

**Consolidated
Environmental
Management
Plan for
Burrard Inlet**

**Tracking Report
2009**



Burrard Inlet
Environmental
Action
Program

Burrard Inlet

Burrard Inlet

Drainage Basin — 97,800 ha
The drainage basin for Burrard Inlet spans a significant upland area. While most of the upland is in a natural state, the land base available for urban expansion is laced with many streams that provide fish and wildlife habitat.

False Creek — 77 ha
This is the smallest waterbody in the City of Vancouver. The False Creek shoreline is highly developed and the water body is heavily used by recreational boaters.

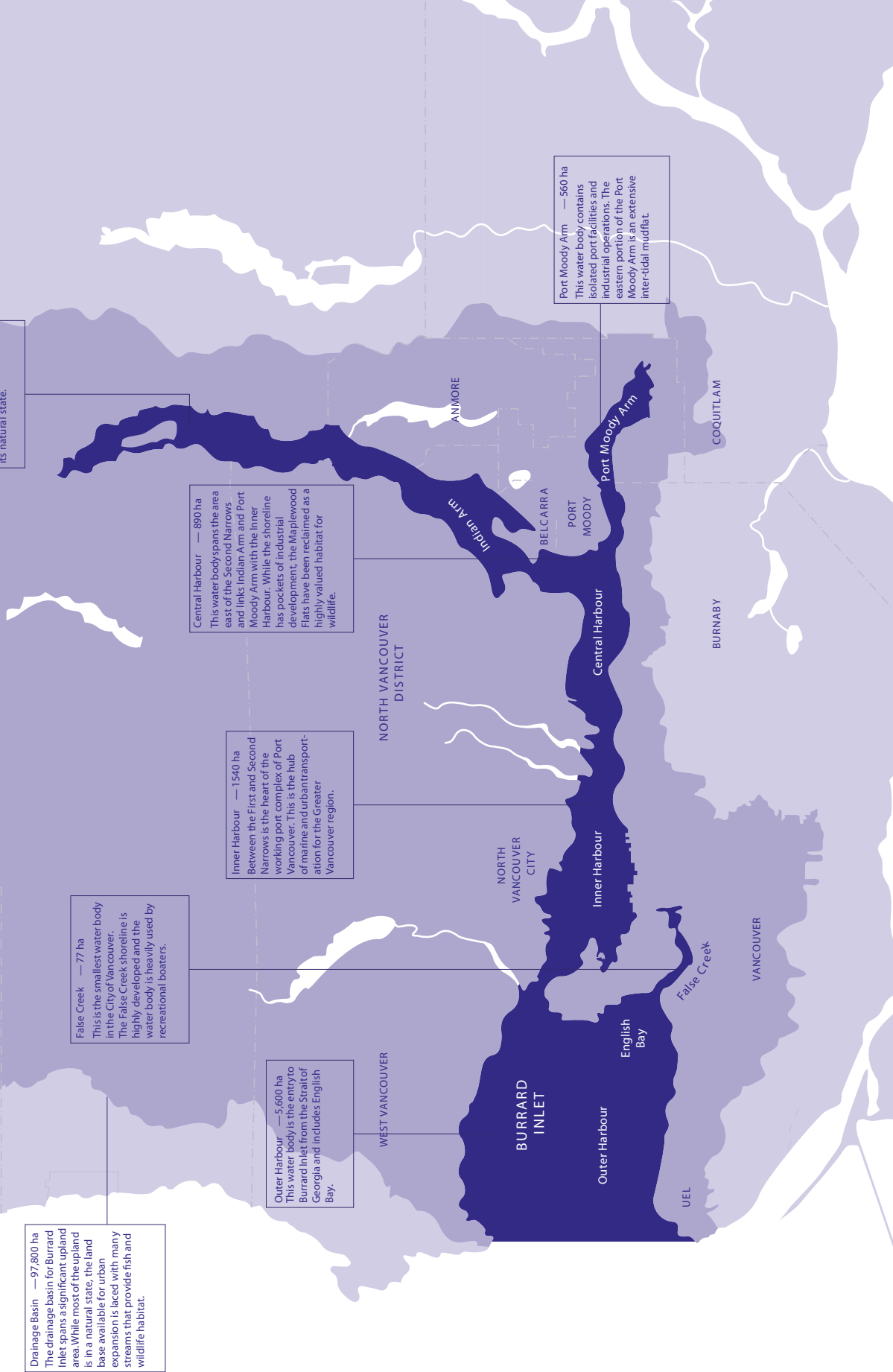
Outer Harbour — 5,600 ha
This water body is the entry to Burrard Inlet from the Strait of Georgia and includes English Bay.

Inner Harbour — 1,540 ha
Between the First and Second Narrows is the heart of the working port complex of Port Vancouver. This is the hub of marine and urban transportation for the Greater Vancouver region.

Central Harbour — 890 ha
This water body spans the area east of the Second Narrows and links Indian Arm and Port Moody Arm with the Inner Harbour. While the shoreline has pockets of industrial development, the Maplewood Flats have been reclaimed as a highly valued habitat for wildlife.

Indian Arm — 2,670 ha
This deep water fjord is fed by the Indian River watershed. Indian Arm is surrounded by parkland and is essentially in its natural state.

Port Moody Arm — 560 ha
This water body contains isolated port facilities and industrial operations. The eastern portion of the Port Moody Arm is an extensive intertidal mudflat.



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Over the Years

Table 1 **CEMP Actions Reported by Year**

Action Item	2004	2005	2006	2007	2008	2009
1.1			•	•	•	•
1.2	•	•	•	•	•	•
1.3				•		
1.4	•	•	•	•	•	•
1.5	•	•			•	•
1.6	•	•	•		•	•
2.1			•			
2.2		•		•		•
2.3						
2.4					•	•
3.1			•		•	•
3.2				•	•	•
3.3					•	•
4.1		•	•	•	•	•
4.2	•			•	•	•
4.3*						
4.4	•		•			
4.5		•			•	•
4.6	•	•			•	•
4.7	•		•			
4.8	•				•	•

The table above shows when reports were submitted for each of the CEMP Actions between 2004 and 2009. The '•' symbol indicates reporting was received by BIEAP for that year.

* Technical challenges with marine habitat banking, resource limitations and conflicting priorities have prevented Port Metro Vancouver and Fisheries and Oceans Canada (a necessary partner in the initiative) from implementing Action 4.3 to date. However, since the habitat provisions of the Fisheries Act apply to development in Burrard Inlet, this delay in implementing Action 4.3 has not resulted in net loss of fish habitat. Port Metro Vancouver remains committed to the creation of a habitat bank within Burrard Inlet and is making this a priority for 2010.

Introduction

The Consolidated Environmental Management Plan (CEMP) for Burrard Inlet was approved by the BIEAP partners in 2002, and contains 21 action items to achieve four shared goals:

Goal #1 Improve water quality in Burrard Inlet

Goal #2 Minimize the effects of contaminated soils and sediments on human and ecological health

Goal #3 Maintain and enhance productive fish and wildlife habitat and the natural biodiversity of Burrard Inlet

Goal #4 Encourage human and economic development activities that enhance the environmental quality of Burrard Inlet

These four goals are also grouped under three themes:

Water Quality/Waste Management & Air Quality;

Historically Contaminated Lands and Sediments; and

Healthy Ecosystems and Biodiversity.

In support of the goals, 21 action items are identified as follows:

Goal #1 Improve water quality in Burrard Inlet.

- 1.1 Continue to coordinate the management of liquid waste in Burrard Inlet.
- 1.2 Develop and implement a coordinated ambient water quality monitoring program in Burrard Inlet.
- 1.3 Review and make recommendations on the provincial permit discharge standards for industrial wastes.
- 1.4 Share information and contribute to the effort to eliminate non-point source pollution in Burrard Inlet.
- 1.5 Develop and enhance Industrial Best Management Practices (BMPs) and strengthen partnerships with the industrial sector.
- 1.6 Share information and explore ways how BIEAP could contribute to air quality initiatives in the region.

Goal #2 Minimize the effects of contaminated soils and sediments on human and ecological health.

- 2.1 Develop and implement a risk-based sediment management plan for False Creek.
- 2.2 Develop a database to monitor historically contaminated lands and sediments in Burrard Inlet.
- 2.3 Develop risk-based sediment management plans for historically contaminated areas of Burrard Inlet as required.
- 2.4 Make use of global research efforts to provide management options for contaminated lands and sediments.

Goal #3 Maintain and enhance productive fish and wildlife habitat and the natural biodiversity of Burrard Inlet.

- 3.1 Confirm and acknowledge existing “protected” areas in Burrard Inlet.
- 3.2 Assist the Greater Vancouver Biodiversity Conservation Strategy by identifying areas of ecological significance in Burrard Inlet for future protection and enhancement.
- 3.3 Use legislative tools such as Marine Protected Areas, Wildlife Management Areas and ecological corridors to protect and enhance valuable areas in the Burrard Inlet ecosystem.

