interested parties that would like to become involved in wildlife rescue/rehab (training courses are given by Focus Wildlife); a minimal amount of funds received from RPs through court settlements; and membership fees (\$25/yr; members include the current and past board members)⁶⁰. The OWS has no staff and consists of a volunteer board of directors, with all actions facilitated done on a volunteer basis.

The OWS has two fully supplied trailers; both are stored at Burrard Clean (BCO). The 53 foot trailer is partially owned by BCO and is equipped for full wildlife medical and bathing facilities⁶¹. The 16 foot trailer belongs to OWS. BCO maintains and licenses both trailers. Inventory includes pens, floating pools, water heaters, washing hoses, and rehabilitation and feeding equipment.

⁶⁰ Gail Telfer, Member of BC OWS Board of Directors. Personal Communication.

⁶¹ Oiled Wildlife Society of BC. Website. Available from: <http://oiledwildlifesociety.com>

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Response capabilities of the OWS are limited. They have access many volunteers, and normally work in conjunction with Focus Wildlife, and in the past, the SPCA. A deficiency identified by both, Dave Smith of the Canadian Wildlife Society and Gail Telfer of the OWS is the fact that there is currently no readily available money earmarked for wildlife rehabilitation activities in the event of a spill (i.e., there are no funds available from provincial or federal sources). Currently, the legislation (CSW etc.) does not explicitly include wildlife as part of the 'environment' to which the RP is obligated to remediate. In many cases, the RP has refused to pay costs associated with wildlife rehabilitation. The BC OWS, Focus Wildlife, SPCA and other rehabilitation facilities are planning a meeting in the near future to establish a response plan for wildlife.

Western Canadian Spill Services Ltd.

(1538 - 25 Avenue N.E. Calgary, AB. T2E 8Y3 Canada. Tel: 403-250-9606, email: info@wcss.ab.ca)

Western Canadian Spill Services Ltd. (WCSS) is the spill preparedness organization of the upstream petroleum industry in N.E. British Columbia, Alberta, and Saskatchewan⁶². WCSS includes 18 spill cooperatives within 6 geographic zones. Each cooperative operates in a specific geographic area and oversees the maintenance program for the area's initial spill response equipment. WCSS maintains locations as far north as Fort Nelson, BC, as far south as Lethbridge AB, and as far east as Lloydminster, SK. Member companies within each region are provided with access to oil spill contingency plans, initial spill response equipment and access to regional and specialty spill response equipment.

WCSS does not respond directly to spills, however they assist in spill response by providing equipment and short-term volunteer labour. All organizations within the geographic area of WCSS are obliged under the Canada Oil and Gas Operations Act⁶³ to either become a member of WCSS, or demonstrate equivalent capability to respond to spills independently.

WCSS members have principle access to several services and support infrastructure including oil spill response equipment and oil spill contingency manuals. WCSS organizes annual preparedness and response training for its members, and supports and facilitates continual improvement through various development initiatives. WCSS provides assistance to government regulators regarding spills of unknown origin, and actively works with partners and regulators to identify and coordinate appropriate response mechanisms. WCSS is also involved in several research and development initiatives.

⁶² Western Canadian Spill Services Ltd. 2007. Available from: <http://www.wcss.ab.ca/index.asp>

⁶³ <http://lois.justice.gc.ca/en/O-7/index.html>

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WCSS would not likely become involved in non-oil spills originating in their operating area. The organization may assist with the rental of equipment, but does not have capacity to assist with chemical or other hazardous material releases.

The WCSS membership includes petroleum corporations or divisions of corporations. The WCSS is supported by membership fees and site fees (based on capacity of each company). Membership fees include a flat service fee of \$315, fees based on the number of operational wells, and fees based on the lengths of pipeline owned by a company. In FY2006, total revenue collected from fees was \$1.6 million.

WCSS is also supported by five industry shareholders, which include three industry trade associations and two pipeline companies:

- Canadian Association of Petroleum Producers
- Small Explorers and Producers Association of Canada
- Enbridge Pipelines Inc.
- Kinder Morgan Canada Ltd.
- Canadian Petroleum Products Institute

WCSS is a not for profit organization and does not have any paid employees. All fees collected are re-invested in either training or capital asset purchases. The WCSS operates under a fixed annual administration budget (undisclosed amount).

