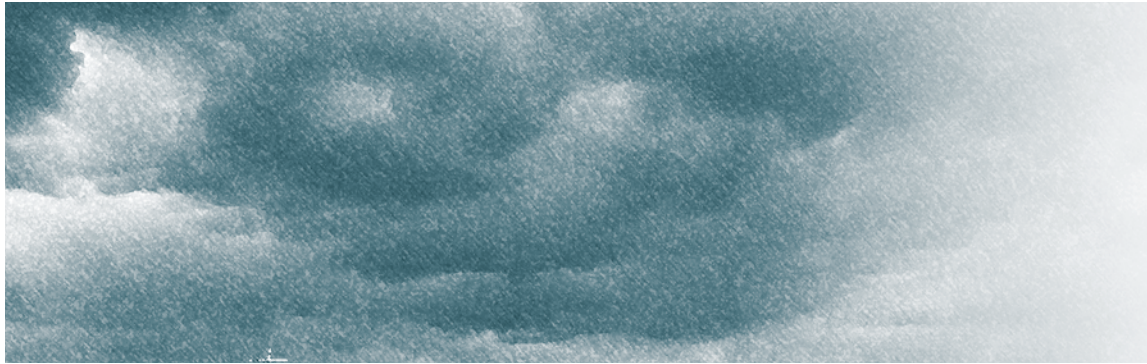




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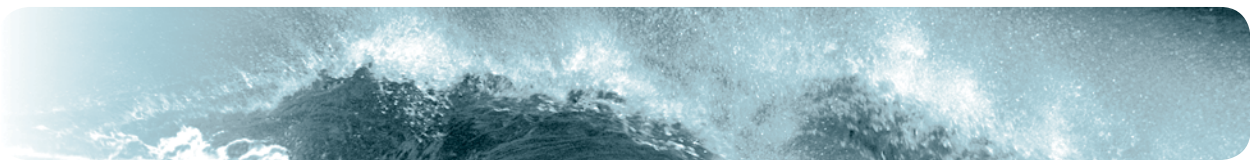
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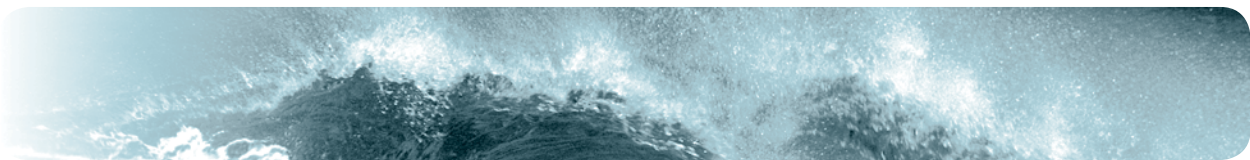


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# Introduction

Transport Canada is committed to promoting a sustainable transportation system — one that is safe and secure, efficient and environmentally responsible. Transport Canada develops and implements programs and policies to protect the natural environment and to achieve a more sustainable transportation system in Canada. Sustainable transportation is a shared responsibility — the Department works with its partners and stakeholders, including the general public, the transportation industry, other federal government departments, provinces, territories and municipalities, as well as international organizations.

In 1995, amendments were made to the *Auditor General Act* that created the post of the Commissioner of the Environment and Sustainable Development and formalized a requirement for ministers to table sustainable development strategies in Parliament. These strategies are updated every three years and reported on annually within the Departmental Performance Report. The 2004–2006 Sustainable Development Strategy brings more precision to the concept of sustainability and sets out targets and performance measures for key sustainable transportation issues. It addresses key federal priorities such as: climate change, clean air, clean water, and research and development.

The Government of Canada announced in 1995 a Greening Government Operations (GGO) policy, which states that all federal departments and agencies must develop environmental management systems.

The Department is also committed to making sustainable development a fundamental principle of policy development, transportation safety regulation and program delivery, and to ensuring that all of its operations are conducted in an environmentally responsible manner through its Environmental Management System (EMS).



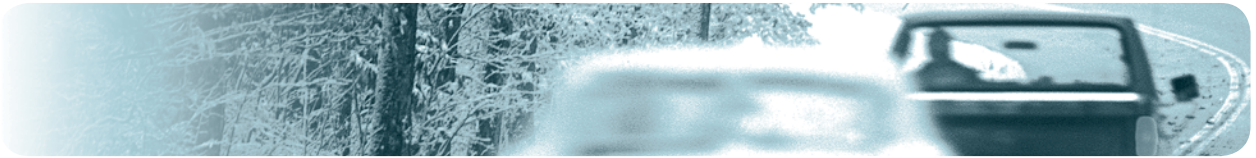


## A. About this Report — Progress in Reporting

This report details ongoing efforts and progress made towards the challenge of environmental stewardship through the development of environmental programs and initiatives. Transport Canada's first Environmental Performance Report (EPR) was developed for the calendar year 1998; as part of the EMS, the report tracked progress towards Transport Canada's EMS targets. The focus of the report was specifically on the Department's operations. By 2000, the scope of the Department's EPR had evolved to include information about environmental programs that promote environmental stewardship within the Department. In 2003, the EPR reporting scheme changed to a fiscal year format.

This year's report has broadened its scope even further and, for the first time, includes environmental programs, activities and initiatives that target the general public and industry (in addition to those focused on departmental operations).

The majority of this report presents an overview of the activities and accomplishments of the Department's Environmental Affairs Directorate and those of the Department's five regional offices. Some achievements are highlighted in shaded boxes throughout the text, shedding light on the unique or otherwise noteworthy work in the regional offices. The report concludes with a summary of the year's work.



## B. About the Environmental Affairs Directorate

The role of the Environmental Affairs Directorate is to implement Transport Canada's commitment to sustainable development. To fulfill its role, the Directorate carries out a number of policy, analysis, program and custodian functions, including:

- » developing policies to promote sustainable transportation and to address climate change in the transportation sector
- » delivering climate change mitigation initiatives
- » managing Transport Canada's programs for remediation of contaminated sites, environmental protection and environmental assessment
- » maintaining property records for the Department
- » reporting on Transport Canada's environmental accomplishments and on the state of the environment in transport

The Environmental Affairs Directorate in headquarters works closely with other branches of Transport Canada, as well as with the Department's five regional offices. Each regional office is staffed with environmental officers who advise their senior management about environmental matters, and manage day-to-day environmental operations and programs in their region.

The Directorate consists of three branches: Environmental Programs, Sustainable Development Policy and Environmental Initiatives — each of which includes a number of divisions. The following three sections of this report describe the work of each branch over the past year; the work of the regional offices is highlighted throughout.



## Environmental Programs Branch

The Environmental Programs Branch is responsible, along with the Department's regional offices, for ensuring that Transport Canada's lands and facilities are managed in an environmentally responsible manner. The Branch promotes compliance with environmental laws and federal government policies in Transport Canada's day-to-day operations, with a strong focus on bringing and maintaining the Department's activities in line with federal policies and best practices. After several years of working to bring its own house in order, the Branch's mandate has broadened and its influence now extends beyond the Department's own lands and facilities. The Branch currently has many operational links to the transportation sector.

Initiatives of the Environmental Programs Branch over 2004/2005 include a wide range of work across a number of areas — including developing and maintaining the Department's environmental management system.

### A. Environmental Management System

The Department's Environmental Management System (EMS) is based on the International Organization for Standardization (ISO) 14001 standard and the federal government's *Guide to Green Government*. Fundamental to successfully integrating environmental considerations into daily decision making, the EMS helps the Department meet its objectives for sustainable development. The goal of the EMS is to produce a framework for continuous monitoring of departmental operations which provides direction to its environmental activities.

#### *About Transport Canada ...*

Transport Canada is responsible for a wide range of operations and approximately 886 properties, including fleets of aircraft and vehicles, as well as stores, warehouses and offices in central and remote sites across the country. Although the Department no longer directly operates many components of the transportation system, it retains the role of landlord and manager for major components of the system, including the National Airports System. In this role, Transport Canada is responsible for ensuring appropriate stewardship of its lands and facilities.





### **A Tailor-Made EMS Audit Protocol**

In 2004/2005, Headquarters reviewed its current EMS audit protocol (adopted from Environment Canada) and determined that a Transport Canada specific audit protocol would better serve the Department's needs. A new protocol, based on the 2004 ISO 14001 standards, was developed and is scheduled to be on Transport Canada's Intranet site by 2006.

### **The 2004–2006 Environmental Management System Framework**

The Department carried out a major review of its EMS manual over the course of 2003/2004 – the revised EMS framework which resulted is included in Transport Canada's 2004–2006 Sustainable Development Strategy. 2004/2005 marks the first year of reporting against the new EMS targets.

Table 1 (page 6-10), sets out the key environmental issues and aspects addressed in the EMS, including objectives and targets for each, and identifies progress against each, along with an indication of the extent to which each target was achieved — complete, or on track in 2004/2005.

**Table 1: Environmental Management System Status Report, 2004/2005**

| Issues and Aspects | Objectives  | Targets   | Status   | Progress Achieved |
|--------------------|---|---|--|-------------------|
| Air Emissions      | To reduce greenhouse gas emissions associated with Transport Canada operations.   | Reduce Transport Canada's greenhouse gas emissions by 4% from 1998/1999 baseline level, by 2006/2007.       | Transportation emissions were reduced by 12% from the 1998/1999 baseline in 2004/2005.   | On track          |
|                    | To reduce exhaust emissions from Transport Canada's fleet vehicles.   | 40% of new vehicle purchases between 2004 and 2006 to be alternative fuel vehicles.                         | 63% of vehicle purchases for 2004/2005 are alternative fuel or hybrids.  | On track          |
|                    | To reduce the amount of energy used at Transport Canada owned and operated facilities.  | A 4% reduction in the amount of energy used at Transport Canada owned and operated facilities.              | A database of Transport Canada facilities was created to help determine the buildings owned and operated by the Department.                    | On track          |
| Land Management    | To assess Transport Canada's suspected contaminated sites.  | To assess Transport Canada's suspected contaminated sites by 2007/2008.                                     | To date, there are 64 suspected sites still to be assessed. 60 sites have been assessed with no action required and 138 are under assessment.  | On track          |
|                    | To actively manage Transport Canada's known contaminated sites by using a risk-based priority approach, in accordance with the Federal Government Approach to Managing Contaminated Land. | During 2004/2005, \$25M will be spent on mitigating high priority contaminated sites.                       | \$20M<br>Transport Canada received \$6.6M from FCSAAP. Thus, Transport Canada spent \$26.2M on addressing its contaminated sites in 2004/2005. | Complete          |
|                    |   | To risk manage/ remediate Transport Canada's known contaminated sites by 2010/2011.                         | To date, 98 sites have been remediated; 18 sites have been remediated and are under risk management; 115 sites are under risk management.      | On track          |
|                    |   | To ensure that risk management plans are in place for all remaining known contaminated sites, by 2010/2011. | 14 risk management plans developed in 2004/2005  | On track          |