Goal #4 Encourage human activities and economic development activities that enhance the environmental quality of Burrard Inlet.

- 4.1 Provide information and resources to all municipal, regional and port planning initiatives along the shoreline and in adjoining watersheds.
- 4.2 Coordinate and provide support and technical expertise to stewardship and community stakeholder groups in their efforts to improve the environment.
- 4.3 Identify areas for habitat compensation banking.
- 4.4 Develop environmental guidelines for recreation access, and park development and maintenance.
- 4.5 Update and promote the BIEAP Shoreline Development Guidelines.
- 4.6 Develop pilot projects in cooperation with the public and private sectors to showcase innovative environmentally sensitive designs.
- 4.7 Develop an inventory of archeologically significant sites.
- 4.8 Explore and develop models to deal with the cumulative effects of development within Burrard Inlet.

In addition to the above, the CEMP identifies:

Six sub-basins within Burrard Inlet and describes partnership actions for each sub-basin. The 6 sub-basins are the Outer Harbour, False Creek, Inner Harbour, Central Harbour, Port Moody Arm and Indian Arm. For a map of the BIEAP area of interest, see the inside cover of this document or visit our website at www.bieapfrempp.org/maps.html.

Stakeholders include community groups, First Nations, municipal governments, and agencies within regional government, provincial government and federal government.

The CEMP is documented in a second print issued in November 2002 (BIEAP, 2002).



PHOTOGRAPH: SARAH LAMAGNA

Report Outline

The CEMP contains a commitment towards an annual reporting system, namely, that BIEAP will institute an annual public reporting system on the work achieved through the partnership. The *CEMP Tracking Report* is part of annual progress-reporting; which is also achieved via BIEAP-FREMP Annual Reports.

The BIEAP Plan Implementation Committee (PIC) guides Plan implementation and consists of representatives from the BIEAP partner agencies, First Nations and surrounding municipalities: Environment Canada (EC), Fisheries and Oceans Canada (DFO), Port Metro Vancouver (PMV), BC Ministry of Environment (MOE), Metro Vancouver (MV), City of Burnaby (COB), City of North Vancouver (CNV), City of Port Moody (CPM), City of Vancouver (COV), District of North Vancouver (DNV), District of West Vancouver (DWV), Squamish First Nation (SFN), Musqueam First Nation (MFN), Tsleil-Waututh Nation (TWN), Village of Anmore (VOA), and Village of Belcarra (VOB).

Information was gathered from a number of the stakeholders in the period September 2009–April 2010, and focused on ongoing and future projects related to progress on the selected Actions. Where information was gathered in 2008 for the same action, an update was obtained. Table 3 outlines the CEMP actions whose implementation was tracked for this report, and those who provided information.

Table 2 **Acronyms Used in this Report for CEMP Stakeholders**

Acronym	Organization
BIEAP	Burrard Inlet Environmental Action Program
COB	City of Burnaby
CNV	City of North Vancouver
COV	City of Vancouver
CPM	City of Port Moody
DFO	Fisheries and Oceans Canada
DNV	District of North Vancouver
DWV	District of West Vancouver
EC	Environment Canada
MOE	BC Ministry of Environment
MV	Metro Vancouver
PMV	Port Metro Vancouver

Table 3 **CEMP Actions Included in this Report**

CEMP Action Item	Stakeholders providing input into the 2009 CEMP Tracking Report
1.1 Continue to coordinate the management of liquid waste in Burrard Inlet.	BIEAP, EC, DFO, MV, MOE, PMV
1.2 Develop and implement a coordinated ambient water quality monitoring program in Burrard Inlet.	DNV, MV, MOE
1.4 Share information and contribute to the effort to eliminate non-point source pollution in Burrard Inlet.	BIEAP, COB, CPM, COV, DNV, DFO, MV, MOE, PMV
1.5 Develop and enhance Industrial Best Management Practices (BMPs) and strengthen partnerships with the industrial sector.	COB, DNV, MV, MOE, PMV
1.6 Share information and explore ways how BIEAP could contribute to air quality initiatives in the region.	COB, DNV, EC, MV, MOE, PMV
2.2 Develop a database to monitor historically contaminated lands and sediments in Burrard Inlet.	PMV
2.4 Make use of global research efforts to provide management options for contaminated lands and sediments.	PMV
3.1 Confirm and acknowledge existing “protected” areas in Burrard Inlet.	COB, EC, DFO, MV, PMV
3.2 Assist the Greater Vancouver Biodiversity Conservation Strategy by identifying areas of ecological significance in Burrard Inlet for future protection and enhancement.	BIEAP, COB, CPM, COV, DNV, EC, DFO, MV, MOE, PMV
3.3 Use legislative tools such as Marine Protected Areas, Wildlife Management Areas and ecological corridors to protect and enhance valuable areas in the Burrard Inlet ecosystem.	CPM, DNV, DFO, PMV
4.1 Provide information and resources to all municipal, regional and port planning activities along the shoreline and in adjoining watersheds.	CPM, COV, DNV, DFO, MV, PMV
4.2 Coordinate and provide support and technical expertise to stewardship and community stakeholder groups in their efforts to improve the environment.	COB, CPM, COV, DNV, EC, DFO, MV, PMV
4.5 Update and promote the BIEAP Shoreline Development Guidelines.	DFO
4.6 Develop pilot projects in cooperation with the public and private sectors to showcase innovative environmentally sensitive designs.	COB, DFO, MV
4.8 Explore and develop models to deal with the cumulative effects of development within Burrard Inlet.	BIEAP, DNV, MV, MOE



PHOTOGRAPH: STEPHEN MEESE

Progress Reported

The information gathered for this report is summarized below.

CEMP Action 1.1

Continue to coordinate the management of liquid waste in Burrard Inlet.

BIEAP	Burrard Inlet Environmental Action Program	1.1
<p>In May 2009, BIEAP coordinated a workshop to review and discuss the 2009 Draft Liquid Waste Management Plan. A summary of recommendations stemming from the workshop was compiled and presented to Metro Vancouver for consideration.</p>		
EC	Environment Canada	1.1
<p>Although not directly linked to the LWMP process, EC is developing national regulations under the Fisheries Act for municipal wastewater effluents which will require upgrades to existing treatment facilities.</p>		
DFO	Fisheries and Oceans Canada	1.1
<p>Fisheries and Oceans Canada continues to participate in the Stormwater Interagency Liaison Group (SILG) and continues to work with municipalities to develop Integrated Stormwater Management Plans.</p>		
MV	Metro Vancouver	1.1
<p>Metro Vancouver is in its final stages of updating its 2001 Liquid Waste Management Plan (LWMP), the document that guides liquid waste programs and services in the region. The LWMP includes several new initiatives including an emphasis on integrated resource recovery – specifically the recovery of energy and materials from the waste stream. The plan is expected to be complete in 2010.</p> <p>Metro Vancouver has assessed the priority for upgrading the Lions Gate and Iona Island Wastewater Treatment Plants following the procedure in the Canadian Council of Ministers of the Environment (CCME) Municipal Wastewater Effluent Strategy. Based on this assessment, it has been indicated that Lions Gate should proceed within a 10 year timeframe and Iona Island should proceed within a 20 year timeframe.</p>		
MOE	Ministry of Environment	1.1
<p>The Ministry of Environment continues to work with Metro Vancouver on regional wastewater and with member municipalities on municipal stormwater through the Metro Vancouver Liquid Waste Management Plan. As well, the Ministry administers effluent discharge permits for various industries bordering Burrard Inlet. MOE is currently working with BIEAP partners on updating the Point Source Discharge Inventory for Burrard Inlet which will include limited data and locations of effluent waste discharges, municipal waste discharges and municipal stormwater outfalls.</p>		

PMV	Port Metro Vancouver	1.1
<p>Port Metro Vancouver has no direct role in the management of liquid waste in Burrard Inlet. However, the Port Authorities Operations Regulations prohibit discharges that will or are likely to adversely affect water quality unless otherwise authorized by the Port Authority. Port Metro Vancouver does not authorize such discharges to Burrard Inlet unless a BIEAP partner with an appropriate mandate has provided favourable comments or unless the discharge for which an authorization has been requested is of a type that has been previously reviewed with BIEAP partner input.</p>		

CEMP Action 1.2

Develop and implement a coordinated ambient water quality monitoring program in Burrard Inlet.