Alaska

Alaska Clean Seas

(Prudhoe Bay, AK 99734-0022, Tel: 907-659-2405, Email: gm@Alaskacleanseas.org)

Alaska Clean Seas (ACS) is a non-profit, incorporated oil spill response cooperative whose current membership includes oil and pipeline companies that engage in or intend to undertake oil and gas exploration, development, production and/or pipeline transport activities on the North Slope of Alaska.

ACS does not receive funding support from the State Oil and Hazardous Substances Release Prevention and Response Fund. Eleven member companies share in the funding support for ACS. Revenue sources include: membership fees, annual renewal fees, daily development fees, rig day fees for exploration members and production fees based on a cost sharing document that provides the calculations for the various fields being developed⁶⁴. ACS has 74 full time employees with operating expenditures for labor and benefits at approximately \$7 million for FY2008. Additionally, a minimum of 115

⁶⁴ Ron Morris (President and General Manager), Personal Communication.

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qualified response personnel, supplied by operating companies under a mutual aid agreement, are immediately available on a daily basis to participating member companies.

Alaska Chadux Corporation

(Anchorage, AK 99507, Tel 907-348-2365, bheavilin@chadux.com)

Chadux is a member-funded, not-for-profit oil spill response organization headquartered in Anchorage, Alaska. Chadux is classified as an Oil Spill Removal Organization by the US Coast Guard and registered as Primary Response Action Contractor, and a Non-tank Vessel Cleanup Contractor with the State of Alaska.

Chadux does not receive funding support from the State Oil and Hazardous Substances Release Prevention and Response Fund. Chadux is a not-for-profit organization funded entirely through industry members. Chadux has 10 employees and an administrative budget for wages/payroll, taxes and benefits is in excess of \$1 million⁶⁵.

Cook Inlet Spill Prevention & Response Inc (CISPRI)

(Nikiski, AK 99635. Tel: 907-776-5129. Email: DLentsch@cispr.org)

Cook Inlet Spill Prevention & Response Inc (CISPRI) is involved in oil spill response & contingency planning in Cook Inlet, Alaska. Neither the State, nor Federal oil spill funds contribute to the capital and operating budgets of CISPRI. Funding for the organization comes exclusively from oil industry members. CISPRI has 17 full time employees, one full time contract person, and one part-time contract person. The annual budget for personnel, including overtime, is \$1.195 million⁶⁶.

Southeast Alaska Petroleum Resource Organization

Ketchikan, AK 99901, Tel: 907-225-7002,

Southeast Alaska Petroleum Resource Organization (SEAPRO) is a non-profit corporation cooperative serving the needs of various facilities and vessels throughout the Southeast Alaska region. SEAPRO's mission is to provide oil spill response resources to any of its member companies in a spill. The organization's corporate offices are located in Ketchikan, Alaska. The Wildlife Response Team is made up of individuals who have completed specialized training in the various aspects of dealing with wildlife that may be impacted by an oil spill.

⁶⁵ Bob Heavilin (General Manager), Personal Communication.

⁶⁶ Doug Lentsch, Personal Communication

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Washington

Islands' Oil Spill Association

Friday Harbor, WA 98250. Tel: 360-378-5322

Islands' Oil Spill Association community-based, nonprofit organization providing prompt first response for oil spills in the San Juan Islands, shoreline protection, wildlife rescue and training for containment and oiled wildlife responders. The organization is funded through donations and memberships only, with 354 community members volunteering their time to train and be available as responders in San Juan County.

Membership annual fees are as follows: shoreline resorts and marine-related businesses (non-fuel) \$210, local businesses (non marine and non-fuel) \$105, owners/operators of vessels \$1.25 per foot, (\$36 minimum), and residents \$25.

Marine Spill Response Corporation/ Marine Preservation Association

(Everett, WA 98201, Tel: 425-252-1300, Port Angeles, WA 98362, Tel: 360-417-5437. Email: norell@msrc.org)

Marine Spill Response Corporation (MSRC) is an independent, non-profit, national spill response company, funded solely by the Marine Preservation Association (MPA). MPA, like MSRC, is a not-for-profit organization⁶⁷. Their area of operation is the lower 48 states, Hawaii and the US Caribbean. MSRC is not a primary response contractor in Alaska, but can provide services to our customers (MPA Members) in the event of a spill response.