| Issues and Aspects                     | Objectives   | Targets   | Status  | Progress Achieved |
|--|--|---|---|-------------------|
| Waste Management — Non-Hazardous Waste | To increase landfill diversion rates at selected Transport Canada facilities.                                    | For facilities that currently have non-hazardous waste recycling, to increase land diversion rates by 5%, by 2005/2006.   | Transport Canada Headquarters' target diversion rate is 80%. Results of the 2004 Headquarters waste audit indicated that a 76% diversion rate was achieved. | On track          |
|  | To increase Transport Canada's employees' awareness of recycling options.  | To assess where new non-hazardous waste recycling programs are warranted at Transport Canada facilities.  | Recycling programs in place at Transport Canada regional offices, facilities and some Transport Canada centres.   | On track          |
| Hazardous Materials Management         | Operate and manage storage tanks using sound environmental management practices.                                 | To ensure 100% compliance with the <i>Canadian Environmental Protection Act</i> (CEPA 1999) Tank Technical Guidelines for Transport Canada owned and operated tanks, on an ongoing basis. | Transport Canada currently owns and operates approximately 126 storage tanks.   | On track          |
|  | To ensure responsible management of equipment containing ozone depleting substances (ODS) across the Department. | To ensure that 100% of Department owned and operated facilities having equipment containing ODS have ODS Management Plans, on an ongoing basis.   | The 2003 ODS Inventory is being updated.  | On track          |
|  | To prevent stormwater contamination from glycol discharges.  | To ensure responsible management of glycol at Canadian airports, on an ongoing basis.   | The <i>Glycol Monitoring Program Report</i> was prepared and sent to Environment Canada in the fall of 2004.  | On track          |

| Issues and Aspects          | Objectives  | Targets  | Status  | Progress Achieved |
|-----------------------------|---|--|---|-------------------|
| Water/<br>Drinking<br>Water | To implement a drinking water program applicable to Transport Canada's owned and operated facilities.         | To ensure safe drinking water for Transport Canada employees and the public, at Department owned and operated facilities, on an ongoing basis. | <p>Transport Canada is working with an interdepartmental committee focused on drinking water to create a guidance document that outlines the best management practices for federal facilities, scheduled to be posted on Health Canada's website by 2006.</p> <p>Transport Canada's Drinking Water Program will be developed based on the guidance document.</p> <p>A database of Transport Canada facilities was created to help determine the buildings owned and operated by the Department.</p> | On track          |
|                             | To develop and implement a training program for staff, in support of the Department's Drinking Water Program. | To develop a departmental training course on safe drinking water, for use at Transport Canada owned and operated facilities, by 2005/2006.     | The Drinking Water Program has not been implemented, so no Transport Canada specific courses were offered. However, Health Canada offered a workshop on drinking water, which Transport Canada employees from across the country attended.  | On track          |

| Issues and Aspects                  | Objectives   | Targets   | Status   | Progress Achieved |
|-------------------------------------|--|---|--|-------------------|
| Environmental Emergency Response    | To ensure prevention and preparedness in the event of environmental emergencies at Transport Canada owned and operated facilities. | Continue to maintain the environmental emergency plans that are in place for all Transport Canada owned and operated facilities.  | In December 2004, a survey of the Department's environmental emergency plans was completed. All the facilities that require environmental emergency plans have one in place and the majority of those plans are updated and revised annually.  | On track          |
|                                     |  | To develop a Transport Canada training plan, by 2004/2005, and deliver one training session per fiscal year or as deemed required, through to 2006/2007.                            | In April 2004, an Environmental Emergency Contingency Plan Training Module was drafted for Transport Canada. To date however, the number of staff members required to participate in such training has been made through private sector based training. As such, the delivery of such a Transport Canada specific training session has not been offered. | Complete          |
| Green Commuting and Business Travel | To provide all Transport Canada employees with better access to green commuting options.   | To achieve a 5% increase in the number of employees using green commuting in urban areas where services exist, by 2006/2007.  |  | On track          |
|                                     | To conduct a pilot project on sustainable business travel options with Québec Region and Headquarters.                             | To achieve a 5% increase in the number of trips using sustainable business travel options in the Québec Region and Headquarters, in urban areas where services exist, by 2006/2007. |  | On track          |



| Issues and Aspects        | Objectives  | Targets   | Status   | Progress Achieved |
|---------------------------|---|---|--|-------------------|
| Environmental Assessments | To improve the quality of environmental assessments (EA) of projects involving Transport Canada.  | Use the Environmental Assessment Quality Assurance Monitoring Program (QAP) annually, to identify strengths and weaknesses in the departmental EA program.  | In November 2003, the Pacific Region was the subject of a QAP evaluation. Specific recommendations and suggestions were made by the evaluation team to improve the overall quality of environmental assessments within the Pacific Region specifically and Transport Canada generally. By September 2004, the Pacific Region had completed all the recommendations made by the evaluators during the review.   | On track          |
|                           | To develop and deliver guidance material to departmental staff and Crown Corporations, to increase their awareness of the requirements of the Canadian Environmental Assessment Act 1999. | To develop and deliver one awareness session to departmental staff and Crown Corporations per fiscal year, or as deemed warranted, through to 2006/2007.<br><br>To develop guidance material as required. | One national meeting and two national workshops were held during fiscal year 2004/2005: the National Environmental Officers Meeting (May 2004) with an EA sub-session; Transport Canada, Fisheries and Oceans Canada Environmental Assessment — Experience with <i>Navigable Waters Protection Act</i> Workshop (June 2004); and the National Environmental Assessment Workshop (November 2004). Staff from all regions and Headquarters attended the workshops and meeting. | On track          |
|                           | To promote compliance with the Cabinet Directive and Transport Canada's Strategic Environmental Assessment (SEA) Policy Statement.  | Provide annual training sessions for departmental staff on SEA.   | Transport Canada undertook revisions to its course training material and implemented new sign-off requirements by Directors General/Regional Directors for Preliminary Scans and Detailed Analyses. In addition, five SEA training sessions were offered to Transport Canada employees.  | On track          |

## *EMS Achievements in the Atlantic Region Show Progress on Many Fronts*

The Atlantic Region has been actively working towards many of the Department's environmental management system (EMS) objectives, as well as those set out in its own (region-specific) EMS. Achievements include:

**Air Emissions ...** In an effort to “green up” the Atlantic Region's vehicle fleet and reduce fuel consumption, the region purchased a fourth hybrid (gas/electric) vehicle — a Honda Civic Hybrid.

**Land Management ...** The Atlantic Region currently tracks 87 contaminated sites — several are risk managed while others are in various stages of assessment and remediation. Work towards EMS objectives included development of risk management plans for two sites in the region.

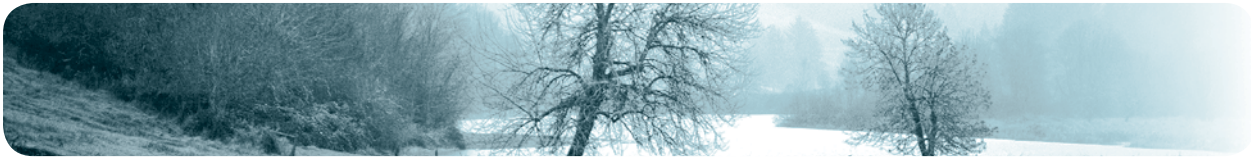
**Hazardous Materials Management ...** The Atlantic Region manages several storage tanks at the two Transport Canada operated airports in the region. Storage Tank Management Plans were developed for the airports in 2004/2005 and are being updated, in part to reflect the fact that the tanks were voluntarily registered with provincial governments. Nine tanks were audited at St. Anthony Airport to determine their level of compliance with provincial regulations.

The region continues to report to Headquarters on the management of ozone depleting substances, of which it has a minimal quantity.

Glycol management plans and water sampling results are obtained from National Airports System (NAS) airports during the annual lease monitoring visits. Any glycol exceedances are closely examined and discussed with airport personnel in order to try to prevent future exceedances.

**Environmental Emergency Response ...** Plans for two Transport Canada airports, as well as for the Transport Canada harbours and ports in the region are updated annually.

**Environmental Assessment — Ongoing Work and Expanded Duties ...** The Atlantic Region completed 155 screenings, and is currently working on 153 active screening files and two panel reviews.



## Keeping the Federal House in Order

The Federal House in Order (FHIO) initiative is the Government of Canada's plan for reducing greenhouse gas (GHG) emissions arising from its operations, in line with Action Plan 2000 on Climate Change. Transport Canada, along with 10 other federal government departments, is required to report fuel consumption and GHG emissions — including emissions from four categories of transportation (air, marine, on-road vehicles and field equipment) and building emissions. In 2001, the Government of Canada announced its intention to reduce emissions from its own operations by 31% from 1990 levels by 2008–2012. As one of the principal operational departments, Transport Canada's share of the target is equivalent to a 4% reduction from its 1998/1999 baseline year. For more information about the program or to obtain a copy of the *Federal House in Order 2004/2005* report, contact: [env@tc.gc.ca](mailto:env@tc.gc.ca).

### *More Energy Efficient Terminal in Kuujuaq ...*

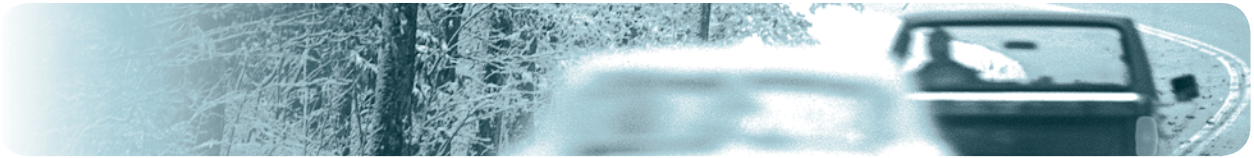
Under the *Federal House in Order* demonstration projects program, the Québec Region received approval to implement energy efficiency measures in the construction of a new air terminal at Kuujuaq. This new building in northern Québec will be equipped with a solar wall, solar water heater and photovoltaic cells on the roof. This project is expected to begin in 2006–2007. Planning of the terminal included determining total GHG emissions, including those from leased or purchased vehicles and heavy machinery used by the Department.

## Waste ... Not

As part of Transport Canada's commitment to the Greening Government Operations policy requirements, the Department launched its No Waste initiative in 1997. This extensive waste management initiative aimed to reduce non-hazardous waste by 75% in Tower C (the Headquarters building located in Ottawa). Waste audits conducted on a regular basis measure and report on performance, and reveal opportunities for improvement.

Comprehensive waste audits from 1997 to 2004 have shown that the initial target of 75% has been achieved. The new target set in Transport Canada's Sustainable Development Strategy for non-hazardous waste is to increase land diversion rates by 5% by 2005/2006, making the new diversion target 80%.

Results of the November 2004 waste audit show Transport Canada employees in Tower C diverted approximately 76% (142,864 kg) of waste material from landfills, and achieved excellent capture rates for paper and corrugated cardboard recycling streams. A network of "Green Representatives," who volunteer to be the liaison between their floor and the program coordinator in promoting No Waste, was expanded in 2004.



## *Waste Not, in the Regions*

The Battery Recycling Program in the **Pacific Region** aims to dispose of used batteries (which contain hazardous materials) in an environmentally responsible manner, and to reduce the amount of waste going to local landfills. Over 100 kilograms of batteries were collected in 2004/2005 and diverted from local landfills.