DNV	District of North Vancouver	1.2
<p>The District of North Vancouver completed a water quality study in Deep Cove that identified the presence of fecal coliform, partly due to upstream contamination of the creeks that flow into the area. The final report will be completed in 2009. Additional studies of fecal coliform contamination on select creeks were also completed. Fecal coliforms were speciated and canines identified as a major source.</p>		

MV	Metro Vancouver	1.2
<p>Metro Vancouver initiated its Burrard Inlet Ambient Monitoring Program in 2004. The initial study undertaken was a compilation of existing data available for the inlet. In 2006, Metro Vancouver developed a Burrard Inlet Ambient Monitoring Strategy to allow the assessment of ambient conditions through water, sediment, fish health and fish tissue chemistry (biota) monitoring in the Outer Harbour, Inner Harbour, Central Harbour, Port Moody Arm and Indian Arm. Water column samples are to be collected yearly, with sediment collected every 2 years, and biota every three years. In 2007, 2008 and 2009 water column samples were collected in October/November and biota samples were collected in September/November of 2007. Reports have been completed for the 2007 water and biota monitoring and the 2008 water column monitoring. In March/April 2008, sediment monitoring was conducted and the report has been finalized. Water and sediment samples will be collected in 2010 and biota samples in 2011.</p>		

MOE	Ministry of Environment	1.2
<p>The Ministry of Environment carries out the Water Quality Objectives Attainment Program in Burrard Inlet as funding is available. This data collection is conducted in coordination with Metro Vancouver's Ambient Monitoring program. In addition, as information becomes available from the updated Point Source Discharge Inventory, the Ministry may investigate additional initiatives that may lead to a better understanding of where mitigation, if necessary, is needed.</p>		

CEMP Action 1.4

Share information and contribute to the effort to eliminate non-point source (NPS) pollution in Burrard Inlet.

BIEAP	Burrard Inlet Environmental Action Program	1.4
<p>BIEAP continues work on an initiative to protect storm drainage systems, watercourses and water bodies in the Metro Vancouver region. In 2008, a series of educational products were produced to educate businesses and the public on methods to eliminate non-point source pollution in the watershed that drains to Burrard Inlet. Building on that work, BIEAP performed outreach to target audiences in order to determine the most effective vehicle to deliver the information to achieve maximum results. An overall understanding of common barriers and incentives was established and the bulletins will be released in 2010. They may also be used by local governments as attachments/business license advisories to various business categories at risk of causing storm drain contamination.</p>		
COB	City of Burnaby	1.4
<p>Burnaby's program of Combined Sewage Overflow (CSO) separation in North Burnaby is ongoing. The CSO separation program ensures that sewage will not enter the storm water system, or waterways untreated.</p> <p>The Pesticide Use Bylaw was adopted in 2008 and regulates the use of pesticides for cosmetic purposes on both public and private lands within the City of Burnaby.</p> <p>The City, in cooperation with the Department of Fisheries and Oceans facilitates a storm drain marking program in which community members mark yellow fish on drains and distribute educational material to remind residents that all storm drains lead to fish habitat in the Burrard Inlet, the Fraser River, and local watercourses.</p>		
CNV	City of North Vancouver	1.4
<p>The City adopted a cosmetic pesticide use control bylaw, effective January 1, 2010, restricting the use of pesticides on residential properties. The City continues to partner with the Districts of North Vancouver and West Vancouver and the North Shore Recycling Program in the Garden Smart education program (www.gardensmart.ca) which emphasizes sustainable gardening practices.</p> <p>The City continues to add new rain gardens to its inventory to improve stormwater quality. The Wagg Park stormwater improvement project is now complete. The project involved excavation of the pond to increase its stormwater capacity, an adjacent bioswale, wetland vegetation, and a viewing platform along the shore.</p>		
CPM	City of Port Moody	1.4
<p>The City of Port Moody has partnered with Fisheries and Oceans Canada to design and install a bioswale in Rocky Point Park parking lot. The bioswale will be installed in early 2010 and is designed to treat first flush runoff from a parking lot.</p>		

COV	City of Vancouver	1.4
<p>The City of Vancouver continues with the combined sewer main and building separation program with the goal to eliminate all combined sewer overflows by 2050.</p> <p>The City of Vancouver and Metro Vancouver are jointly proceeding with the “Greening” of the English Bay Interceptor. As part of this project, the Jervis Pump Station forcemain is currently being redirected from the English Bay Interceptor to the 8th Avenue Interceptor. This involves constructing a new forcemain pipeline as well as a new sewer tunnel from 4th Avenue to 8th Avenue. This portion of the project is expected to be complete in 2010 which will reduce combined sewer overflows into Burrard Inlet.</p> <p>A rainwater management study is being undertaken in the City’s combined sewer areas as well as the separated sewer areas to look at the effects of runoff in highly urbanized areas. It will also look at potential BMPs to deal with runoff contaminants. This study is expected to be completed by 2014.</p> <p>The City is also developing plans to divert stormwater through Tatlow Creek to restore this drainage course and improve stormwater quality flowing into English Bay. Separation of the upstream main sewer system continues which will facilitate this project.</p>		

DNV	District of North Vancouver	1.4
<p>The Pesticide Use Bylaw was adopted in 2009 and regulates the use of pesticides for cosmetic purposes on both public and private lands within the District.</p> <p>The District has participated with the tree canopy interception study with University of British Columbia graduate students. A unique rainfall interception device was designed with staff and installed under several tree canopies to determine tree canopy rainfall interception. The results of this study will be incorporated into the ‘Water Balance Model’ (2011) for use by member municipalities to quantify the benefits of the urban tree canopy as part of strategies to integrate rainwater management into development.</p>		

DFO	Fisheries and Oceans Canada	1.4
<p>Fisheries and Oceans Canada participates in the Stormwater Interagency Liaison Group (SILG) which facilitates the coordination and sharing of existing and updated tools and Best Management Practices and education of stakeholders relating to stormwater management.</p>		



PHOTOGRAPH: SARAH LAMAGNA

MV	Metro Vancouver	1.4
<p>Metro Vancouver has been working with the Canadian Standards Association (CSA) to explore the idea of national standards for green infrastructure. In 2009, Metro Vancouver and the CSA are conducting workshops on stormwater management and infiltration infrastructure.</p> <p>In 2009, Metro Vancouver and its member municipalities are completing an extensive update to the 2001 Liquid Waste Management Plan. New regional stormwater (rainwater) and wet weather overflow initiatives are proposed in the updated Plan. Once the initiatives are approved and the Plan is in place, the Stormwater Interagency Liaison Group (SILG) will assess the most appropriate method to implement and complete the rainwater initiatives.</p> <p>The tree canopy interception study is continuing with University of British Columbia graduate students. The results of this study will be used by all member municipalities to quantify the benefits of the urban tree canopy.</p> <p>The website www.waterbucket.ca/rm (which SILG was instrumental in creating) continues to provide success stories for rainwater management initiatives within Metro Vancouver and other jurisdictions.</p>		
MOE	Ministry of Environment	1.4
<p>The Ministry participates with member municipalities on the Stormwater Interagency Liaison Group (SILG) and through their Integrated Stormwater Management Plans to address stormwater issues. Current stormwater monitoring projects are underway with the Cities of Abbotsford and Coquitlam. The Ministry is currently investigating approaches to a more direct role on non-point source runoff issues and municipal requirements under the LWMP to address stormwater.</p> <p>In addition, the MOE introduced a “Living Water Smart” initiative in 2008. www.livingwatersmart.ca/actions.html</p> <p>The Ministry of Community Development provides guidance to municipalities on stormwater infrastructure and green communities initiatives: www.cd.gov.bc.ca/lgd/environment/stormwater.htm www.cd.gov.bc.ca/lgd/pathfinder-greencommunities.htm</p>		
PMV	Port Metro Vancouver	1.4
<p>Port Metro Vancouver participates in efforts to eliminate non-point source pollution in Burrard Inlet. For instance, the Port uses its project and environmental review processes to promote continuous improvement in stormwater management.</p>		



PHOTOGRAPH: MARK SKERBINEK

CEMP Action 1.5

Develop and enhance Industrial Best Management Practices (BMPs) and strengthen partnerships with the industrial sector.