MPA, whose membership consists of companies engaged in the business of petroleum exploration and production, refining and marketing, transportation and shipping, provides steady state funding to MSRC in furtherance of the objectives of OPA-90 and the recognition by MPA's Members of the importance of a high quality, dedicated spill response capability. To become a customer of the MSRC (i.e., entitled to cite MSRC in response plans), a company must first become a member of the Marine Preservation Association (MPA)

Washington State Maritime Co-op

(Seattle, WA 98119, Tel: 206-448-7557)

The Washington State Maritime Cooperative (WSMC) is a non-profit corporation that provides oil spill contingency plan coverage and emergency response systems to vessels in Washington waters (except the waters of the Columbia and Snake Rivers) that are not

⁶⁷ Judith Norell, Personal Communication

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otherwise covered by their own state approved contingency plan. WSMC is a membership organization with a board of directors

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Terrestrial Production, Storage and Transportation of Hydrocarbons and Hazardous materials

Table A1. Existing legislation, funding mechanisms, and programs for spills involving the terrestrial production, storage and transportation of hydrocarbons and hazardous materials.

	Legislation	Funding mechanisms	Programs
Prevention and Preparedness	<p>Canadian Environmental Protection Act (CEPA)⁶⁸</p> <ul style="list-style-type: none"> • Section 56 provides authority to establish requirements for pollution prevention plans; • Section 199 establishes requirements for environmental emergency plans; and • Section 201 establishes spill reporting requirements and also requires any person who owns or is in charge of a substance to take reasonable measures to prevent an environmental emergency and to cleanup a spill if one occurs. <p>Canada Oil and Gas Operations Act⁶⁹</p> <ul style="list-style-type: none"> • Section 14 allows regulations to be made prescribing measures necessary to prevent pollution of air, land or water as a result of the exploration and drilling for, or the production, storage, transportation, distribution, etc of any oil or gas. <p>BC Environmental Management Act (EMA)⁷⁰</p> <ul style="list-style-type: none"> • Sections 78 provides the minister with authority to require an environmental impact assessment • Section 79 and 81 enable the minister to implement measures to lessen the risk of a spill, and requires a 	<p><i>No consistent and dedicated funding mechanism existing in BC to support activities related to prevention and preparedness.</i></p>	<p>Owner/ Operators are responsible for prevention activities and ensuring response capacity should a spill occur.</p> <p>Western Canadian Spill Services (WCSS)</p> <ul style="list-style-type: none"> • Provides prevention and preparedness capacity for the upstream oil and gas industry in Northeastern BC. • Available to member companies only <p><i>No prevention and preparedness programs are in place for non-member companies and the remainder of BC.</i></p>

⁶⁸ Canadian Environmental Protection Act, 1999. Available at: http://www.ec.gc.ca/CEPARRegistry/the_act/

⁶⁹ Canada Oil and Gas Operations Act. 1985. Available at: <http://laws.justice.gc.ca/en/O-7/index.html>

⁷⁰ BC Environmental Management Act. Available at: http://www.qp.gov.bc.ca/statreg/stat/E/03053_00.htm

⁷¹ BC Transport of Dangerous Goods Act. Available at: http://www.qp.gov.bc.ca/statreg/stat/T/96458_01.htm