The **Ontario Region** launched two new paper reduce and re-use initiatives during the year. One, aimed at reducing paper consumption in regional offices, involved setting all printers to a “duplex” setting, no longer enabling single-sided copies. The project has completed its pilot phase — its goal is to reduce blank paper consumption by 30%. The second initiative focused on paper disposal — the Region designed a project to determine potential costs savings and feasibility of using notepads made from single-sided scrap paper. The goal of the program is to reduce pre-manufactured notepad consumption by 30%. Results of this pilot program will be assessed in the coming year.

In the **Québec Region**, a full non-hazardous waste audit was performed at the Dorval office, under its non-hazardous waste recycling program. Results show marked improvement in the recyclable waste recovery rate, as well as a reduction in the amount of non-hazardous waste at the source.

## **National Airport System Evaluations**

In order to provide Transport Canada with information on the condition of its lands and operations, the Department launched a comprehensive environmental monitoring program in 2000. Five environmental monitoring protocols were developed, covering all aspects of environmental management on departmental properties. Under the environmental provisions of ground lease agreements between Transport Canada and airport authorities across Canada, the Department monitors 23 of the 26 National Airports System (NAS) sites on an ongoing basis. (The remaining three NAS airports are owned and operated by the territorial governments and are not monitored by the federal government.) During 2004/2005, 23 NAS airports were evaluated using Transport Canada’s *Environmental Property Protocol* (2000). No major environmental deficiencies were identified in the evaluation.



## B. Environmental Evaluation and Mitigation

### Responsible Management of Contaminated Sites

As operator, landowner and landlord, Transport Canada continues to manage properties that have been contaminated by commercial and industrial activity. The Department is committed to managing these contaminated sites in a responsible manner — its work on this front includes an ongoing contaminated site management program and a management policy that requires all contaminated sites on Transport Canada lands to be identified, classified, managed and recorded. Furthermore, through new EMS targets associated with the Department's 2004–2006 Sustainable Development Strategy, Transport Canada has set specific targets for the management of these contaminated sites:

- » to expend \$25 million during 2004/2005 on mitigating high priority contaminated sites
- » to assess Transport Canada's suspected contaminated sites, by 2007/2008
- » to risk manage or remediate Transport Canada's known contaminated sites by 2010/2011
- » to ensure that risk management plans are in place for all remaining known contaminated sites, by 2010/2011

In July 2003, Transport Canada approved a departmental Contaminated Sites Management Plan that outlined the strategy for managing its contaminated sites and identifying suspected contaminated sites for the next five years. The Department has made considerable progress in assessing and managing its contaminated sites and will continue to manage its sites in a responsible manner.

At the end of each fiscal year, Transport Canada is required to submit inventory data for inclusion in the Treasury Board Secretariat's Federal Contaminated Sites and Solid Waste Landfills Inventory (<http://publiservice.tbs-sct.gc.ca/dfp-rbif/cs-sc/home-accueil.asp?Language=EN>). To assist in this effort and to support departmental tracking, reporting and liability-cost accounting activities, Transport Canada maintains an electronic contaminated sites database, which contains basic parameters for each site, including location, classification and status.



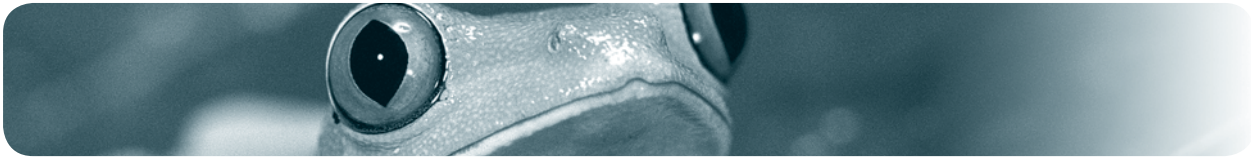


| Table 2: Contaminated Sites, by Status |     |
|--|-----|
| Suspected                              | 64  |
| Under assessment                       | 138 |
| Under remediation                      | 57  |
| Remediated/risk managed                | 18  |
| Under risk management                  | 115 |
| Remediation complete                   | 98  |
| Remediation by third party             | 6   |
| Assessed, no action required           | 60  |
| Total                                  | 556 |

Source: Transport Canada's Contaminated Sites Database, May 2005.

As part of the ongoing process of identifying all contaminated sites on Transport Canada lands, the Department continues to reconcile its property records with information on its *Contaminated Sites Database*.

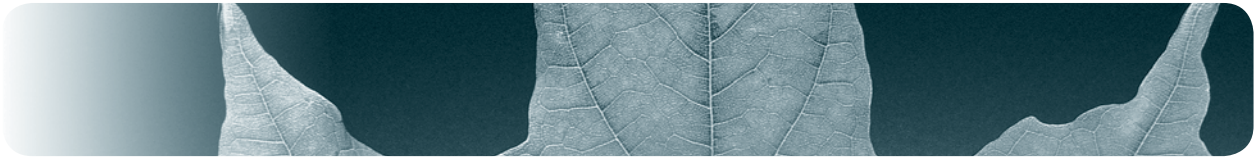
Transport Canada is currently tracking sites (including transferred facilities) where it has a liability or contingency and which are classified in accordance with the Canadian Council of Ministers of the Environment's (CCME) National Classification System (NCS). Of a total of 556 sites, 492 have been investigated and 64 are suspected of contamination.



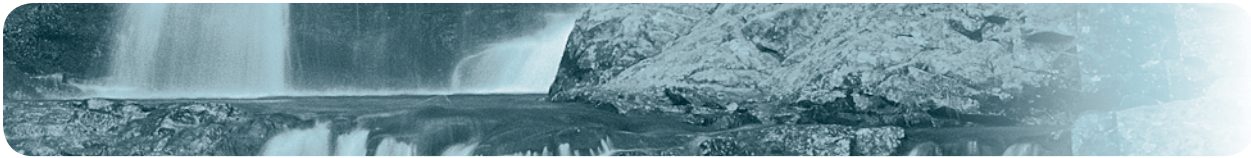
| <b>Table 3: CCME's NCS Classifications</b>  |                                   |
|---|-----------------------------------|
| <b>Class 1 (action required)</b>  | <b>66 Transport Canada sites</b>  |
| Available information indicates that action, such as further site characterization, risk management, remediation, etc., is required to address existing concerns. Typically, Class 1 sites raise major concerns due to a range of factors, and because measured or observed impacts have been documented. |                                   |
| <b>Class 2 (action likely required)</b>   | <b>158 Transport Canada sites</b> |
| Available information indicates that there is a high risk of adverse off-site impacts, although threats to human health and the environment are generally not imminent.   |                                   |
| <b>Class 3 (action may be required)</b>   | <b>110 Transport Canada sites</b> |
| Available information indicates that a site is currently not a major concern. However, additional investigation may be carried out to confirm site classification and, as a result, some action may be required.  |                                   |
| <b>Class N (action not likely required)</b>   | <b>63 Transport Canada sites</b>  |
| Available information indicates there is probably no significant environmental impact or human health threats. There is likely no need for action unless new information becomes available indicating greater concerns, in which case the site should be re-examined.                                     |                                   |
| <b>Class I (insufficient data)</b>  | <b>159 Transport Canada sites</b> |
| Additional information is required to properly classify the site.   |                                   |
| Total Transport Canada sites:   | <b>556</b>                        |

Source: Transport Canada's Contaminated Sites Database, May 2005.

***Federal Contaminated Sites Accelerated Action Plan:*** The federal government's 2004 Budget committed \$3.5 billion over 10 years to accelerate the clean up of contaminated sites for which the Government of Canada is responsible. The Federal Contaminated Sites Accelerated Action Plan (FCSAAP) was established to accelerate action and reduce federal financial liabilities related to high-risk sites (CCME's NCS Class 1 — see Table 3). Key elements include a completed inventory and ranking of sites, along with accelerated action on those sites posing the greatest risks to human health and the environment. It is expected that the action plan will prevent an increase in existing liabilities, with care and maintenance of abandoned mine sites in the north, remediation of high-risk contaminated sites, and advance remediation of many others. The action plan also provides money for both assessment and identification of sites. Transport Canada supports FCSAAP as it will advance a consistent federal government approach to contaminated sites. The FCSAAP cost-sharing regime allows proactive departments (if funded) to initiate or accelerate assessment work and remediate high-risk sites.



Transport Canada received funding through FCSAAP for two remediation and ten assessment projects in 2004/2005 — a total of \$7.6 million. In order to address *all* of its contaminated sites, the Department's Senior Management Committee established an Environmental Remediation Fund in 2004 to serve as an annual reserve for funding action on departmental contaminated sites. This internal fund, managed by the Environmental Affairs Directorate, is intended to cover all operating and maintenance environmental remediation requirements, including up-front investigation and assessment costs, for all Transport Canada business and service lines. In 2004/2005, Transport Canada spent a total of \$26.2 million on the assessment and remediation/risk management of contaminated sites — including funding from the FCSAAP.



## *From One Coast to Another — Remediation of Contaminated Sites*

The Department secured funding of \$2.1 million from the FCSAAP to remediate the Remote Radar Site located on the **Gander International Airport** site. The site was likely constructed in the 1940s by the United States Air Force. While its structures have been demolished for the most part, the foundations and antenna bases still exist (as determined by limited site records). Results of environmental investigations found the site to be heavily affected by polychlorinated biphenyls (PCBs). Due to Transport Canada's concern over the environmental condition of this property relative to the use of the property which includes berry picking, hiking, cross-country skiing, rabbit snaring, etc., a Phase III Environmental Site Assessment (ESA), a Human Health and Ecological Risk Assessment and a number of monitoring events were conducted. These investigations indicated that a combination of active remediation and risk management for this site was warranted. Subsequently, a detailed Remedial Action Plan for the site was developed, with the objective of removing all PCB-impacted soil above 50 parts per million (ppm), a target developed as part of the Human Health and Ecological Risk assessment and supported by Environment Canada. The plan called for the excavation and removal of the soil above 50 ppm, followed by the placement of a one-metre soil cap over top of the remaining soil. During 2004/2005, the Department excavated, transported and disposed of most of the affected soil — plans are to complete the project in 2006/2007, with samples to confirm the status of the soil in the following year.



In September 2004, a partnership between BC Hydro and Transport Canada began Stage 1 of a three-stage remediation project of a former coal gasification site in **Rock Bay**, Victoria. The former gasification plant is located on a 6.8-acre site adjacent to Rock Bay. The plant operated from the 1860s to the early 1950s — the site now contains predominantly waste coal tar and such other contaminants as heavy metals. The project is one of the largest remediation projects undertaken in the province of British Columbia. In spite of the challenges of the site (including complicated engineering), Stage 1 saw a total of 103,000 tonnes of impacted soils removed from the site and successfully treated or remediated at off-site facilities — the equivalent of 40 barges or 7,140 dump truck loads of soil. Additional funding (\$5.9 million, 80% from FCSAAP) is secured for 2005/2006, and the final two stages will be completed by 2007. The project demonstrates the partnership between BC Hydro, Transport Canada, the City of Victoria and the community to create a cleaner environment in Rock Bay.