COB	City of Burnaby	1.5
<p>Over the years, the City of Burnaby has cultivated close ties, and open communication with industrial businesses along the Inlet. Any new development or proposed works on industrial properties is reviewed by staff, and in the case of petro-chemical industries, by Council.</p>		
DNV	District of North Vancouver	1.5
<p>In collaboration with Legacy North Shore (a non-profit society established to foster broad-based and informed citizen engagement in support of a sustainable future for the North Shore) DNV is expanding on the Cool North Shore project by targeting businesses and industries and encouraging a reduction in energy demand and GHG emissions.</p>		
MV	Metro Vancouver	1.5
<p>Metro Vancouver’s Sustainable Business Services (SBS) is working with Regulations and Enforcement to develop and promote “Codes of Performance” for the proper disposal of amalgam by the dental industry and the proper disposal of oil and grease by the food service industry. SBS has also been involved in industry awareness outreach activities addressing once through cooling water including assisting in the development of a draft model bylaw for municipalities in association with Regional Utility Planning.</p>		
MOE	Ministry of Environment	1.5
<p>MOE has recently completed or amended several Codes of Practice and Regulations by industrial sector under the Environmental Management Act. See: www.env.gov.bc.ca/main/divisions.html#epd</p> <p>As well, the Ministry of Environment continues to administer the authorization process associated with discharges to the environment. This includes pesticide and waste management plans; permits; licenses and approvals.</p>		



PMV	Port Metro Vancouver	1.5
<p>Port Metro Vancouver has continued working with its industrial tenants and port users to strengthen partnerships and increase awareness and understanding of environmental issues within its jurisdiction. For instance, it hosts periodic, issue-specific seminars for tenant “environmental managers” to build relationships and foster information exchange (recent session topics include air quality, petroleum storage tanks, and dredging).</p> <p>PMV is also working with industrial tenants and port users, as well as with regulators to address air quality issues (Criteria Air Contaminants and greenhouse gases). Its participation in project review processes (including internal processes capturing tenant projects that don’t meet the criteria for referral to the Burrard Environmental Review Committee) ensure that tenants become familiar with environmental issues stemming from their developments and activities, and applicable mitigations.</p>		

CEMP Action 1.6

Share information and explore ways how BIEAP could contribute to air quality initiatives in the region.

COB	City of Burnaby	1.6
<p>The implementation of the City’s DriveSmart vehicle idling reduction and education program is ongoing. The DriveSmart program aims to increase awareness of the impact of automobile emissions on the environment and promotes the reduction of unnecessary vehicle idling.</p> <p>In 2008, the City upgraded its staff pool car fleet by replacing 22 vehicles with the Honda Fit and Smart Fortwo which are lower emission and fuel consumption vehicles. The City also uses alternative fuels for the vehicle fleet. The sanitation and recycling truck fleet and some heavy duty vehicles operate on B5/B20 biodiesel.</p> <p>The City has also installed Light Emitting Diode (LED) traffic signals and high pressure sodium street lights to reduce overall energy consumption.</p> <p>To promote low-emission transportation, the City has added 19 km to its cycling route network in 2009, for a total of 144 km of marked bike routes around the City. The 2009 Bike Map provides a guide to cycling opportunities within the City and illustrates the type of cycling routes including Urban Trails, Bikeways and Cycle Roads.</p> <p>The City also completed an Energy Fit program in partnership with Honeywell. Energy efficient technologies and infrastructure upgrades were installed within 49 civic buildings and facilities. Improvements included more energy efficient lighting and heating, ventilation and cooling systems and water conservation measures.</p>		

CNV	City of North Vancouver	1.6
<p>The City is implementing a number of initiatives to reduce energy use and emissions and improve air quality, both at a corporate level and on a community-wide basis. The City’s climate action outreach program includes promotion of home energy efficiency assessments along with school programs offered in partnership with the B.C. Sustainable Energy Association and Destination Conservation. The City has formed a corporate Energy Management Team to manage energy and emissions from the City’s corporate operations. Annual reporting for corporate energy and emissions was initiated in 2009. A full summary of all climate action initiatives is available at www.cnv.org/climateaction.</p> <p>The City is also currently updating its Community Climate Action Plan. The updated plan will outline targets, policies, and actions to be incorporated into the City’s Official Community Plan in May 2010.</p>		

DNV	District of North Vancouver	1.6
<p>The District is developing a Corporate Energy and Climate Change Action Plan involving a comprehensive review and retrofit program (underway) for all municipal buildings and infrastructure. The program is part of the efforts to achieve Carbon Neutral operations by 2012. The overall program aims to achieve significant cost and energy savings by improving the efficiencies of buildings, fleet, wastes, water and street lighting.</p> <p>In addition, the District is developing a comprehensive Community Energy and Climate Change Action Plan and will have a significant section and policy directions dedicated to Energy and Climate Change in the new OCP.</p>		



PHOTOGRAPH: KLAAS LINGBEEK-VAN KRANEN

EC	Environment Canada	1.6
<p>The following outlines Environment Canada’s recent work on regional air quality, followed by examples of current projects/programs:</p> <p>Transportation and Fuels</p> <ul style="list-style-type: none"> • Continue efforts that support national clean air priorities related to air emissions from rail, marine, shipping and aviation <ul style="list-style-type: none"> ◦ Coordinate/Chair the BC Locomotive and Rail Air Quality Working Group—a collaborative effort of the rail industry and government to reduce emissions from rail transportation ◦ Demonstrate advanced emission reduction technology in a commuter rail application in the Lower Mainland ◦ Test emissions from an older switching locomotive running on biodiesel • Provide technical expertise through environmental assessment processes <ul style="list-style-type: none"> ◦ provide technical input to environmental assessments to reduce air quality impacts from major transportation infrastructure projects such as the Gateway Program • Explore and advance regulatory mechanisms at the federal level through joint efforts with the provincial government related air pollutants/greenhouse gas emissions in the transportation sector <ul style="list-style-type: none"> ◦ advise/support the provincial Ministry of Environment’s school bus retrofit program <p>Marine and Ports</p> <ul style="list-style-type: none"> • Support national efforts related to development of new international standards for controlling emissions from ships <ul style="list-style-type: none"> ◦ to participate in emissions reduction technology demonstration projects (e.g. seawater scrubbing technology on a cruise ship home-ported in Vancouver) • Support national efforts related to development of new international standards for controlling emissions from ships <ul style="list-style-type: none"> ◦ With the Chamber of Shipping of BC, co-chair the multi-stakeholder BC Marine Vessel Air Quality Work Group <p>Air/Health Effects</p> <ul style="list-style-type: none"> • Explore and implement clean air strategies, programs and partnerships to protect Canadians and their environment from the effects of harmful air pollutants. <ul style="list-style-type: none"> ◦ Participate in the BC Lung Association’s Air Quality & Health Steering Committee to promote the understanding of air/health effects & deliver initiatives throughout BC (including the Lower Mainland) 		
		continued...