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	Legislation	Funding mechanisms	Programs
	<p>polluter to report a spill.</p> <ul style="list-style-type: none"> • Section 86 requires the preparation of an environmental management plan if an environmental protection order is declared under Section 85. • Section 89 enables the minister to request an area based management plan which would include disclosure of potential sources of pollution and management actions <p>BC Transport of Dangerous Goods Act⁷¹</p> <ul style="list-style-type: none"> • Section 5 specifies safety precautions by in place for the transport of dangerous goods. 		
Response and recovery	<p>CEPA</p> <ul style="list-style-type: none"> • Section 204 provides for the establishment of a national system for notification and reporting of environmental emergencies. • Section 205 establishes that the person who owns or is in charge of a spilled substance is liable for restoring any part of the environment damaged by the emergency and/or for costs and expenses incurred by a public body or agency for measures taken to prevent and cleanup the spill. <p>Canada Oil and Gas Operation Act</p> <ul style="list-style-type: none"> • Section 25 prohibits a person from causing or permitting a spill and establishes a duty to report any spills that do occur and reasonable measures must be taken to respond to the spill and protect the environment. • Section 25 enables anyone other than the spiller to recover costs associated with responding to the spill. <p>BC EMA</p> <ul style="list-style-type: none"> • Section 80 specifies spill response actions. <p>BC Pipeline Act</p> <ul style="list-style-type: none"> • Section 39 specifies measures to contain or 	<p>Cost Recovery</p> <ul style="list-style-type: none"> • Section 203 of the CEPA provides for the recovery of costs and expenses incurred by government during cleanup or environmental remediation • The Spill Cost Recovery Regulation of the BC EMA⁷² determines the extent of liability the responsible party will assume for a release <p>Fees</p> <ul style="list-style-type: none"> • Section 35 of the BC Pipeline Act gives the Minister powers to apply an annual fee for inspection or carrying out provisions in the Act. • The Permit Fees Regulation of the BC EMA, establishes fees for permits for discharges of contaminants into the environment. <p>Penalties</p> <ul style="list-style-type: none"> • Section 120 of the BC EMA specifies penalties of up to \$300,000 for failure to comply with the requirements of the 	<p>BC Sustainable Environment Fund</p> <ul style="list-style-type: none"> • Section 4 of the BC Sustainable Environment Fund Act⁷³ specifies that all funds derived from fees, permits and approvals under the EMA are deposited into the fund. • Supports responding to high-risk environmental emergencies⁷⁴. <p>WCSS provides response capability (equipment) to member companies in NE BC, but does not respond directly to a spill.</p> <p>CEDA Emergency Response Team (CERT)</p> <ul style="list-style-type: none"> • Contractor with major response centres in Edmonton, Alberta and Vancouver, Canada. • CERT responds to road, air, rail, marine and industrial emergencies involving hazardous material and

⁷² BC Environmental Management Act. Spill Cost Recovery Regulation. Available at: http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/250_98.htm

⁷³ BC Sustainable Environment Fund Act. Available at: http://www.qp.gov.bc.ca/statreg/stat/S/96445_01.htm#section4

⁷⁴ BC Ministry of Environment. 2005 Budget. Available at: http://www.bcbudget.gov.bc.ca/2005_sept_update/est/21_Environment.pdf

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	Legislation	Funding mechanisms	Programs
	<p>eliminate pipeline spills.</p> <ul style="list-style-type: none"> • Section 39(4) requires person or company to pay for expenses or costs incurred in containing and eliminating spills. 	<p>permit.</p> <p>Fines</p> <ul style="list-style-type: none"> • Section 120 of the BC EMA specifies fines of up to \$1 million for offence under the Act. • Offences under the BC Pipeline Act are subject to a \$1000 fine. • Offences under the of the BC Transport of Dangerous Goods Act are subject to fines of up to \$100,000 (Section 16). 	<p>hydrocarbon spills.</p>
Remediation	<p>BC EMA</p> <ul style="list-style-type: none"> • Part 4 of the EMA includes legislation for contaminated site remediation • Section 45 establishes the responsible party liable for costs associated with remediation of a contaminated site. • Section 48 allows a director to issue a remediation order to a responsible person to carry out or contribute to costs associated with remediation. <p><i>No legislation establishes liability for longer-term recovery or restoration of natural resources damaged or destroyed by a hazardous material or oil release⁷⁵.</i></p>	<p>Fees</p> <ul style="list-style-type: none"> • BC EMA Contaminated Sites Regulation⁷⁶ enables fees charged for registration with a Contaminated Site Registry and requires evidence of financial security as a condition of a certificate. • In FY 2007 \$605,529 was generated from site registration fees for the Sustainable Environment Fund. <p>Levies</p> <ul style="list-style-type: none"> • Oil and Gas Commission Levy and Orphan Site Reclamation Fund Tax Regulation⁷⁷ requires producers to pay a levy on production of petroleum (\$0.94 per m³) and natural gas (\$0.47 per 1000 m³). 	<p>BC Sustainable Environment Fund</p> <ul style="list-style-type: none"> • Supports contaminated site clean-up. <p>Orphan Site Reclamation Fund</p> <ul style="list-style-type: none"> • Pays costs for reclamation of orphaned wells, pipelines or facilities. <p>BC MoE Land Remediation Section</p> <ul style="list-style-type: none"> • Investigates and remediates contaminated sites in BC. • Maintains a site registry and site screening process. • Operating budget for FY 2007 was \$2.55 million. \$1.62 million allocated to staff salaries and administration. <p>Environment Canada's (EC) Federal contaminated Sites Program</p> <ul style="list-style-type: none"> • Funds clean-up and remediate contaminated sites within federal