## *Contaminated Site Evaluation and Remediation in the Québec Region*

The Québec Region has invested more than \$5 million in contaminated site evaluation and remediation. Significant decontamination work was performed on nine sites in the region, with some of the work continuing in 2005/2006 and beyond. Lac Nitchequon is one of the sites funded under FCSAAP, starting in 2005/2006. The \$5.4 million project to remediate this Class 1 site consists of removing hazardous materials and transporting them to accredited hazardous waste management centres; dismantling and disposing of petroleum equipment in accordance with regulatory requirements; and treating contaminated soil (2,500 m<sup>3</sup>) so that the land can be utilized by site users. The work is expected to be completed in 2007. The Québec Region conducted a number of environmental investigations, mainly at port sites, in preparation for developing appropriate management plans. The environmental investigations for the Matane, Les Méchins and Carleton port sites were funded under the FCSAAP. About 60% of port sites have been documented, while additional data is required for the other ports to meet the requirements of the Treasury Board Contaminated Federal Sites Inventory Policy. This work will continue in 2005/2006.

### **Land Occupied by Nav Canada**

Transport Canada conducted site assessments of almost 800 navigation sites as part of the privatization of the Air Navigation System that occurred in 1996. Since the transfer occurred, Transport Canada has conducted remediation at most of the sites where contamination was identified and only a handful of sites remain to be cleaned up. This work is required in accordance with the Transfer Agreement between Transport Canada and Nav Canada, with Transport Canada responsible for contamination that occurred prior to the transfer.

In most cases, Transport Canada has elected to remediate sites to eliminate any liability. The major exception to this approach includes sites on which excavation or other works would result in damage to, or a shut down of, the navigation aid. On these sites, the contamination has been delineated and steps have been taken to ensure that the contamination does not migrate off site.

Major remediation projects that were completed during the year include a multi-year project at Cambridge Bay, Nunavut, where transmitter and receiver sites were cleaned up at a cost of \$330 million; and Kuujjuarapik, Québec, where contamination from a number of sources was excavated and placed in a bio-pile at a cost of \$100 million.

Work was also carried out at Coral Harbour, Nunavut, where excess land at the Non Directional Beacon was cleaned up using local labour. Remediation work is planned to begin in 2005 for the few sites that still require clean up.





## Storage Tanks

Although the number of underground and aboveground storage tanks on Transport Canada property is on the decline due to continued property divestiture, the Department continues to closely monitor this inventory. The majority of these tanks contain petroleum and associated products, including aviation fuel and glycol, which have the potential to contaminate surrounding environments. Environment Canada proposes to repeal the *Canadian Environmental Protection Act, 1999 (CEPA 1999) Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Lands or Aboriginal Lands Regulations*, and the *CEPA 1999 Technical Guidelines for Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products and Technical Guidelines for Aboveground Storage Tank Systems Containing Petroleum Products*, and replace them with new regulations. These regulations promote a voluntary approach to compliance. Proposed new regulations will be broader in scope, and more effective in preventing pollution and protecting the environment from soil and groundwater contamination.

### *Oil Storage Tanks in the Québec Region*

A 2002 audit of all Québec Region tanks showed a number of areas of non-compliance with federal and provincial standards, and since then work has been carried out to address the high priority cases. In 2004/2005, remediation work was performed on eight tanks at the Havre Saint Pierre, Baie Comeau and Kuujuaq airports. Excluding National Airport System airports (Mirabel, Montréal and Québec City), about 15 tanks still do not comply with the Canadian Council of Ministers of the Environment (CCME) code and technical recommendations (a 74% compliance rate).

## Site Environmental Remediation Tracking System

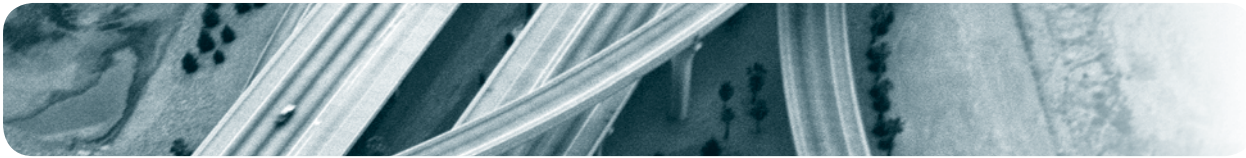
Transport Canada continues to use a Site Environmental Remediation Tracking System (SERTS) to manage its storage tank inventory. SERTS database users are responsible for populating the database with information pertaining to tanks and tank systems under their administrative control. Each regional office controls its own SERTS database, and Headquarters has the ability to download regional data into a duplicate database located in Ottawa. Headquarters will be providing reports to Environment Canada once the new regulations concerning storage tanks come into force. Currently, Transport Canada owns and operates approximately 126 storage tanks.



## C. Environment Information System

Transport Canada's Environmental Programs Branch has developed a conceptual proposal to create an Environment Information System (EIS). This system will integrate information from disparate datasets. The application will bring together textual and spatial data that reside in various Transport Canada databases. The data will be geo-referenced and displayed as different layers or views to the user. The information will be displayed through a map interface and disseminated over the Transport Canada Intranet to real property and environmental practitioners across the country.

In March 2005, a Feasibility Study was completed. The study recommended that a pilot project called the Land Layer Pilot Project be developed as a "proof of concept." Project activities will include conversion of the Property Records System database, geo-referencing of property plans, integration of property data and creation of a graphical user interface. The planned system will enable the Department to meet Treasury Board requirements for custodians of federal real property to report spatial information pertaining to land holdings. It will also capture data relevant to the Department's environmental obligations and responsibilities and allow Transport Canada's Environmental Programs branch to share information relevant to the Environmental Management System, Contaminated Sites and Environmental Assessment.



## D. Awareness Activities

A number of awareness activities are carried out by the Directorate — and many programs and initiatives include an awareness component. Two initiatives dedicated to improving awareness are Environment Week and *TC Express*.

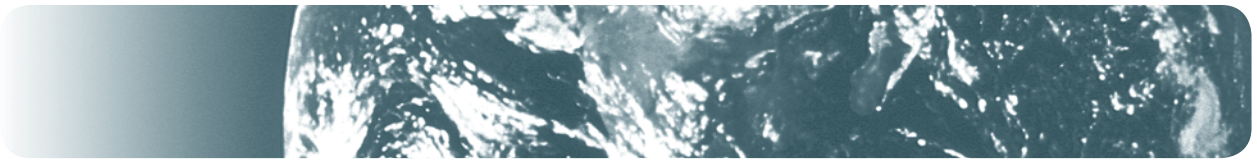
### Environment Week

Canada's Environment Week is celebrated annually during the first week of June. Transport Canada participates and promotes awareness each year by organizing a variety of events in celebration of the week. In 2004, a variety of exhibitors were in attendance to showcase environmental initiatives — they included the City of Ottawa (highlighting their pesticide reduction strategy), Natural Resources Canada (providing energy-saving tips), Home Depot (promoting Eco-Option products), and Citizens for Safe Cycling (offering safety tips and bike route information). Employees also saw some of the alternative fuel vehicles from the Advanced Technology Vehicle Program and took advantage of free bike tune-ups.

The National Commuter Challenge is one of the major activities of Environment Week in which Transport Canada competes every year. With a total of 821 employees registering to take the challenge in 2004, Transport Canada (Headquarters) took second place in its category for the fifth consecutive year — an accomplishment acknowledged at a special awards ceremony held by the City of Ottawa.

### Keeping People Informed

*TC Express* is a national e-newsletter produced by Transport Canada to keep employees and the general public informed about a variety of transport-related initiatives. Since 1997, the Environmental Programs Branch and the regional offices have submitted educational articles on environmental issues as well as information on program successes for the *Green Corner* feature. The feature was renamed *Sustainable Development Corner* in 2004, and now accepts submissions from across the Directorate that are informative, balanced and address the three pillars of sustainable development. To date, articles have covered a range of topics, including the One-Tonne Challenge, Goods Movement and Consumer Choices, and Ontario Region's Destination Sustainability Workshops.



## E. Guidelines, Regulations and Policies

A range of tools, from guidelines to policies to regulations, are employed to support the work of the Directorate, the Department and beyond. Those relevant to the work of the Environmental Programs Branch are highlighted below, including accomplishments, progress and activities carried out over 2004/2005.

### Canadian Drinking Water Quality Guidelines

In Canada, the responsibility for providing clean, safe and reliable drinking water to the public generally lies with the provincial and territorial governments. The federal government is responsible for ensuring the safety of drinking water supplies on its own lands, as well as supplies serving federal government facilities. Transport Canada is currently working with several other federal departments to produce a guidance document that will complement the current *Canadian Drinking Water Quality Guidelines*. The document is scheduled to be posted on Health Canada's website by 2006. Transport Canada will develop a drinking water program based on these guidelines.

Several Transport Canada employees participated in a February 2005 Health Canada workshop on federal drinking water issues — which addressed the challenges related to provision of drinking water and approaches to improving Health Canada's capacity to assist federal drinking water providers. Results will also be incorporated into Transport Canada's future drinking water program.



### ***Canadian Environmental Protection Act, 1999***

A number of issues related to the *Canadian Environmental Protection Act, 1999* (CEPA 1999) were addressed by Transport Canada in 2004–2005, including the use of glycol and road salts, as well as the parliamentary review of CEPA 1999.

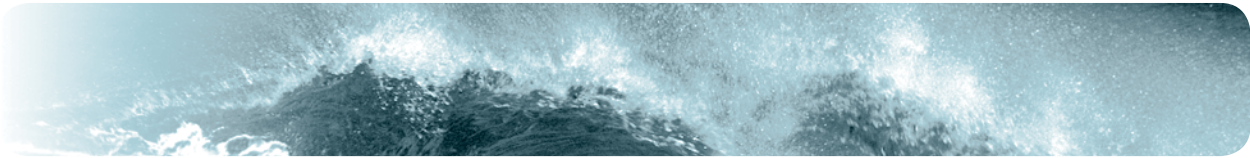
***Use of Glycol:*** Prior to flight departures during periods of inclement winter weather, airlines spray a heated glycol-based fluid on aircraft surfaces for safety purposes. Although glycol sometimes pollutes the air and groundwater, of greater significance is the hazard to aquatic life posed as a result of stormwater flowing into surface waters. Although existing environmental legislation does not specifically require water monitoring, federal, provincial and municipal laws do specify water quality standards and guidelines to be followed by industry. According to CEPA 1999, the level of glycol at an effluent discharge point should not exceed a total concentration limit of 100mg/L.

To ensure that airport effluent does not negatively impact the environment, Transport Canada has implemented a program to sample and analyze stormwater at its airports. Water quality programs have also been established by local and Canadian airport authorities. Both Transport Canada airports and local airport authorities have implemented, in conjunction with air carriers, detailed glycol mitigation plans and procedures — details are set out in the 2004/2005 *Glycol Monitoring Program Annual Report*. For more information about the *Glycol Monitoring Program Annual Report* or to obtain a copy, contact: [env@tc.gc.ca](mailto:env@tc.gc.ca).

Transport Canada conducted a project to obtain data to help develop an Airport De-Icer Management System (ADMS) model. The objective of the ADMS model would be to track the dispersal of ground de-icing/anti-icing products at an airport from the time of application up to, and beyond, the departure of the aircraft. Phase I of the ADMS project was completed in 2003/2004 and Phase II, the final phase, was completed in 2005.

Transport Canada is an active member of the Society of Automotive Engineers (SAE) G-12 Sub-Committee — De-icing Facility Operational Procedures Working Group. The group includes representatives from around the world working to develop guidelines for aircraft de-icing operations worldwide.