EC	Environment Canada (continued)	1.6
<p>Transboundary Air</p> <ul style="list-style-type: none"> • Support national commitments related to Canada-US transboundary air quality <ul style="list-style-type: none"> ◦ With US EPA Region 10, continue the implementation of the Georgia Basin-Puget Sound International Airshed Strategy; this includes initiatives to address agriculture, residential wood combustion, clean vehicles and fuels, and marine/port emissions; ◦ With BC Ministry of Environment, coordinate visibility management efforts of the BC Visibility Coordinating Committee (e.g. planning/implementation of pilot projects in the Lower Fraser Valley transboundary airshed) <p>Continue to implement an integrated approach to managing air pollution and GHG emissions:</p> <ul style="list-style-type: none"> • Analyze ambient air monitoring data • Enhanced visibility monitoring • Research the reactivity of Volatile Organic Compounds • Research the identity of fine particulates • Contribute to the Clean Air Regulatory Agenda Mercury Science Program national surveillance for mercury in fish • Conduct modelling of air quality in the Lower Fraser Valley to inform policy decisions 		
MV	Metro Vancouver	1.6
<p>Metro Vancouver participates in or coordinates a number of committees aimed at sharing information and coordinating activities related to air quality in the region. These include the Lower Fraser Valley Air Quality Coordinating Committee, the Georgia Basin Puget Sound International Airshed Strategy, the BC Lung Association Air Quality and Health Steering Committee, the BC Visibility Coordinating Committee, the BC Marine Vessel Air Quality Working Group and the BC Locomotive and Rail Air Quality Working Group.</p> <p>Metro Vancouver continues to implement the actions included in its current Air Quality Management Plan, adopted in 2005. Key initiatives in 2009 include emission reduction programs for diesel particulate (including non-road engines, rail locomotives, marine vessels, ports and on-road vehicles) and wood smoke, enhancement of the Lower Fraser Valley air quality monitoring network, development of climate change strategies, and a pilot program addressing visibility in the airshed.</p>		
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MV	Metro Vancouver (continued)	1.6
<p>Over the last few years Metro Vancouver has been working together with Port Metro Vancouver, the BC Chamber of Shipping, Environment Canada and other agency partners to collect detailed information about air emission sources in the Burrard Inlet area. In addition to the long-term ambient air quality monitoring network sites that already exist along the Burrard Inlet, Metro Vancouver has set up several temporary ambient air quality monitoring sites to better determine how air quality varies within the Burrard Inlet area, and to assess whether the levels of air pollutants are higher in this area than other locations in Greater Vancouver. This study, called the Burrard Inlet Area Local Air Quality Study (BIALAQS), will last into 2010. More information about BIALAQS is available at:</p> <p>www.metrovancouver.org/services/air/monitoring/Pages/specialstudies.aspx</p> <p>Metro Vancouver has partnered with Environment Canada and Port Metro Vancouver on a consultant study to assess rail yard idling practices in Metro Vancouver and possible mitigation measures. This study will assess idling operational practices of port rail yard operators and develop education/training programs for these small operations, and also examine regulatory and voluntary instruments used in Canada and the US to regulate locomotive operations.</p>		
MOE	Ministry of Environment	1.6
<p>The Ministry of Environment works with Metro Vancouver who is the lead on air quality initiatives in the region including Burrard Inlet. For more info please see: www.env.gov.bc.ca/epd/air/</p>		
PMV	Port Metro Vancouver	1.6
<p>Port Metro Vancouver continues to work toward reducing emissions that contribute to air quality and climate change from vessels, cargo handling equipment, trucks, trains and other port-related sources.</p> <p>In 2009 the following initiatives were underway:</p> <ul style="list-style-type: none"> • Differentiated Harbour Dues Program-encouraging vessels that go beyond requirements to reduce air emissions through reduced fees <ul style="list-style-type: none"> ◦ Continued application to vessels calling Burrard Inlet and Roberts Bank ◦ Planning and development in preparation for rolling the program out to Fraser River starting January 1, 2010 • Container Truck Licensing System Environmental Requirements <ul style="list-style-type: none"> ◦ Opacity and idling limits continue to be in effect ◦ The second round of phasing out older, more polluting trucks was completed bringing the port container truck fleet up to the equivalent particulate matter emissions of 1994 or newer trucks 		
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PMV	Port Metro Vancouver (continued)	1.6
<ul style="list-style-type: none"> • Canada Place Cruise Ship Shore Power Project <ul style="list-style-type: none"> ◦ Shore power was successfully implemented at the east and west berths of Canada Place during the 2009 cruise ship season, allowing equipped vessels to shut down engines while at dock • Rail <ul style="list-style-type: none"> ◦ A number of PMV terminal operators replaced older conventional locomotives with new low emission multi-genset locomotives, including Viterra, Neptune Bulk Terminals and Alliance Grain Terminal • Corporate Emissions <ul style="list-style-type: none"> ◦ PMV completed its first ever corporate emission inventory and greenhouse gas neutral plan ◦ PMV continued to lease a hydrogen internal combustion engine truck fuelled by waste hydrogen as part of the Integrated Waste Hydrogen Utilization Project ◦ PMV continues to lease hybrid pool vehicles • Northwest Ports Clean Air Strategy-developed in collaboration with the Port of Seattle and Port of Tacoma, with support from Environment Canada, U.S. EPA, BC Ministry of Environment, Puget Sound Clean Air Agency and Washington State Department of Ecology. The strategy includes emission reduction performance goals for port-related sources, and represents a cooperative effort amongst the three ports to improve air quality and reduce contributions to climate change in the shared Georgia Basin-Puget Sound airshed <ul style="list-style-type: none"> ◦ PMV, along with the Port of Seattle and Port of Tacoma jointly released the first implementation progress report under the Northwest Ports Clean Air Strategy 		



PHOTOGRAPH: IAN WALKER

CEMP Action 2.2

Develop a database to monitor historically contaminated lands and sediments in Burrard Inlet.

PMV	Port Metro Vancouver	2.2
<p>Under the Canada Marine Act, Port Metro Vancouver is charged with the management of the lands within its proprietary boundaries, including historically contaminated lands. It is engaged in an active program of investigation of untenanted lands and is implementing remediation and risk management efforts where investigation outcomes indicate that these are warranted. Meanwhile, port tenants are required by provisions in their leases to undertake site investigations upon lease commencement and termination and, in most cases, periodically during their tenure of port lands. The outcomes of these investigations are reviewed by Port Metro Vancouver environmental programs staff to ensure that land use does not lead to environmental degradation and to ensure that appropriate mitigations are applied where necessary.</p>		

CEMP Action 2.4

Make use of global research efforts to provide management options for contaminated lands and sediments.

PMV	Port Metro Vancouver	2.4
<p>Port Metro Vancouver searches global research efforts for management options in the context of its land management responsibilities (see Action Item 2.2).</p>		

CEMP Action 3.1

Confirm and acknowledge existing “protected” areas in Burrard Inlet.

COB	City of Burnaby	3.1
<p>The City of Burnaby has an ongoing Parkland Acquisition Program which includes provisions to acquire additional land for conservation areas, ravine parks, and active park land along Burrard Inlet (see Action Item 3.2 for more information).</p> <p>A Barnet Marine Park Master Plan for the core and western portion of Barnet Marine Park is currently under development, which will help shape the future of this park along the shores of Burrard Inlet.</p>		
CNV	City of North Vancouver	3.1
<p>The City of North Vancouver has established Development Permit Areas to regulate development adjacent to riparian areas. Within City boundaries, all significant natural areas are protected as parkland.</p>		

EC	Environment Canada	3.1
<p>Environment Canada has been working with The Nature Trust of British Columbia, Ducks Unlimited Canada, and the BC Ministry of Environment under the auspices of the Conservation Land Forum Land Management Committee to map all Crown, municipal and NGO conservation areas in British Columbia at a cadastral scale. Information will be stored in a database on the Community Mapping Network website (www.cmnbc.ca). The public will be able to query park locations, boundaries and attributes through this website. Mapping information will be used to determine gaps and opportunities for sensitive area protection throughout the province, including those in the Lower Mainland.</p>		
DFO	Fisheries and Oceans Canada	3.1
<p>Fisheries and Oceans Canada continues to ensure the public is aware of the presence of Rockfish Conservation Areas in Burrard Inlet.</p>		
MV	Metro Vancouver	3.1
<p>Metro Vancouver has established 5 regional parks and greenways in the CEMP study area including Thwaytes Landing Regional Park, Belcarra Regional Park, Seymour River Regional Greenway, Capilano River Regional Park, and Pacific Spirit Regional Park. MV continues to work in partnership with municipal partners to establish protected areas on Burrard Inlet wherever possible.</p>		
PMV	Port Metro Vancouver	3.1
<p>Port Metro Vancouver confirms and acknowledges the existing protected areas within its proprietary jurisdiction, which includes Burrard Inlet east of the mouth of the Capilano River in North Vancouver.</p>		



PHOTOGRAPH: SARAH LAMAGNA



CEMP Action 3.2

Assist the Greater Vancouver Biodiversity Conservation Strategy by identifying areas of ecological significance in Burrard Inlet for future protection and enhancement.

BCSP	Biodiversity Conservation Strategy Partnership	3.2
<p>The Biodiversity Conservation Strategy Partnership is an initiative under the Georgia Basin Action Plan involving Environment Canada, BC Ministry of Environment, Metro Vancouver, Burrard Inlet Environmental Action Program – Fraser River Estuary Management Program (BIEAP-FREMP), municipalities and conservation groups. The partnership was established in 2001 to evaluate the state of biodiversity through regional mapping and assess the key issues impacting biodiversity in the Metro Vancouver region.</p> <p>In December 2008, the BCSP released the report <i>Strategic Directions for Biodiversity Conservation in the Metro Vancouver Region</i> to provide a framework that better integrates biodiversity into land use policies, plans and programs, supporting regional collaboration and effective conservation efforts on the ground.</p> <p>The report outlines key findings of the Partnership, roles and responsibilities amongst the complex jurisdictional environment and lays out a vision and goals for conserving biodiversity in Metro Vancouver. Based on ten guiding principles, the report also identifies ten Strategic Directions and lists a series of Opportunities for Action to guide implementation. The report is available at: www.metrovancouver.org/planning/development/biodiversity/Pages/default.aspx</p> <p>In April 2009, BIEAP-FREMP hosted the Regional Biodiversity Conservation Forum to promote collaborative implementation of the Strategic Directions and identify next steps.</p>		
BIEAP	Burrard Inlet Environmental Action Program	3.2
<p>With the generous support of Environmental Damages Fund, BIEAP has developed an environmental indicator discussing the status of marine habitat in Burrard Inlet. The first phase of the project involved completing an analysis of shoreline change over time through the use of aerial photography from two different time periods (the 1930's and 2005). The second phase involved developing a Habitat Inventory for Burrard Inlet through aerial photo interpretation and field mapping. During the summer of 2009, BIEAP surveyed the entire foreshore of the inlet from Point Atkinson to Point Grey (excluding Indian Arm) by foot and/or boat and created a comprehensive Geographic Information System (GIS) classifying intertidal substrate and vegetation and recording site specific observations such as invasive species, erosion and overhanging vegetation. BIEAP also recorded the entire shoreline by video and has linked the video to the online GIS. (www.squamish2010.ca/mapguide2010/FREMP/FREMP_frameset.php)</p>		
<p>continued...</p>		