⁷⁵ Braul. 2006. British Columbia's Environmental Emergency measures: review and recommendations. Report prepared for Ministry of Environment, British Columbia. Pp 174

⁷⁶ BC Environmental Management Act. Contaminated Sites Regulation. Available at: http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/EnvMgmt375_96/375_96_00.htm

⁷⁷ Oil and Gas Commission Levy and Orphan Site Reclamation Fund Tax Regulation . Available at: http://www.qp.gov.bc.ca/statreg/reg/O/OilGas/363_98.htm

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			<p>jurisdiction.</p> <ul style="list-style-type: none"> • \$3.5 billion in long-term funding provided in the 2004 budget. <p>EC's Environmental Damages Fund</p> <ul style="list-style-type: none"> • Funded by settlements and fines assessed under federal environmental law. • Used for community-level environmental restoration projects in spill affected areas.

Marine Transportation of Persistent Oils

Table A3. Existing legislation, funding mechanisms, and programs for spills involving the marine transportation of persistent oils.

	Legislation	Funding mechanisms	Programs
Prevention and Preparedness	<p>Canada Shipping Act (CSA)⁷⁸</p> <ul style="list-style-type: none"> • Section 167(a) of the CSA requires vessels and oil handling facilities to have an arrangement with a response organization in case of a spill, and requires operators of oil handling facilities to comply with regulations regarding procedures, equipment and resources required onsite. • Section 171 establishes procedures, equipment and resources required of a response organization. <p>Canadian Marine Liability Act (MLA)⁷⁹</p>	<p>Levies</p> <ul style="list-style-type: none"> • Section 170 of the CSA provides a certified Response Organization the ability to charge a fee for providing prevention, preparedness and response services. • WCMRC/BCO charges a levy of \$0.09 per barrel of oil 	<p>Western Canada Marine Response Corporation /Burrard Clean Operations (WCMRC/BCO)</p> <ul style="list-style-type: none"> • Certified response organization for the coastal waters of BC. • Ensures there is a state of

⁷⁸Canada Shipping Act, 2001. Available at: <http://www.tc.gc.ca/acts-regulations/GENERAL/C/csa2001/menu.htm>

⁷⁹ Canada Marine Liability Act. Available at: <http://www.tc.gc.ca/acts-regulations/GENERAL/M/mla/regulations/001/mla001/mla001.htm>

⁸⁰ Emergency Program Act. Available at: http://www.qp.gov.bc.ca/statreg/stat/E/96111_01.htm

⁸¹ Emergency Program Regulation. Available at: http://www.qp.gov.bc.ca/statreg/reg/E/EmergencyProgram/477_94.htm

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	Legislation	Funding mechanisms	Programs
	<ul style="list-style-type: none"> Section 60 requires all ships entering or leaving the Canadian Economic zone carry a certificate proving insurance or other security satisfying the liability requirements of Article VII of the Civil Liability Convention. <p>CEPA</p> <ul style="list-style-type: none"> Section 199 requires companies to prepare and implement an environmental emergency plan respecting the prevention of, preparedness for, response to or recovery from an environmental emergency. Section 201 of the CEPA establishes spill reporting requirements and also requires any person who owns or is in charge of a toxic substance to take reasonable measures to prevent an environmental emergency. <p>BC Emergency Program Act⁸⁰ and the Emergency Program Regulation⁸¹</p> <ul style="list-style-type: none"> BC MoE is responsible for provincial preparedness and response management for spills. The BC Marine Oil Spill Response Plan⁸² specifies the BC government's involvement in responding to a major marine oil spill and establishes a site or incident response plan consistent with international emergency response standards. <p>BC Environmental Management Act (EMA)⁸³</p> <ul style="list-style-type: none"> Sections 78 provides the minister with authority to require an environmental impact assessment Section 79 and 81 enable the minister to implement measures to lessen the risk of a spill, and requires a polluter to report a spill. Section 86 requires the preparation of an environmental management plan if an environmental protection order is declared under Section 85. Section 89 enables the minister to request an area based management plan which would include disclosure of potential sources of pollution and management actions 	<p>loaded or unloaded within coastal waters.</p> <p>Fees</p> <ul style="list-style-type: none"> Commercial vessels are required to pay a membership registration fee to the WCMRC/BCO of \$450 per year. 	<p>preparedness in place.</p> <ul style="list-style-type: none"> Attempts to mitigate impacts when oil spills occur. Does not include the prevention and response of chemical spills. Limits their response activities to member vessels and facilities. <p>Oiled Wildlife Society of BC</p> <ul style="list-style-type: none"> Non-profit society involved in preparedness activities.
Response and recovery	<p>International Maritime Organization's (IMO) International Convention on Civil Liability for Oil Pollution Damage⁸⁴</p> <ul style="list-style-type: none"> Establishes liability for oil pollution damage on the owner of the ship from which the polluting oil escaped or was discharged. 	<p>Levies</p> <ul style="list-style-type: none"> 1992 Civil Liability Convention (CLC) and the 1992 International Oil 	<p>WCMRC/BCO</p> <ul style="list-style-type: none"> Certified by Transport Canada as a response organization to respond to