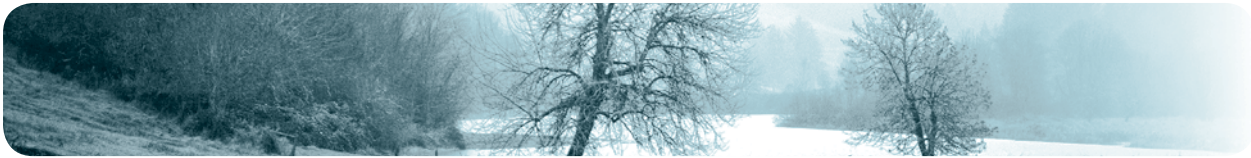
***Use of Road Salts:*** Under CEPA 1999, the Government of Canada published a *Code of Practice for the Environmental Management of Road Salts* in April 2004. The Code is designed to help road authorities better manage their use of road salts in a way that reduces the harm they cause to the environment while maintaining road safety. Transport Canada's Environmental Programs and Road Safety staff are supportive and committed to this Code. Where applicable, it has been implemented as part of the Department's day-to-day operations.

***CEPA 1999 Review:*** Transport Canada actively participated in the interdepartmental process to prepare for the parliamentary review of this act. The Department worked to ensure that the consultative process was comprehensive and transparent, and that it fully considered the views of the transportation sector. CEPA 1999 stipulates that the Act must undergo parliamentary review every five years — the first review is scheduled to start in 2005.

### ***Species at Risk Act***

The *Species at Risk Act* (SARA), passed by Parliament in December 2002, came into force in three phases. As of June 2004, the final phase was implemented, which covered the prohibitions and enforcement of the law. The goal of SARA is to prevent endangered or threatened wildlife (both animal and plant species) from becoming extinct or extirpated from the wild in Canada, and to help in the recovery efforts of these species. It is also intended to manage species of special concern in order to prevent them from becoming endangered or threatened. The Act contains a list of species called Schedule 1 — the legal list of species to which the law applies and which receive full protection (including their residences and critical habitats).

The implications of SARA for federal departments are varied, with the onus on each department and agency to determine whether or not a listed species (including residence or any critical habitat) is present on the lands or waters that fall within its jurisdiction. For species listed as endangered, threatened or extirpated, recovery strategies and action plans are put into place within a specified timeframe. Federal departments with a listed species on their lands are involved in the process of developing recovery strategies and action plans. In addition, under the *Canadian Environmental Assessment Act* (CEAA), federal departments conducting environmental assessments of proposed projects must ensure that the provisions of SARA are considered in their assessment, and that the appropriate mitigation measures are put into place to protect these species and their habitats.



## *Meeting Species at Risk Act Obligations*

Transport Canada has made progress toward ensuring that its SARA obligations are met. In the **Atlantic Region**, the Department partnered in a cost-sharing initiative with other federal departments to determine the occurrence of listed species at risk on federal properties in Newfoundland and Labrador. The project led to the development of a search and reporting database in the form of a CD, referred to as the *Species Management and Research Tool* (SMART), that contains links to recovery documentation, fact sheets and active sites on the Internet for additional information relating to SARA compliance. **Québec Region** has been active in conducting natural resource inventories to establish the presence of listed species on federal landholdings in Québec and have widened their scope of assessment to include species listed in Schedule 2 and 3, as well as those in Schedule 1. To date, Québec Region has found very few species from Schedule 1 within their property limits. The **Ontario Region** also completed an inventory (April 2004) for Pickering Land Sites, and the **Prairie and Northern Regions** successfully completed one at Churchill Airport, which confirmed that no species at risk were found on the property. The **Pacific Region** is also making significant progress on this front—a natural resource inventory (NRI) is now underway for Sandspit Airport, and a SARA risk assessment has been completed for the flightway clearing project at Port Hardy. The NRI for Port Hardy is scheduled for next year.

Information resulting from the above studies, as well as the tools developed to conduct them, provides invaluable information for the Department in meeting the SARA requirements under the CEAA.

## **Canadian Environmental Assessment Act**

***Environmental Assessment:*** Transport Canada conducts environmental assessments (EAs) for proposed projects in accordance with the Canadian Environmental Assessment Act (CEAA). Under the CEAA, Transport Canada must ensure that an EA is conducted whenever one of the following four “triggers” is present — that is, when the Department: is the proponent of a project; is proposing to fund a project; is the owner of the lands and is proposing to sell or lease lands for the project; or is proposing to issue an approval or authorization listed in the Law List Regulations under CEAA.

### *Project Environmental Assessment ...*

is a systematic approach that identifies the expected positive and negative environmental effects of a proposed project before a decision is made about whether it may proceed. The process allows a project proposal to be modified in order to prevent, minimize or manage predicted adverse environmental effects, or to be refused approval to proceed.

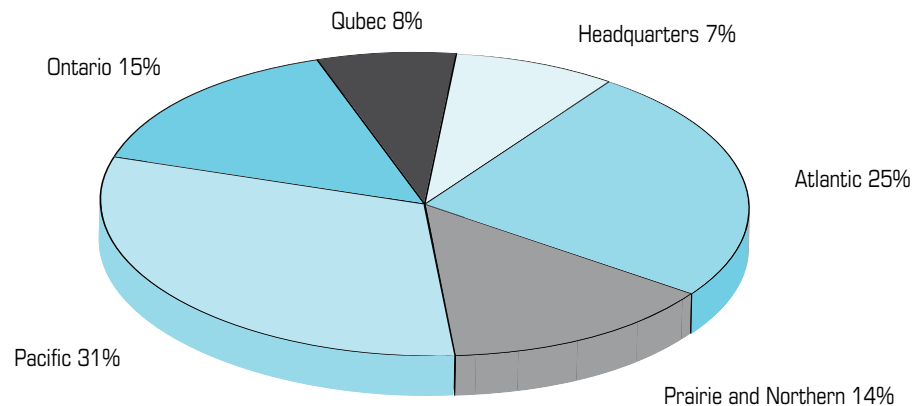


In 2004/2005, Transport Canada participated in a total of 883 EAs, of which 367 were completed and 516 were still underway. Most (853) of the EAs were screenings, while 21 were comprehensive studies and 9 were panel reviews. The following table summarizes the number of EAs for each CEEA trigger outlined above and the subsequent chart provides a national distribution of the percentage of EAs underway and completed for each region and Headquarters during fiscal year 2004/2005. The number of EAs carried out in 2004/2005 represents an increase from the approximately 2003/2004 year representative of the past several years — a change related to the transfer to Transport Canada of administrative responsibility for the Navigable Waters Protection Act.

**Table 4: Number of EAs Underway and Completed by the Department during Fiscal Year 2004/2005 by CEEA Trigger**

| CEEA Trigger: Transport Canada...   | Number Completed | Number Underway | Total Number Underway and Completed and (% of Total) |
|---|------------------|-----------------|--|
| ... is the proponent of a project   | 44               | 3               | 47 (5%)  |
| ... proposes to fund a project  | 43               | 55              | 98 (11%)   |
| ... owns lands and proposes to sell/lease them for a project  | 25               | 9               | 34 (4%)  |
| ... proposes to issue a Law List Regulations approval or authorization for a project ( <i>Navigable Waters Protection Act</i> ) | 255              | 449             | 704 (80%)  |
| Total: 883  | 367              | 516             | 883 (100%)   |

**Figure 1: Percentage of Environmental Assessments Underway and Completed by Region and Headquarters during Fiscal Year 2004/2005**



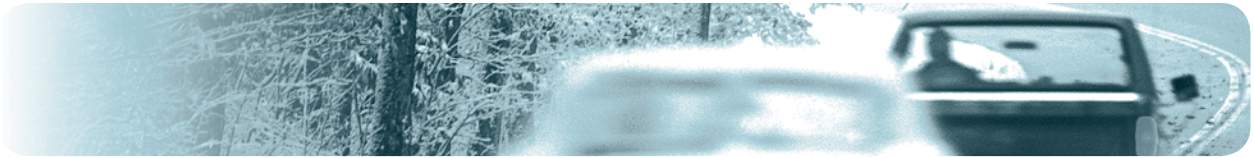


### CEAA Environmental Assessments by Trigger

***Transport Canada is the project proponent ...*** this trigger accounts for only 5% of the EAs completed by the Department. Transport Canada would be involved as the proponent for EA projects such as remediation at contaminated sites or construction/operations at ports and airports or at other property owned by the Department.

***Transport Canada proposes to fund a project ...*** The Department is involved in several contribution programs — this trigger accounts for 11% of the EAs completed by the Department. The principal contribution programs for which Transport Canada is responsible and which generally require EAs are: the Strategic Highway Infrastructure Program, the Canada Strategic Infrastructure Fund, the Border Infrastructure Fund, the Marine Security Contribution Program, the Grade Crossing Improvement Program, the Urban Transportation Demonstration Program, the Moving on Sustainable Transportation (MOST) program, and the Freight Sustainability Demonstration Program. EAs for these projects are generally conducted through the Headquarters' offices.

***Transport Canada owns the land and proposes to sell or lease it for a proposed project...*** Only 4% of EAs completed annually are triggered by the land issue — these include such projects as lease renewal or construction/operations at properties leased by the Department.



***Transport Canada proposes to issue a Law List Regulations approval or authorization for a proposed project ...***

On March 29, 2004, administrative responsibility for the *Navigable Waters Protection Act* (NWPA) was officially transferred to Transport Canada from Fisheries and Oceans Canada. This transfer created a significant increase in the number of EAs and accounts for 80% of EAs completed or underway by the Department for the fiscal year. The additional EA responsibility comes from approvals that are issued under the NWPA, which require that an EA be completed before the approvals can be issued. Before the transfer of NWPA, Transport Canada was participating in an average of 200 EAs annually.

The NWPA-related responsibility has brought the Department new types of projects for environmental assessment. For example, a large number of EAs in the Atlantic and the Pacific Regions are now related to aquaculture (finfish and shellfish). Bridge projects make up a large majority of EAs conducted in the Ontario Region and the Prairie and Northern Region — both are also involved in the development of diamond mines and the Prairie and Northern Region with the development of the Mackenzie Valley gas project. The Québec Region is involved in bridge projects, dam and power plant projects. The Pacific, Québec and Atlantic Regions are all involved in EAs for liquefied natural gas projects and most regions are involved in mining projects.

*For fiscal year 2004/2005, the Department issued no other authorizations under the Law List Regulations.*

***Project EA under Northern Regimes:*** Transport Canada was also involved with a number of environmental assessments, in its capacity as an expert department, under EA regimes established pursuant to northern land claims agreements — specifically, the *Mackenzie Valley Resource Management Act*, the Nunavut Land Claim Agreement and the Inuvialuit Final Agreement.

The Prairie and Northern Region continues to participate in five ongoing CEEA comprehensive studies for mining projects in the north: Bathurst Inlet Port and Road Project, and the mining projects Meadowbank, Doris North, Jericho and High Lake. Its EA team also provides specialist advice to the Mackenzie Valley Environmental Impact Review Board, Sahtu Land and Water Board, Nunavut Impact Review Board and the Yukon Water Board — and is involved in the development of the EA harmonization agreement between the federal government and the Inuvialuit.