BIEAP	Burrard Inlet Environmental Action Program (continued)	3.2
<p>The final component of the project was to prepare a report summarizing findings and their implications for fish and wildlife habitat in Burrard Inlet. The final report is available to the public and provides important information regarding environmental quality and trends in the inlet. www.bieapfrempp.org/bieap/publications/current.html</p> <p>This project is only the beginning of a community based mapping system for which BIEAP hopes to facilitate continued growth and enhancement of the central database through collaboration with stewardship groups and partnerships dedicated to protecting the ecological integrity of Burrard Inlet.</p>		

COB	City of Burnaby	3.2
<p>Significant portions of natural area within Burrard Inlet are currently protected as Park, most of which are designated as either a Conservation Area or Ravine Park, others classified as Major and District Parksites. The City has also leased shoreline land from Port Metro Vancouver for recreational purposes. Conservation Areas and Ravine Parks are retained in their natural state with limited trail development or public use permitted. Major and District Parks are developed for more active use around natural features such as woodlands, ravines and creeks.</p> <p>Acquisition of parcels to complete these parks and protected areas is ongoing. In 2008, an additional 0.53 acres of land was acquired and dedicated to the Capitol Hill Conservation area. Protected parkland along Burrard Inlet includes:</p> <ul style="list-style-type: none"> • Ravine and Conservation Parks (total 1549.15 Acres, 626.9 Hectares): <ul style="list-style-type: none"> ◦ Capitol Hill Conservation Area = 95.26 Acres (38.55 ha) of which 4.05 Acres (1.64 ha) is designated and used for neighbourhood park purposes – Harbourview Park ◦ Burnaby Mountain Conservation Area = 1,426.55 Acres (577.30 ha) ◦ Montrose Ravine Park = 25.69 Acres (10.40 ha) ◦ Burrard Inlet Conservation Area = 5.7 Acres (2.31 ha) • Major and District Parksites and Recreational Land (total 305.6 Acres, 123.7 ha): <ul style="list-style-type: none"> ◦ Barnet Marine Park = 136.76 Acres (55.35 ha) of which 59.19 Acres (23.95 ha) are tidal lands. In addition, 37.70 Acres (15.26 ha) of Port Metro Vancouver water lot area fronting Barnet Marine Park is presently leased by the City for recreational purposes. ◦ Confederation Park = 101.22 Acres (55.35 ha), of which 52.16 Acres (21.12 ha) is used for active and passive recreation facilities. In addition, 29.93 Acres (12.11 ha) of Port Metro Vancouver water lot area fronting Confederation Park is presently leased by the City for recreational purposes. 		
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COB	City of Burnaby (continued)	3.2
<p>The City of Burnaby is currently developing an Invasive Plant Management and Habitat Restoration Strategy for City-owned parkland. As the first part of this Strategy, a baseline invasive plant survey was completed in November 2009. The inventory identifies and documents the major established and emerging invasive plant species, the degree of infestation, and identifies ecological niches where these invasive plants exist, their plant associations, and potential sources of infestation. This data and analysis will be used to determine priorities for invasive plant species control, ecologically important areas for project work, and strategies for long-term invasive plant management.</p> <p>In 2009, Parks staff received training in invasive plant identification and removal methods. Parks staff are now better equipped to monitor, assess, and control invasive species in Park land. Further training will take place as the Invasive Plant Management and Habitat Restoration Strategy is developed.</p> <p>In 2009, the City adopted an amendment to the Burnaby Zoning Bylaw to permit urban beekeeping under specific regulations within defined residential and agricultural zoning districts as a means of supporting honeybee populations and associated pollination processes within the urban and rural agricultural community.</p>		
CNV	City of North Vancouver	3.2
<p>The majority of significant natural areas within the City are protected. These remnant areas are managed based on ecosystem function and biodiversity conservation objectives. When properties adjacent to environmentally sensitive areas are developed the City investigates opportunities for habitat restoration.</p> <p>The City is initiating a City-wide invasive plant management strategy in 2010.</p>		
CPM	City of Port Moody	3.2
<p>With funding provided by Environmental Damages Fund, the City of Port Moody has partnered with BIEAP, DFO, Port Metro Vancouver, Pacific Wildlife Foundation, Burrard Inlet Marine Enhancement Society, Port Moody Ecological Society, Burk Mountain Naturalists and Vancouver Aquarium to conduct salmonid and non-salmonid fish inventories of Port Moody Arm over a four month period during summer 2010 to determine seasonal use of nearshore habitats.</p>		
COV	City of Vancouver	3.2
<p>During the development of the South-East False Creek lands, Vancouver has created new fish and bird habitat by building a new island just east of the Cambie Street Bridge and a new shoreline east of the island to Science World. This project has created a significant amount of habitat areas adding to the ecosystem in False Creek. This new habitat has been a huge success and resulted in over half a kilometre of herring roe along the shore this year.</p>		

DFO	Fisheries and Oceans Canada	3.2
<p>Fisheries and Oceans Canada identifies areas of ecological significance through its participation in the Burrard Environmental Review Committee (BERC). BERC reviews project proposals for shoreline development and other activities and strives to ensure that adverse effects on areas of ecological significance are avoided or mitigated/compensated.</p>		
DNV	District of North Vancouver	3.2
<p>DNV's Alpine Recreation Study and Trail Classification has identified conservation areas and a recreational management plan will be developed to protect these lands. Trails at Roche Point have been protected for the possible occurrence of the Pacific Water Shrew, and the last vestige and small patch of the "Poor Pocket Moss" has also been protected in Lynn Canyon Park.</p> <p>The District has adopted the "Streamside Protection DPA" and incorporated the DPA into the development review and building permit process to protect riparian areas. The District will complete the "Parks and Open Space Strategic Plan" in 2010. This process will provide several policy statements and direction for the new OCP review that is underway for 2010. The OCP review has also specifically proposed several Policy directions on biodiversity and improving the ecological health of the marine foreshore (Burrard Inlet).</p> <p>Council has established the "Urban Containment Boundary" and has committed to hold and protect the upper mountain area from development. This essentially protects a vast area of all the upper watersheds and keeps them in a natural forested state.</p>		
EC	Environment Canada	3.2
<p>Environment Canada is contributing to the development of the Metro Vancouver Regional Growth Strategy and the Ecological Health Plan. Once developed and implemented, these strategies will ensure ecosystem function. Lastly, Environment Canada is working with Metro Vancouver to update the 1989-1999 wetland inventory. This update will review urban and agricultural encroachment into wetlands between 1999 and 2009 in the lower mainland. This information will support the implementation of Metro Vancouver's Ecological Health Plan.</p>		
MV	Metro Vancouver	3.2
<p>In 2009, Metro Vancouver initiated the development of a Regional Ecological Health Plan (EHP), building from the body of work achieved by the Biodiversity Conservation Strategy Partnership. The EHP, planned for completion in mid 2010, will identify Metro Vancouver's corporate and regional roles in protecting and enhancing ecological health in the region and will identify what key actions other levels of government and agencies could implement. The EHP will:</p>		
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MV	Metro Vancouver (continued)	3.2
<ul style="list-style-type: none"> • refine existing mapping to show both protected and unprotected ecologically important lands; • inform a robust acquisition strategy; • identify fiscal, regulatory, and advocacy tools to support natural asset and protection; • confirm regionally significant ecological corridors that provide key paths for habitat connectivity and enhance the resilience of the region’s natural areas; atural asset protection; • seek to provide an economic framework for valuing the ecological services that our natural areas provide; • provide a set of regional indicators and performance measures so that ecological health can be assessed and monitored over time. <p>Metro Vancouver has included the protection of all endangered wetlands as a strategic goal for the region and has begun working on an inventory of endangered wetlands with other agencies.</p>		

PMV	Port Metro Vancouver	3.2
<p>PMV has comprehensive environmental and project review processes in place that are intended to at least protect existing features and functions in Burrard Inlet.</p>		

CEMP Action 3.3
Use legislative tools such as Marine Protected Areas, Wildlife Management Areas and ecological corridors to protect and enhance valuable areas in the Burrard Inlet ecosystem.

CNV	City of North Vancouver	3.3
<p>The City of North Vancouver has established Development Permit Areas to regulate development adjacent to riparian areas.</p>		
CPM	City of Port Moody	3.3
<p>The City of Port Moody has approached Port Metro Vancouver to explore the designation of Tidal Park as a Marine Protected Area.</p>		

DNV	District of North Vancouver	3.3
<p>The District of North Vancouver has established the Streamside Protection Development Permit Area (DPA) on all streams and will establish four new Hazardous Conditions DPA's for Natural Hazards in 2010. The new Hazardous Conditions will include Debris Flow, Wildfire, Landslide-slopes and Flood Plain.</p>		
DFO	Fisheries and Oceans Canada	3.3
<p>Fisheries and Oceans Canada continues to monitor and enforce fishing restrictions in the Rockfish Conservation Areas in Burrard Inlet.</p>		
PMV	Port Metro Vancouver	3.3
<p>Port Metro Vancouver land managers utilize PMV's land use planning processes and tools like leases and licences of occupation, which specify land use and access, to protect valuable areas in the Burrard Inlet ecosystem. Examples include the Maplewood Conservation Area and the tidal flats at the head of Port Moody Arm.</p>		

CEMP Action 4.1
Provide information and resources to all municipal, regional and port planning initiatives along the shoreline and in adjoining watersheds.