⁸² BC Marine Oil Spill Response Plan. 2007. Available at: http://www.env.gov.bc.ca/eemp/resources/response/pdf/marine_oil_response_plan.pdf

⁸³ BC Environmental Management Act. Available at: http://www.qp.gov.bc.ca/statreg/stat/E/03053_00.htm

⁸⁴ International Marine Organizations. International Convention on Civil Liability for Oil Pollution Damage. Available at: http://www.imo.org/home.asp?doc_id=660&topic_id=256#4

⁸⁵ Migratory Birds Convention Act, 1994. Available at: http://www.cws-scf.ec.gc.ca/legislations/laws1_e.cfm

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	Legislation	Funding mechanisms	Programs
	<p>CSA</p> <ul style="list-style-type: none"> • Section 169 allows the Minister to issue a certificate designating a response organization. • Section 170 allows a response organization to charge fees or levies <p>Migratory Birds Convention Act⁸⁵.</p> <ul style="list-style-type: none"> • Offence to deposit oil, oily waste or other substances harmful to migratory birds into water inhabited by migratory birds. <p>MLA</p> <ul style="list-style-type: none"> • Establishes the owners or operators of vessels as liable for costs (of reasonable measure) associated with recovery and restoration of oil pollution damages to the environment. • Includes costs incurred through response and recovery actions from: the Department of Fisheries and Oceans, a response organization (e.g. Burrard Clean), any other person in Canada or any other person in a state, other than Canada, that is a party of the Civil Liability Convention. • Part 6 establishes the Ship-Source Oil Pollution Fund. • Any persons or organizations that have incurred loss or damage as a result of ship source oil pollution may file a claim to the administrator of the SSOPF. <p>BC EMA</p> <ul style="list-style-type: none"> • Section 80 specifies spill response actions. 	<p>Pollution Convention (IOPC) Fund.</p> <ul style="list-style-type: none"> • The Ship-Source Oil Pollution Fund (SSOPF). • Transport Canada has the statutory authority to apply a \$0.06 per barrel levy on crude oil imported or exported into Canada. • No levy has been charged since 1976. <p>Fines</p> <ul style="list-style-type: none"> • Migratory Birds Convention Act Bill C -15 imposes a minimum fine of \$100,000 (summary conviction) and \$500,000 (indictable offence) on shippers who illegally dump bilge oil in Canadian waters. • Additional offences are punishable by fines of up to \$1 million. 	<p>marine oil spills in Coastal BC.</p> <ul style="list-style-type: none"> • Maintains equipment and vessels, and trains an operational team of contractors located at Queen Charlotte City, Prince Rupert, Kitimat, Shearwater, Port Hardy, Campbell River, Powell River, Port Alberni, Sechelt, Nanaimo, Ganges, Esquimalt and Vancouver. • Maintain the Fishermen's Oil Spill Emergency Team which receives comprehensive spill response training. • Prepared to manage oiled bird rehabilitation operations on a contractual basis. <p>Vancouver Aquarium</p> <ul style="list-style-type: none"> • Capacity to treat oiled marine mammals. <p>SPCA</p> <ul style="list-style-type: none"> • Lead non-government agency responsible for coordinating a response to oiled bird rehabilitation.
Remediation	<p>CSA</p> <ul style="list-style-type: none"> • Section 181(4) defines a response operation and includes: recovery, dispersal or destruction of the pollutant, shoreline mitigation and restoration as a part of the response process. The extent of remediation, however, is not specified. <p>BC EMA</p> <ul style="list-style-type: none"> • Part 4 of the EMA includes legislation for contaminated site remediation • Section 45 establishes the responsible party liable for costs associated with remediation of a contaminated site. 	<p>SSOPF</p> <ul style="list-style-type: none"> • Pays claims for costs and expenses incurred through the remediation of oil pollution damages caused by oil discharged from all classes of ships at any place in Canada, and Canadian waters. <p>EC's Environmental Damages Fund⁸⁶</p>	<p>CEDA</p> <ul style="list-style-type: none"> • Private response company available for the remediation of spills of hazardous materials and hydrocarbons in marine environments.