## *Navigable Waters Protection Act in the Atlantic Region*

Since the NWPA program was introduced, Transport Canada Regions have been more involved in Comprehensive Studies and Panel Reviews. For fiscal year 2004/2005, the Atlantic Region is involved in two panel reviews (Sydney Tar Ponds and the White Point Quarry), as well as in three liquefied natural gas (LNG) projects.

Under the NWPA, Transport Canada now issues permits for **aquaculture** sites — requiring the Department to conduct environmental assessments for aquaculture projects. Since the transfer of this responsibility from Fisheries and Oceans Canada, Transport Canada has made a smooth transition into the aquaculture industry. Environmental Affairs Directorate and Marine Safety Directorate represent the Department on these multi-faceted committees and work closely to build on these relationships and establish the Department's role within the industry. In addition to its presence on inter-governmental committees, the Atlantic Region entered into an agreement with Fisheries and Oceans Canada (Newfoundland and Labrador Region), establishing that Department's role and responsibility in mitigation and follow-up monitoring for potential impacts on aquaculture development on fish and fish habitat. These aquaculture initiatives have strengthened both internal and external working relationships in the Atlantic Region.

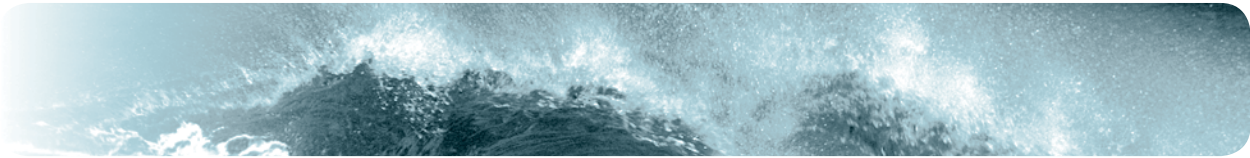
Over the course of the last year and coinciding with the transfer of the NWPA program to Transport Canada, **liquefied natural gas** (LNG) has become a hot topic in the Maritimes. Proximity to the supply of LNG (Far East, Africa, etc.), its deep water and ice-free harbours, along with the relatively low population densities of the area, has made it attractive to LNG developers. It is anticipated that LNG will be key in increasing the mix of energy sources available to North Americans, contributing to the stability and reliability of the overall energy supply. Transport Canada's responsibilities related to LNG concerning environmental assessment arise from section 5(1)(a) of the *Navigable Waters Protection Act*, to allow for an interference to navigation, associated with the LNG terminal and marginal wharf. It is expected that several federal departments, along with provincial environment departments will be involved in the environmental assessment process.



To date the following NWPA decisions concerning the Maritimes LNG projects have been rendered:

- » The Bear Head LNG project underwent a screening level environmental assessment (a new project to Transport Canada, transferred from Fisheries and Oceans Canada).
- » The Irving Oil LNG project was subjected to a comprehensive study pursuant to paragraph 28(c) of the *Comprehensive Study List Regulations*.

The Keltic LNG project is subjected, at a minimum, to a comprehensive study pursuant to paragraph 28(c) of the *Comprehensive Study List Regulations*; however no decision (comprehensive study or panel review) under the Act has been taken as the responsible authorities have not yet completed their track decision report or letter of recommendation to the Minister of the Environment.



**Training and Workshops:** A number of events were held throughout the year to share knowledge and develop skills, including:

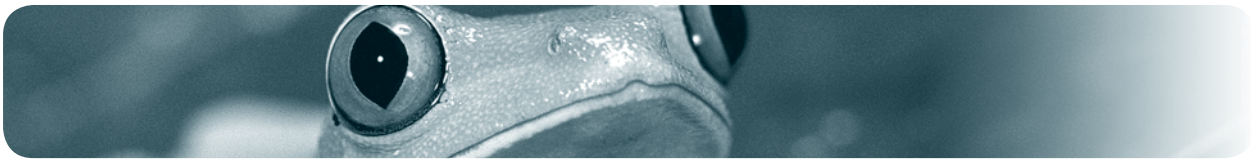
- » The Department's annual National Environmental Officers Meeting (St. John's, May 2004) — along with a sub-session on environmental assessment in which staff from all Regions and Headquarters participated.
- » A joint Fisheries and Oceans Canada and Transport Canada workshop (June 2004) – which enabled participants to share expertise on operational and policy issues associated with the NWPA.
- » A national EA workshop (Toronto, November 2004) – which focused on a national dialogue and continued discussions on the Department's new responsibilities. The workshop led to several initiatives, such as the development of a new EA tracking system and additional guidance material and procedures. The next national EA workshop is scheduled for October 2005 in Winnipeg.

**Quality Assurance Program:** Transport Canada's EA Quality Assurance Program (QAP) includes the evaluation of pre-selected screening reports and interviews with EA Officers and their clients. Systematic, documented and objective, the evaluations assess the Department's EA screening reports against requirements of the CEAA. The review also enables the Department to ensure EAs are conducted using nationally consistent practices and procedures. An evaluation for at least one region or Headquarters Directorate is carried out each year by Headquarters.

The Pacific Region was the subject of a QAP evaluation in November 2003, which included recommendations to improve the overall quality of environmental assessments within the Pacific Region and Transport Canada generally. By September 2004, the Pacific Region had addressed all of the recommendations.

In November 2004, Headquarters, with the assistance of the Pacific Region, conducted a quality assurance assessment in the Atlantic Region, covering the period from January 2003 to June 2004. The assessment evaluated a variety of compliance requirements (e.g., timing, determining whether or not the CEAA applied, completeness of project descriptions, etc.) — results were presented to EA Officers at the National Environmental Assessment Workshop in November 2004.





***Class Screenings:*** A class screening is a tool used to streamline the environmental assessment of projects that share such characteristics as scope, activities, location, proponent and environmental settings. Under the CEAA, the Canadian Environmental Assessment Agency may declare a report to be a “class screening report” if projects of the class described in the report are not likely to cause significant adverse environmental effects when the design standards and mitigation measures described in the report are applied.

The Department worked closely with other government departments, including Fisheries and Oceans Canada, Environment Canada and Agriculture and Agri-Food Canada, to develop class screening reports for projects related to oyster aquaculture, embedded culverts, hydrometric stations, small-scale water quality improvement projects and small-scale water infrastructure projects.

***Memoranda of Understanding — Offshore Petroleum Development Projects in Accord Areas:*** On February 9, 2005, the Minister of Transport signed two Memoranda of Understanding (MOUs) on effective, coordinated and concurrent environmental assessment and regulatory processes for offshore petroleum development projects in accord areas — Nova Scotia, and Newfoundland and Labrador. The MOUs are intended to foster cooperation among signatories involved in the approval of offshore oil and gas projects, to encourage effective communication between proponent and regulators during the development of an application, to promote process certainty and predictability, and to establish a concurrent review process for all regulators in order to avoid overlap, duplication and project delays.

***Federal-Provincial Environmental Assessment Cooperation Agreements:*** Several years ago, the federal and provincial ministers of the environment signed a number of EA cooperation agreements — designed to foster cooperation between Canada and the provinces for bilateral environmental assessment of projects to achieve greater efficiency and the most effective use of resources, and to establish accountability and predictability by delineating the roles and responsibilities of the federal and provincial governments. Some of these five-year agreements were scheduled to expire during the fiscal year 2004/2005 — however, both Canada and the provinces are committed to renewing these agreements and maintaining the improved working relationship that has been achieved through them. The proposed renewed agreements will also implement some of the key features of recent amendments to the CEAA. The Department participated in reviews for the renewal of several of these agreements — specifically, those with Ontario, Newfoundland and Labrador, Nova Scotia, Saskatchewan and Alberta.



## Environmental Assessment Legislation and Regulations Review

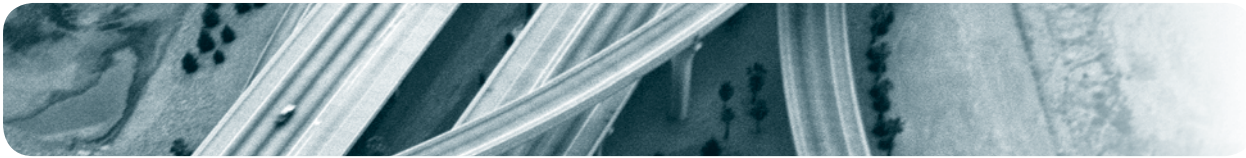
Transport Canada has continued to work with the Canadian Environmental Assessment Agency to review existing regulations, to develop new EA regulations for Airport Authorities and Crown Corporations, and to amend the *Canada Port Authority Environmental Assessment Regulations*.

The 2004 Speech from the Throne stated: “The Government will work to get its own house in order. It will consolidate federal environmental assessments and will work with the provinces and territories toward a unified and more effective assessment process for Canada.” Transport Canada is currently working with the Canadian Environmental Assessment Agency and other departments to implement the changes identified in the Speech from the Throne.

***Yukon Environmental and Socio-Economic Assessment Act and Regulations:*** The Government of Canada, the Yukon Territorial Government and the Council of Yukon First Nations have been involved in a process to develop this Act and regulations. While the Act received Royal Assent in 2003, several regulations must be developed before the Act can come into effect. Transport Canada is actively participating in this process. Once in effect, this Act will replace the CEAA in the Yukon Territory and will create a process whereby environmental and socioeconomic effects of a wide range of development activities are carefully assessed and considered before a project is approved.

### *Environmental Assessments — Working Together in the Prairie and Northern Region*

Transport Canada was recently required to complete an EA in accordance with the requirements of CEAA for eight proposed bridges over Seven Person Creek, near Medicine Hat, Alberta. During the federal coordination process, Environment Canada made the Department aware of the potential presence of listed species in this region under the *Species at Risk Act* (SARA). At the request of Transport Canada, the proponent in this case undertook a rare plant species survey at the eight proposed development sites. Although no SARA species were identified, the Prairie cord grass, a provincial endangered species, was identified in two of the project areas. Transport Canada considered many mitigation options and, through negotiations with the proponent, it was decided that one bridge would be relocated to completely avoid the sensitive area, while the footprint of the second bridge would be minimized to allow a buffer zone between the area of construction and the species. The proponent also agreed to install signage to make bridge users aware of the presence of Prairie cord grass and keep them away from these sensitive areas.



## Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a systematic process for evaluating the environmental effects of policy, plan and program proposals to ensure that they are addressed on an equal footing with economic and social considerations and early in the decision-making process. Since the issuance of the first Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals in 1990, the Department has implemented a number of measures to promote, undertake and monitor the environmental assessment of policy, plan and program proposals submitted to Cabinet or to the Minister of Transport for consideration.

Transport Canada completed a total of 43 preliminary scans for policy, plan and program proposals during fiscal year 2004/2005. One detailed analysis was completed and one was ongoing during this period.

### ***Audit by the Commissioner of the Environment and Sustainable Development (CESD):***

In the fall of 2003, the CESD undertook an audit of the environmental assessment of federal policy, plan and program proposals to: determine whether the federal government is applying the SEA Cabinet Directive; to assess progress made by selected government departments and agencies in meeting SEA-related commitments in their sustainable development strategies; and to identify examples of leading practices of SEA in Canada and abroad. The Commissioner's report, tabled in October 2004, recognized Transport Canada's progress and leadership in implementing the Cabinet Directive and noted that the Department has most of the elements that enable it to conduct SEAs. Other findings about Transport Canada activity include:

- » clear senior management commitment and leadership — as demonstrated by the Department's SEA Policy Statement adopted in 2001 (scheduled for revision in 2005/2006).
- » a comprehensive SEA Tracking System — noted as good practice in SEA management.
- » adequate training and guidance — noted as good practice in documented guidance.