The BIEAP partners are regularly consulted on the development of land use plans around Burrard Inlet. Information about the various initiatives is also shared at the quarterly meetings of the BIEAP Plan Implementation Committee; below is a list of some of the planning initiatives ongoing around the Inlet and its watersheds.

CNV	City of North Vancouver	4.1
<p>The City has begun the process of updating its 2002 Official Community Plan (OCP). The new OCP is expected to be completed in 2011.</p>		
CPM	City of Port Moody	4.1
<p>The City of Port Moody has been working in consultation with the local community to update its Official Community Plan.</p>		
COV	City of Vancouver	4.1
<p>Work is well underway to reduce and eliminate combined sewer overflows at the downtown Burrard Street outfall and the False Creek Crowe Street outfall (in the area of the Olympic Athletes Village). This is being completed through the City of Vancouver's sewer separation program. Combined sewer overflow elimination at the Crowe Street outfall is scheduled by mid 2010 and at the Burrard Street outfall by the end of 2011.</p> <p>The City is close to completing the South East False Creek flats development along the south shore using sustainable practices. This includes a new seawall walkway, green building designs, green roofs, rainwater reuse and stormwater swales and ponds.</p>		

DNV	District of North Vancouver	4.1
<p>The District of North Vancouver will be completing the Indian Arm Development Policy in 2010. The Policy will limit and manage growth in Indian Arm. (See relevant summaries in other sections)</p>		

DFO	Fisheries and Oceans Canada	4.1
<p>Fisheries and Oceans Canada participates in municipal, regional and port planning initiatives along the shoreline and in adjoining watersheds if requested.</p>		

MV	Metro Vancouver	4.1
<p>Metro Vancouver is updating the Regional Growth Strategy and released a draft titled <i>Metro Vancouver 2040: Shaping our Future</i> for municipal and public consultation and feedback in February 2009. A series of consultation activities followed, including: public consultation meetings in all communities throughout the region during the spring of 2009; over 30 presentations and meetings with municipal councils; presentations and meetings with other governments and agencies, business groups, and community groups; and ongoing discussion of the draft strategy at Regional Technical Advisory Committee monthly meetings.</p> <p>Councils and staff across the region have devoted a considerable amount of time to reviewing the document and providing comments. A revised draft of the plan, with significant revisions and changes as a result of this careful scrutiny and many productive discussions, was released in November 2009. Municipalities and the public will be reviewing this latest draft through December and January, with the intent of initiating the formal ratification process early in 2010.</p> <p>Metro Vancouver staff are also involved with the BC Marine Vessel Air Quality Working Group, a government-industry collaboration working on reducing air emission impacts from marine vessels and port operations. The working group is co-chaired by Environment Canada and the Chamber of Shipping of BC and members include Port Metro Vancouver, Metro Vancouver, Transport Canada, BC Ministry of Environment, BC Ministry of Transportation, BC Ministry of Healthy Living and Sport, BC Ferries, First Nations interests and others.</p>		

PMV	Port Metro Vancouver	4.1
<p>Port Metro Vancouver has an active, on-going, comprehensive land use planning process that focuses on both short term (e.g., 10 year) and long term (e.g., up to 40 year) planning horizons. The port amalgamation process has provided impetus to revamp the planning process to ensure consistency throughout the amalgamated jurisdiction, but work continues.</p>		



PHOTOGRAPH: SARAH LAMAGNA



PHOTOGRAPH: SARAH LAMAGNA

CEMP Action 4.2

Coordinate and provide support and technical expertise to stewardship and community stakeholder groups in their efforts to improve the environment.

COB	City of Burnaby	4.2
<p>City staff work with stewardship groups to help host community events and organize fish releases, invasive species removal, native species planting, and environmental education opportunities. The City provides staff support, in-kind contributions, advertising and promotional support, and information to stewardship groups in support of their initiatives. A Stewardship Coordinator is also on staff to liaise with environmental stewardship organizations and provide support to community environmental events.</p> <p>In 2009 the City supported the following activities in the Burrard Inlet area:</p> <ul style="list-style-type: none"> • Chaired and participated in working groups involving stewardship groups and other stakeholders to discuss stormwater and water quality management, such as the Stoney Creek Environmental Working Group, and the UniverCity Watercourse and Stormwater Adaptive Management Committee. • Provided staff support and advertising for the annual Great Canadian Shoreline clean-up at Barnet Marine Park. • Offered free, educational guided kayak trips in Burrard Inlet as part of Environment Week activities. • Coordinated four “Trail Improvement Days” on Burnaby Mountain in cooperation with the Burnaby Mountain Bike Association and Stoney Creek Environmental Working Group. Work included trail repairs, removal of invasive species, and native planting. 		
CNV	City of North Vancouver	4.2
<p>The City liaises with and supports a number of stewardship groups, including the North Shore Streamkeepers, the North Shore Fish and Game Club, the North Shore Black Bear Society, and the Mahon Park Stewards.</p> <p>The North Shore Streamkeepers completed a major restoration project at MacKay Creek, removing a significant amount of Japanese Knotweed. This formed part of the MacKay Creek Community Art Project, which focused on engaging school children and other community members in raising awareness of the sensitive MacKay Creek ecosystem.</p> <p>In April 2009 new grant funding was made available to not for profit groups and societies through the City’s Parks and Environment Grant Program for community-based park and environmental initiatives.</p>		

CPM	City of Port Moody	4.2
<p>The City of Port Moody has partnered with BIEAP, DFO, Port Metro Vancouver, Pacific Wildlife Foundation, Burrard Inlet Marine Enhancement Society, Port Moody Ecological Society, Burk Mountain Naturalists and Vancouver Aquarium to conduct a fisheries inventory of Port Moody Arm in 2010.</p> <p>This project seeks to connect local residents with the urban inlet into which thousands of salmon fry are released every year. A comprehensive community outreach and education campaign will also be engaged to promote sustainable living practices for those residing in the surrounding area.</p> <p>The City of Port Moody also provides support to the Port Moody Ecological Society through sponsorship of the annual Fingerling Festival.</p>		
COV	City of Vancouver	4.2
<p>Vancouver is working with the Spanish Banks streamkeepers group to enhance the water quality in Spanish Banks Creek. This creek has recently been rejuvenated and an increased number of salmon have been returning to the creek. The City has just completed a project to redirect groundwater flows along North West Marine Drive to add cool, clean water to the creek which will enhance the low flows in the summer.</p>		
DNV	District of North Vancouver	4.2
<p>The District of North Vancouver Parks Department continues to coordinate and support a large group of volunteers throughout the year on numerous habitat restoration projects.</p> <p>The 2010 OCP Review has also specifically proposed a Policy direction on expanding and improving Education and Awareness and establishing a community-wide stewardship ethic.</p>		
EC	Environment Canada	4.2
<p>In 2009, Environment Canada hosted the Puget Sound Georgia Basin Ecosystem Conference, The Future of the Salish Sea: A Call to Action. This biennial ecosystem research and policy conference is co-chaired by Environment Canada and the Puget Sound Partnership, a Washington State Agency. The last conference was held on February 8-11, 2009, in Seattle, Washington, and was attended by nearly 1,200 people. Many BIEAP partners attended this conference, which in turn armed them with a solid science and policy platform to address climate change, ecosystem management, land use, and water resource concerns in the Burrard Inlet.</p>		
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EC	Environment Canada	4.2
<p>Engage communities to achieve measurable results:</p> <ul style="list-style-type: none"> • Environment Canada continues to leverage grants and contributions from community funding programs. Projects relate to Environment Canada's four priority areas: clean air, climate change, nature (including biodiversity), and clean water. The following projects were initiated in 2009 and funded in part by the EcoAction program or the Environmental Damages Fund (all located in the lower mainland) <ul style="list-style-type: none"> ◦ High School Climate Challenge: Fourteen schools throughout British Columbia will take part in this program to help educate, inspire and engage students to reduce climate change impacts. This program will use an on-line greenhouse gas audit tool calculator to enter data and produce graphic reports ◦ Be The Change: This program will educate people in various faith communities about sustainability. Participants will be trained to deliver sustainability workshops and mentor others. ◦ Stanley Park's Kids for Conservation Skills Training Project: This child-oriented skills training project focuses on conservation initiatives that enhance ecosystem health and mitigates climate change impacts. The Society provides practical science and technical skills, resources and leadership training to build the capacity of young environmental stewards. ◦ Wetland and Riparian Habitat Restoration at Noons Creek (Port Moody): The Port Moody Ecological Society received funding to restore the Noon Creek wetland after the December 2006 wind storm. Funded activities included: fallen tree removal, wetland deepening, wildlife refuge island construction, and planting of native species. • Manage the Ecological Gifts Program to protect ecologically sensitive lands. <p>Environment Canada is also a member in the Wetland Stewardship Partnership (WSP), a multiagency group dedicated to the conservation of wetlands and other sensitive ecosystems. The WSP is developing a results-oriented strategy entitled <i>A Wetland Action Plan for British Columbia</i>. This action plan will provide information on the status of and threats to wetlands throughout British Columbia, ecological values of wetlands, and goods and services provided by wetlands. The plan will outline specific objectives and actions, and evaluates current conservation initiatives.</p>		