⁸⁶ Environment Canada. Environmental Damages Fund Video. Available at: http://www.ns.ec.gc.ca/edf/video_e.html

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	<ul style="list-style-type: none">• Section 48 allows a director to issue a remediation order to a responsible person to carry out or contribute to costs associated with remediation.	<ul style="list-style-type: none">• Provides funding for restoration of damages to natural resources caused by pollution• Penalties and settlements under federal environmental legislation (e.g., CSA, Migratory Birds Act, CEPA) can be directed into the fund• Fund is national in scope, but projects are chosen on a regional basis	

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Marine Transportation of Hazardous Materials and Non-persistent oils

Table A4. Existing legislation, funding mechanisms, and programs for spills involving the marine transportation of hazardous materials and non-persistent oils.

	Legislation	Funding mechanisms	Programs
Prevention and Preparedness	<p>CSA</p> <ul style="list-style-type: none"> • Section 167 requires vessels to be registered with a response organization capable of responding to a spill equivalent to the total amount of cargo on board. • Section 171 establishes procedures, equipment and resources required of a response organization. <p>CEPA</p> <ul style="list-style-type: none"> • Section 199 establishes the requirement to prepare and implement an environmental emergency plan respecting the prevention of, preparedness for, response to or recovery from an environmental emergency. <p>BC Transport of Dangerous Goods Act</p> <ul style="list-style-type: none"> • Section 7(1) requires vessels importing or transporting dangerous good to have an approved emergency response plan in place. 	<p><i>There are no funding mechanisms or initiatives for prevention and preparedness for marine spills of non-persistent oils and hazardous materials.</i></p>	<p>Transport Canada's Hazardous Noxious Substances Program⁸⁷</p> <ul style="list-style-type: none"> • Ship pollution response plans, • Handling facility pollution response plans, • Monitoring response organization exercises, • Enforcement and compliance.
Response and recovery	<p>CEPA</p> <ul style="list-style-type: none"> • Section 201 establishes spill reporting requirements and also requires any person owning or in charge of a toxic substance to take reasonable measures to prevent an environmental emergency. <p>Migratory Birds Convention Act</p> <ul style="list-style-type: none"> • Offence to deposit oil, oily waste or other substances harmful to migratory birds into water inhabited by migratory birds. <p>MLA</p> <ul style="list-style-type: none"> • Establishes the owners or operators of vessels as liable for costs (of reasonable measure) associated with recovery and restoration of oil pollution damages to the environment. 	<p>SSOPF</p> <ul style="list-style-type: none"> • Claims for costs and expenses for clean-up and recovery of spills of non-persistent oils. • Pays claims by Fisherman for lost economic opportunities. <p>1996 International Hazardous and Noxious Substance Convention⁸⁸</p> <ul style="list-style-type: none"> • Ship-owners liable up to \$128 million • \$320 million available in compensation to victims of 	<p>WCMRC/BCO</p> <ul style="list-style-type: none"> • Will respond to spills of non-persistent oils. • Not capable of responding to spills of other hazardous materials. <p>CEDA - CERT</p> <ul style="list-style-type: none"> • Private response company located in Vancouver. • Available to for clean-up of spills of hazardous materials and hydrocarbons in marine

⁸⁷ Transport Canada. Hazardous Noxious Substance Program. Available at: <http://www.tc.gc.ca/marinesafety/oep/ers/hns/menu.htm>

⁸⁸ International Maritime Organization. International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS), 1996. Available at: http://www.imo.org/home.asp?topic_id=256&doc_id=665#1