In response to the Commissioner's observation that Transport Canada SEA accountabilities could be clearer about sign-off requirements for preliminary scans and detailed analyses, the Department has implemented new sign-off requirements by Directors General/Regional Directors for these components of its SEAs.

As of January 1, 2004, federal departments and agencies are now required to prepare a public statement of environmental effects when a detailed analysis of environmental effects is completed. A summary of the conclusions concerning important environmental effects, this statement serves to assure stakeholders and the public that environmental factors have been appropriately considered when decisions are made. In 2004/2005, one public statement was completed and posted on the Transport Canada website.

***Strategic Environmental Assessment Training:*** Five additional SEA training sessions were offered during the year to Transport Canada employees who were involved in the preparation or coordination of proposals to the Minister or Cabinet. Three training sessions were held in English, one in French at Transport Canada Headquarters, and one French training session was held in Transport Canada's Québec Region office. As of March 31, 2005, more than 168 Transport Canada employees have received SEA training, and it continues to be offered as required. During this period Transport Canada also undertook revisions to its course training material. SEA awareness and capacity building will continue to be promoted within the Department.

***Strategic Environmental Assessment Tracking System:*** Transport Canada improved the SEA tracking system by transferring it to Microsoft Access® for better querying and management.

***Strategic Environmental Assessment Performance Compliance and Quality Control:*** Twice each year, the Assistant Deputy Minister of Programs and Divestiture provides the Deputy Minister of Transport Canada with a report on the Department's SEA performance — highlighting initiatives, performance and compliance with the Cabinet Directive. The Environmental Affairs Directorate is responsible for conducting qualitative assessments of preliminary scans and detailed analyses that the Directorate receives. Assessments are conducted to ensure that all required elements for preliminary scans and detailed analyses are present for all proposals submitted to Cabinet for consideration. The last quality assessment indicated a high level of completeness.



## F. Work with Other Organizations

Fostering partnerships, collaboration and building and maintaining networks is vital to the Directorate's work. Following are highlights of the partnership building and cooperative and collaborative efforts of the Environmental Programs Branch over the course of 2004/2005.

### **Transit Pass Program:**

The Transit Pass program is an initiative developed with the transit companies in the National Capital Region (NCR) to encourage federal employees to use public transit by offering an annual pass with a discount. The program began originally as a pilot project using payroll deduction among 4 departments including Transport Canada. Upon successful conclusion of

#### *Working Together ...*

The natural linkages that exist between the One-Tonne Challenge and the Commuter Options Program have resulted in various cross-promotional activities. For example, links have been established on websites for both programs, initial connections have been made with the One-Tonne Challenge Climate Change Hubs in every province and the Commuter Options Program was highlighted at the Communities Challenge workshop in Ottawa in November 2004.

the pilot, Transport Canada negotiated an agreement with OC Transpo to allow all federal departments and agencies in the NCR to have access to discounted transit passes through payroll deduction. The Société de transport de l'Outaouais (STO) opted to promote their existing pre-authorized payment program to federal employees residing in Québec.

On November 26, 2004, the newly expanded Transit Pass Program was launched with a press release and event on Parliament Hill with Minister Brison, Minister Dion and representatives from OC Transpo, the

STO and Transport Canada. In January 2005, letters were sent to all 86 federal departments and agencies in the NCR inviting them to join the Transit Pass Program. Between January and March, 6 new departments joined the Transit Pass Program. The program will continue bringing on new departments every month in 2005/06 until all interested departments and agencies are on the program.





## Commuter Options Program

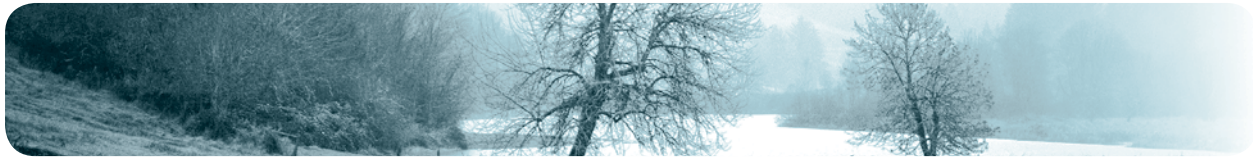
The Commuter Options Program has evolved considerably over the course of the past year. Among other activities, the Department has developed a draft Communications Strategy that will continue to be refined, while serving as a foundation for expanding the program. During the year, the Department developed and began dissemination of a promotional brochure aimed at informing employers across the country who might be interested in the Commuter Options Program. To date, the brochures have been distributed through organizations that focus on transportation demand management initiatives, as well as at such events as the Smog Summit. Other activities over the year include:

- » A presentation on the Commuter Options Program — delivered at the New Mobility Summit in Toronto (September 2004). Organized by the Sierra Club of Canada, the event was designed to help find new and unique ways to promote sustainable transportation options.
- » Work with The Clean Air Partnership, a non-profit organization based in Toronto — to help spread the word about the Commuter Options Program in the Greater Toronto Area (GTA) by assessing the interest of large employers. A list of potential employers in the GTA to target for future training workshops is one result of the assessment.
- » A training workshop was held in Ottawa in April 2004 and was attended by representatives from 12 different federal departments. Plans are underway for organizing another one in Winnipeg with the intention of attracting participants from a variety of employers, representing both the public and private sectors.

### *Carpool Connection in the Ontario Region*

The Carpool Connection is a website program developed by Ontario Region staff to match interested carpoolers with potential partners. When up and running in 2005, the site will be accessible to any employee of any federal department at 4900 (Joseph Sheppard Federal Building) or 5001 (Hollywood Centre) Yonge Street, Toronto (including close to 10 departments and agencies), with links to relevant websites. Various communication and awareness initiatives are planned to promote the site. The website was initiated to respond to the results of a survey of commuting practices, which revealed an interest in carpooling among employees, but difficulty in finding compatible matches. Work involved adapting a software program similar to one in use by Headquarters. Funded as a pilot project, future expansion will be considered, based on review of the pilot.





## Clean Air Partnerships

In 2004/2005, Transport Canada received funding from Environment Canada for its component of the Border Air Quality Strategy commitments on Clean Air. Transport Canada has the authority to regulate emissions from the aviation, rail and marine sectors. A variety of measures are being explored to reduce emissions in these areas:

**Smog Summit 2004:** For the fifth consecutive year, representatives from the federal, provincial and municipal governments across the Greater Toronto Area (GTA) joined the City of Toronto to report on accomplishments and announce their new smog and energy reduction initiatives. Action is being taken in the GTA to curb smog and its associated health and economic impacts. The GTA Clean Air Council (GTA-CAC) is an inter-governmental working group dedicated to exploring joint clean air initiatives in the GTA and to liaising with municipalities across Canada to discover best practices for reducing smog. In 2004, Transport Canada provided support to the GTA-CAC in its development of the publication entitled *A Model Clean Air Plan for the Living City*. This model aims to guide municipal governments with a template of an integrated approach to reducing air pollution.

**Aviation and Clean Air:** The Department continued research in 2004/2005 — including making emission inventories, identifying operational opportunities to reduce emissions, and investigating the movements of pollutants and their effects on ozone formation that are specific to Canadian airspace by linking its work to larger research programs and agencies. The Department's Civil Aviation Branch has established partnerships with the National Research Council (NRC) and York University for the emissions modelling component of this study. Work will include developing and evaluating flight sampling methods for a better understanding of the potential impact of aviation emissions on the upper troposphere/lower stratosphere region.

**Rail:** Transport Canada has undertaken a two-year study, which began in 2004, to examine the relationship between taxation and investment for the Canadian railway industry. The analysis will assess to what extent the Canadian tax system impacts on the ability of the Canadian railways to offer competitive services and to invest in existing and new capacity, including more environmental sustainable infrastructure and equipment. Strategic options to improve railway services will be proposed based on the detailed findings. Data gathering has been completed and a final report will be completed by 2006.



**Marine:** In 2004/2005, Transport Canada's Marine Safety group finalized a discussion document and conducted public consultations in order to draft provisions on the International Maritime Organization's *Regulations for the Prevention of Air Pollution from Ships* — Annex VI of the MARPOL Convention. Revised regulatory provisions that incorporate the Annex will be finalized and implemented in 2005/2006. In January 2005, Marine Safety (in conjunction with Environment Canada) reviewed and revised the Pollution Prevention Guidelines for the Operation of Cruise Ships under Canadian Jurisdiction (TP14202), which includes provisions for air emissions.

### **International and Domestic Relationships**

**Great Lakes/St. Lawrence Seaway Study:** In May 2003, Transport Canada signed a Memorandum of Cooperation with the U.S. Department of Transportation to carry out a 30-month evaluation of the Great Lakes/St. Lawrence Seaway system. The two departments, along with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife, Environment Canada, the St. Lawrence Seaway Management Corporation and the St. Lawrence Seaway Development Corporation are working together to carry out a navigation study of the area. The study is aimed at evaluating future infrastructure needs of this area — specifically, the engineering, economic and environmental implications of those needs as they pertain to the marine transportation infrastructure on which commercial navigation depends. In June 2004, the timeframe for the study was extended and it is now scheduled for completion in October 2006. Led by Transport Canada's Marine Policy group, the Environmental Affairs Directorate co-chairs the environmental component of the initiative with the U.S.

The Environment Delivery Team will prepare a report that describes the ecosystem and how it has changed and project, to the extent possible, how it is anticipated to change over the next 50 years. It will take into consideration how decisions made about the future of the navigation system would affect projected ecosystem changes. The Great Lakes/St. Lawrence Seaway Study report, including the engineering, economics and environmental components, is scheduled for completion by fall, 2006.



**Canadian Standards Association:** The Department's Technical Committee on Storage, Handling and Dispensing of Aviation Fuel is an active member of a committee (with the same name) of the Canadian Standards Association (CSA). This committee consists of experts from the aviation fuel handling, storage and regulating community and has developed Canadian Standards Association (CSA) Standard B836 — Storage, Handling and Dispensing of Aviation Fuels at Aerodromes. Revised in May 2005, this is a comprehensive standard covering all aspects of aviation fuel handling, including response to environmental emergencies, fuel spills, environmental issues related to fuel storage and dispensing, as well as the technical aspects of delivering clean, dry and “on-specification” fuel to aircraft. In related work, Transport Canada is a member of an International Air Transport Association sponsored initiative and committee to standardize all aspects of fuel storage and handling worldwide. The committee is looking into harmonizing worldwide standards, including the CSA Aviation Fuel Handling Standard, into one global standard that will be published as a Society of Automotive Engineers guidance document.