PHOTOGRAPH: SARAH LAMAGNA

DFO	Fisheries and Oceans Canada	4.2
<p>In the Pacific Region, Fisheries and Oceans Canada has a long history of stewardship and community involvement through initiatives such as The Community Involvement Program. The Community Involvement Program brings people from communities throughout the province together to participate in locally-based enhancement efforts. Individual Programs are as follows:</p> <ul style="list-style-type: none"> • Community Advisors (CAs) are the key liaisons between DFO and community-based projects. Each CA supports a number of community projects. For more information about community projects in and around Burrard Inlet visit their website at: www-heb.pac.dfo-mpo.gc.ca/community/dir/hollick_e.htm • The Streamkeepers Program trains and supports citizens in the monitoring, protection and improvement of aquatic habitat. The Streamkeepers program has increased public awareness and involvement at the local level. For more information on the Streamkeepers Program visit the program website at: www.pskf.ca • The Stream to Sea Program utilizes a range of educational material to teach schoolchildren about the value of salmon as a resource. The goal of the program is to foster students and educators in the Pacific Region that are “well-informed on aquatic ecosystems, motivated by a stewardship ethic and contributing to the health and sustainability of their community.” 		
MV	Metro Vancouver	4.2
<p>Metro Vancouver facilitates the Brunette Basin Coordinating Committee (BBCC) which has representation of agency, municipal and stewardship groups. This committee annually reviews initiatives with the Brunette watershed, and coordinates on-the-ground watershed activities. In 2009, a concept plan for a sediment facility on Still Creek was created.</p> <p>Metro Vancouver supports the Stoney Creek Environment Committee and other watershed groups by participating in the Great Salmon Send-off on Stoney Creek. Metro Vancouver also coordinates and provides raw material for in-stream restoration efforts by stewardship groups in the Brunette watershed.</p> <p>Metro Vancouver continues to support the on-going work of the Spanish Bank Streamkeepers and Fisheries and Oceans Canada in monitoring Spanish Bank Creek in Pacific Spirit Regional Park. Metro Vancouver also supports volunteer efforts such as the Wreck Beach Preservation Society, to undertake annual beach clean-up in the fall. MV provides tools, supplies and disposal services. Metro Vancouver supports Fisheries and Oceans Canada in the operation of the Visitors Centre at Capilano Hatchery in Capilano River Regional Park.</p>		
continued...		

MV	Metro Vancouver (continued)	4.2
<p>Metro Vancouver Regional Parks delivered 30 educational (interpretive) programs to 1100 people on stream & forest ecology and beach ecology with a connection to Burrard Inlet in Pacific Spirit and Capilano River in 2009.</p> <p>MV Regional Parks has participated in the Coho Festival organized by the Coho Festival Society in West Vancouver’s Ambleside Park for many years. About 1600 people participated in the Coho Walk portion of the 2009 Coho Festival in September. The walk follows the Capilano River from Cleveland Dam to West Vancouver’s Ambleside Park at the mouth of the Capilano River in Burrard Inlet.</p> <p>2009 marks the fifth year that the Belcarra Beachkeeper Volunteers, under the direction of a Metro Vancouver staff member and support from DFO, have conducted a crab study at Belcarra Regional Park to educate people about environmentally sound beach behaviour, marine harvesting regulations and sea creatures. Beachkeeper volunteers ask people to bring crabs to the measurement station for measuring and data gathering. At the end of the summer, all the information collected is sent to DFO. This is the only study in British Columbia, possibly Canada, which records information on recreational crabbing.</p>		

PMV	Port Metro Vancouver	4.2
<p>Port Metro Vancouver provides support to stewardship and community stakeholder groups through a variety of initiatives, including the “Community Investment Program”, which provides funds directed to “community, education and environment”. The Pacific Salmon Foundation, amongst other groups, benefit from this program. PMV also occasionally provides ad hoc funding for worthy initiatives (e.g., B.C. Spartina Working Group) that provide benefits within PMV areas of interest.</p>		

CEMP Action 4.5

Update and promote the BIEAP Shoreline Development Guidelines.

DFO	Fisheries and Oceans Canada	4.5
<p>Through its participation on BERCC, Fisheries and Oceans Canada ensures that project proponents are provided with a copy of the Guidelines where applicable.</p>		



PHOTOGRAPH: FRANK LEUNG



PHOTOGRAPH: SARAH LAMAGNA

CEMP Action 4.6

Develop pilot projects in cooperation with the public and private sectors to showcase innovative environmentally sensitive designs.

COB	City of Burnaby	4.6
<p>Two new public green buildings opened for operation in 2009: Firehall #7 and the Tommy Douglas Library on Kingsway. Both are striving for Leadership in Energy and Environmental Design (LEED) silver or gold certification, and the buildings include such features as:</p> <ul style="list-style-type: none"> • Energy-efficient lighting • Rainwater collection and re-use • Green roofs • Water-efficient features • Ground-source heat exchange with radiant heating • Use of low CO2 building material • Forest Stewardship Council certified wood for millwork and interior finishes 		
DFO	Fisheries and Oceans Canada	4.6
<p>DFO, as part of SILG, has assisted in the promotion of environmentally sensitive designs with respect to rainwater management which has resulted in projects undertaken by various municipalities.</p>		
MV	Metro Vancouver	4.6
<p>Metro Vancouver's Sustainable Business Services coordinated two half-day workshops for partner municipalities to explore the development of Green Building Codes and Regulations in association with the Cascadia Green Building Council in 2007. Also, MV held six "LEED for contractors" training workshops in 2006, 2007, 2008 and 2009.</p> <p>This is an ongoing outreach initiative.</p>		

CEMP Action 4.8

Explore and develop models to deal with the cumulative effects of development within Burrard Inlet.

BIEAP	Burrard Inlet Environmental Action Program	4.8
<p>In 2009, BIEAP began to update the Point Source Discharge Inventory for Burrard Inlet. Work on the inventory will continue into 2010 and the final report will be released to the public by spring.</p>		

DNV	District of North Vancouver	4.8
<p>The District is developing a comprehensive “Green Building Strategy” that will require new construction to meet several new criteria to improve buildings in respect of energy and water conservation, rainwater management, health and GHG reduction.</p> <p>The District of North Vancouver is also developing the Indian Arm Development Policy which will limit and manage growth in Indian Arm.</p>		
MV	Metro Vancouver	4.8
<p>In 2007 Metro Vancouver initiated the Burrard Inlet Area Local Air Quality Study which is the first in a series of neighbourhood or “local” air quality studies being developed under the regional Air Quality Management Plan. The Burrard Inlet area was selected because of the number and variety of emission sources present, including automobiles, buses, heavy construction equipment, industrial sources, locomotives, marine vessels, port operations, sea buses, small aircraft, and heating. In addition, the population distribution and demographics can lead to higher exposure or sensitivity to the effects of air pollution.</p> <p>The study is intended to determine how air quality varies within the Burrard Inlet area and how it compares to other areas in Metro Vancouver. The study uses a combination of emission source characterization, air quality monitoring and modeling in order to identify areas of elevated pollutant concentrations, and the emission sources which contribute to those elevated exposure levels.</p>		
MOE	Ministry of Environment	4.8
<p>For Burrard Inlet, the Ministry supports Metro Vancouver’s use of their Cautions, Warnings and Triggers approach for assessing water quality impacts and trends. As most water quality concerns in such an intensively used waterbody are cumulative in nature, due to multiple sources and contaminants, a collaborative approach is needed to effectively address them.</p> <p>The Ministry supports the BIEAP Management and PIC Committees to lead such a collaborative approach. For example, the Point Source Discharge Inventory could provide baseline information to further delineate the relative magnitude of waste and stormwater discharges and the associated contaminants of concern into the Inlet. From this information, agencies are better able to collaboratively focus their efforts on where mitigation is needed most. This improves the efficiency and effectiveness of the partner agency mandates and leads to maintaining or improving the natural environment.</p>		



PHOTOGRAPH: STEVE TROLETTI



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