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	Legislation	Funding mechanisms	Programs
		<p>accidents involving the transport of hazardous and noxious substances.</p> <ul style="list-style-type: none"> Also covers the risks of fire and explosion, including loss of life, personal injury and damage to property. 	environments.
Remediation	<p>CSA</p> <ul style="list-style-type: none"> Section 181(4) defines a response operation and includes: recovery, dispersal or destruction of the pollutant, shoreline mitigation and restoration as a part of the response process. The extent of remediation, however, is not specified. 	<p>SSOPF</p> <ul style="list-style-type: none"> Pays claims for costs and expenses incurred through the remediation of oil pollution damages caused by non-persistent oil . <p>EC's Environmental Damages Fund⁸⁹</p> <ul style="list-style-type: none"> Provides funding for restoration of damages to natural resources caused by pollution. Penalties and settlements under federal environmental legislation (e.g., CSA, Migratory Birds Act, CEPA) can be directed into the fund. Fund is national in scope, but projects are chosen on a regional basis. 	<p>CEDA</p> <ul style="list-style-type: none"> Available for the remediation of spills of hazardous materials and hydrocarbons in marine environments.

⁸⁹ Environment Canada. Environmental Damages Fund Video. Available at: http://www.ns.ec.gc.ca/edf/video_e.html

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Appendix D. Revenue Analysis for a Terrestrial Spill Response Fund

Table A5. Potential revenues derived from a tax on exports and imports of hazardous materials in BC.

		Total in CAD\$	Levy (0.7%)⁹⁰
Exports ⁹¹	Metallics and mineral products	\$340,000,000	\$238,000.00
	Energy Products	\$6,455,000,000	\$4,518,500.00
	Chemical and Chemical Products	\$678,000,000	\$474,600.00
Imports (Select Imports from all countries into BC In 2007)	Chemical manufacturing NAICS 325	\$1,431,927,844	\$1,002,349.49
	Other Basic Inorganic Chemical Manufacturing NAICS 32518	\$187,461,064	\$131,222.74
	NAICS 32519 - Other Basic Organic Chemical Manufacturing	\$227,930,383	\$159,551.27
	NAICS 3253 - Pesticide, Fertilizer and Other Agricultural Chemical Manufacturing	\$70,932,749	\$49,652.92
	NAICS 325510 - Paint and Coating Manufacturing	\$57,553,294	\$40,287.31
	NAICS 3259 - Other Chemical Product Manufacturing	\$215,621,409	\$150,934.99
	Total	\$9,664,426,743	\$6,765,098.72

⁹⁰ Based on rates used in Washington State Toxics Control Tax

⁹¹ BC statistics. < BC stats http://www.bcstats.gov.bc.ca/pubs/exp/exp_ann.pdf

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Table A6. Potential revenues derived from a tax on transmission of oil and natural gas in BC.

Pipeline	Commodity	Route	Throughput	Levy (\$0.94/m ³ oil, \$0.47/1000m ³ gas) ⁹²
Transcanada Corp ⁹³	Natural Gas	Caroline, AB, through Crowsnest Pass to Idaho	3.8 bcf/d (2006)	\$18,366,352.80
Kinder Morgan Transmountain pipeline ⁹⁴	Crude/Refined Petroleum	Edmonton, AB via Kamloops to Burnaby, BC, and via Sumas to refineries in the Washington State, Puget Sound area.	260,000 bpd (2007) (In 2009 capacity will be 360,000 bpd)	\$14,182,620.11
Pembina Pipeline ⁹⁵	Oil and liquid natural gas	Gathering system upstream of Taylor, BC, Pembina's BC transportation hub, and the Western system, which delivers product to the Prince George refinery and to Kamloops for transmission to the west coast.	32,300 bpd (2006)	\$1,761,917.81
Enbridge Inc. Gateway (proposed) ⁹⁶	Oil / Condensate	Kitimat BC to Strathcona County, AB.	Oil 400,000 bpd Condensate 150,000 bpd	\$21,8419,415 \$8,182,280
Potential Annual Revenue				\$64,312,587

⁹² Based on levy amounts charged under the OGC Orphan Site Fund.

⁹³ <http://www.transcanada.com/Foothills/>

⁹⁴ http://www.tmxproject.com/data/2/rec_docs/498_TMPL.pdf

⁹⁵ <http://www.pembina.com/>

⁹⁶ <http://cnrp.ccnmatthews.com/client/enbridge/releaseen.jsp>