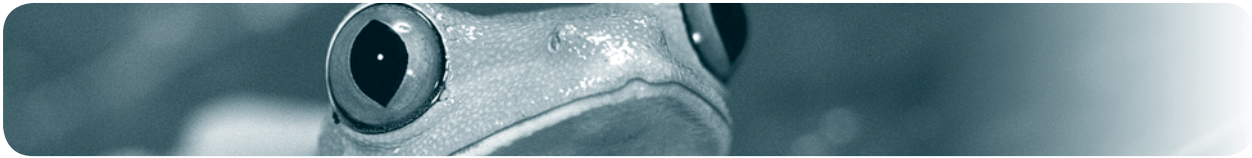
**Center of Excellence:** Transport Canada continues its work with the U.S. Federal Aviation Administration (FAA) and the National Aeronautics and Space Administration (NASA) as a sponsor of the Center of Excellence (COE) for Aircraft Noise and Aviation Emissions Mitigation. In December 2003, the United States established the Partnership for Air Transportation Noise and Emissions Reduction (PARTNER) Center of Excellence (COE). In the spring of 2004, Transport Canada joined the FAA and NASA as a sponsor. The Center is a research organization that leverages a broad range of stakeholder capabilities to foster breakthrough technological, operational, policy and work force advances for the betterment of the environment, mobility and the world's economy. It also seeks to reduce uncertainty in emerging issues of climate impact and health and welfare effects of emissions to a level that enables appropriate actions to be undertaken to address their effects. The Massachusetts Institute of Technology leads the COE, which comprises nine universities. An extensive network of industrial affiliates also participates in the activities of the Center. In efforts to expand Canadian involvement in PARTNER, Transport Canada will be seeking to include Canadian academic and industry research partners.



***International Civil Aviation Organization:*** Transport Canada is an active member of the International Civil Aviation Organization's (ICAO) Committee on Aviation Environmental Protection (CAEP). Through its various working groups, the ICAO addresses the environmental impacts of aviation. Transport Canada contributes its expertise in developing guidance documents published by ICAO/CAEP including ICAO Circular 303 entitled *Operational Opportunities to Minimize Fuel Use and Reduce Emissions*, the *Airport Planning Manual (Doc 9184) Part 2 — Land Use and Environmental Control* and *Guidance on the Balanced Approach to Aircraft Noise Management*. These documents have been promoted in Canada and ICAO has translated them into numerous languages for global distribution and use.

***Partnerships with airport authorities:*** Transport Canada is continually enhancing its partnerships with Canadian airport authorities. Its Mobile Air Quality Monitoring Laboratory spends approximately 12 months at an airport to gather a broad base of data and investigate seasonal fluctuations that may affect air quality. A comprehensive air quality study is planned to commence in April 2005 at the Lester B. Pearson International Airport located in Toronto. Results of this study are expected in 2006.





## Sustainable Development Policy Branch

The Sustainable Development Policy Branch is comprised of three divisions: Sustainable Development Division, the Climate Change and Clean Air Policy Division and the Sustainable Transportation Analysis Division. The Directorate's main responsibility is to develop and analyze strategies and policies to promote sustainable transportation and, in particular, to address climate change in the transportation sector.

### A. Sustainable Development

Sustainable development promotes a balance between economic, social and environmental factors. Given the fundamental role of transportation to Canada's economic prosperity and Canadians' quality of life, the incorporation of sustainable development into Transport Canada's policies, programs and operations is key. Transport Canada's Sustainable Development Strategy, *Sustainable Transportation Lens* and Sustainable Development Capacity Course are three initiatives aimed at achieving this goal.





## Sustainable Development Strategy 2004–2006

### *Sustainable Development Strategy 2004–2006 — Seven Strategic Challenges*

1. Encourage Canadians to make more sustainable transportation choices.
2. Enhance innovation and skills development.
3. Increase system efficiency and optimize modal choices.
4. Enhance efficiency of vehicles, fuels and fuelling infrastructure.
5. Improve performance of carriers and operators.
6. Improve decision making by governments and the transportation sector.
7. Improve management of Transport Canada operations and lands.

Transport Canada's Sustainable Development Strategy 2004–2006 is the Department's third successive three-year strategy, and builds on the accomplishments and lessons learned from its predecessors. It brings more precision to the concept of sustainability, defines seven strategic challenges (see sidebar, this page) and 32 specific commitments for the 2004–2006 period, outlines a set of principles for sustainable development, includes concrete deliverables and performance measures, and defines what the Department can do better to integrate sustainable development into its policies, programs and operations.

Each commitment has targets and performance measures in order to better monitor and track their progress. For the 2004/2005 reporting period, over 85% of the 173 targets were reported to be either complete or on track. For more information regarding Transport Canada's Sustainable Development Strategy, visit: [www.tc.gc.ca/SDS](http://www.tc.gc.ca/SDS)





## *Churchill Air Terminal Heated by Mother Nature*

Churchill Airport in Northern Manitoba (Prairie and Northern Region) is the site of one of Transport Canada's latest sustainable development projects. In keeping with the Department's commitment to safeguarding the natural environment, the air terminal's electric boiler heating system was modified as part of the SolarWall® project (identified in commitment 7.3 of the Sustainable Development Strategy 2004–2006). The SolarWall® system uses economical and environmentally benign solar energy to heat buildings. Prior to this project, fresh air was brought into the building and heated solely by the terminal's electric boiler.

In November 2004, dark-coloured metal cladding was installed on the south wall of the 1,080 square metre terminal building. This metal cladding is heated by the sun, which warms the air near its surface. The terminal building's ventilation fan is connected by a duct to a narrow space between the solar wall and the building. As a result, negative pressure is created, which draws outside air through tiny holes in the cladding. The metal panels then heat the air; as the warmer air rises, it is trapped by an overhanging canopy and pulled into the building. This warm air is then circulated through the building by the existing ventilation system to help maintain a comfortable indoor environment for the travelling public and airline workers. During the warmer summer months, the solar wall is automatically shut off when heat is not required.

Initial monitoring of the solar wall has shown temperature increases in the range of 18°C on overcast days and 26°C on sunny days in January, and up to 38°C in March. This is a trial project and the actual cost savings will be recorded over a three-year period beginning in January 2005. Projected cost savings for the solar wall are estimated to be \$4,570 per year with an estimated 12.9-year payback.

## **Sustainable Transportation Lens**

In its Sustainable Development Strategy 2004–2006, Transport Canada made a commitment to develop a tool — the *Sustainable Transportation Lens* — in order to enhance Transport Canada's ability to make integrated decisions reflecting the departmental mandate to promote a sustainable transportation system. If successful, the Lens could be formally adopted and promoted within Transport Canada's decision-making process and shared with members of the broader transportation sector.



The *Sustainable Transportation Lens* is intended to help policy and program analysts ensure that the Department's policies and programs are supportive of and aligned with the federal government's sustainable development agenda, as well as Transport Canada's principles of sustainable transportation. It is designed as a thought-provoking educational tool that will lead to integrated decision making through the comprehensive consideration of the analytical issues outlined in the Lens. In 2004/2005, Transport Canada developed a draft of the Lens for review and discussion within the Department; once finalized, the Lens will be tested on three case studies to obtain feedback on its usefulness and to identify areas for improvement. The development of this *Sustainable Transportation Lens* is expected to be completed by 2006/2007.

### **A Sustainable Development Capacity Course**

The Department has also made a commitment in the Sustainable Development Strategy 2004–2006 to offer a Sustainable Development Capacity Course on a regular basis to Transport Canada managers and employees across the country. A one-day workshop entitled “Towards a Sustainable Tomorrow — Concepts of Sustainable Development and How They are Applied at Transport Canada” is designed to help Transport Canada managers and employees gain a better understanding of the core principles, processes and implications of sustainable development, as well as provide an in-depth look at sustainable development, from its origins to its current application at Transport Canada. The course will provide its participants with the knowledge and tools to integrate environmental, social and economic considerations in their day-to-day responsibilities.

In 2004, Transport Canada refined the material for this course based on feedback from the 2002 pilot course. Course instructors were then selected through a competitive process. The next steps will be to advertise and deliver the course, in both official languages, at Transport Canada offices across the country, starting in the winter of 2005.

### *Destination Sustainability in the Ontario Region*

The Ontario Region launched Destination Sustainability in 2004/2005, a half-day educational program for Transport Canada employees to learn about sustainable development, the government's responsibilities, and the Department's Environmental Management System and Sustainable Development Strategy. The program has been very well received to date, with 102 employees from all branches attending. It will be offered again on various dates throughout 2005 and possibly into 2006. Participant feedback was positive. Results from fun and not-serious attendee exercises include the creation of bumper sticker and t-shirt phrases such as: “Be wise, environmentalize,” and “Forget incandescent, go fluorescent” on the front of a t-shirt, with “I've seen the light” on the back.



## B. Climate Change and Clean Air Policy

A major challenge of sustainable transportation is to control or prevent air pollution and other air emissions from transportation, such as greenhouse gases (GHGs), nitrogen oxides, volatile organic compounds, particulate matter and other air contaminants. Transport Canada undertakes the necessary policy analysis for the development of new transportation programs, technologies, best practices, policy tools and economic instruments to address GHG mitigation and adaptation in all aspects of the transportation sector. The Department has a key role to play in a number of important initiatives such as the One-Tonne Challenge campaign and the Memorandum of Understanding between the federal government and the auto industry.

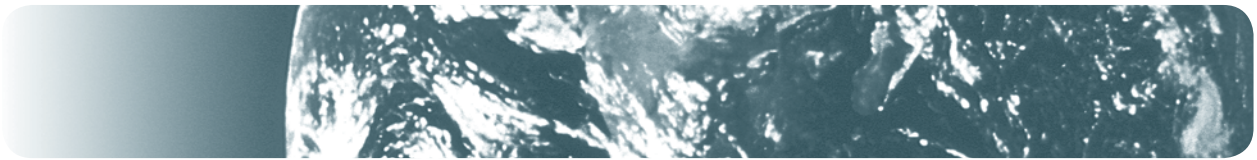
### Climate Change Policy Development

Since its involvement in the Transportation Table on Climate Change (TTCC) in the late 1990s, Transport Canada has been active in the development of measures to reduce GHGs in the transportation sector. The Department has contributed significantly to the transportation component of the government's climate change strategy. The broad range of analysis undertaken by the TTCC and subsequent work has led to the implementation of a number of Transport Canada programs to address GHG emissions in transportation. These include the Advanced Technology Vehicle Program, the Urban Transportation Showcase Program, the Freight Efficiency Program and the Freight Efficiency and Technology Initiative.

Unless action is taken, GHG emissions will continue to rise with increasing population, economic growth and trade. In particular, emissions from freight will escalate. As the Canadian transportation system is very complex, involving many users over a vast territory, the remedy for this challenge requires an integrated and multifaceted approach. With this in mind, Transport Canada has refined existing programs and developed additional measures. These initiatives will be evaluated in the context of a Treasury Board Secretariat review of existing and new programs, to be concluded by fall 2005.

### *Negotiating for Success — Memorandum of Understanding with the Auto Industry*

On April 5, 2005, the federal government and the auto industry agreed on a plan to reduce GHG emissions from light-duty vehicles (cars, minivans, sport utility vehicles and pickup trucks) by 5.3 megatonnes (Mt) in Canada by 2010 — the result of two years of negotiation. Natural Resources Canada (NRCan) was responsible for the voluntary fuel economy negotiations with the auto industry. Transport Canada was a key participant in this process along with Environment Canada and Industry Canada. The agreement is good news for the environment, and it is also good news for consumers who will benefit from new technologies that will lower emissions and reduce fuel costs. At the same time, the agreement gives the auto industry the flexibility it needs to reduce emissions in a cost-effective way.



## The One-Tonne Challenge

The One-Tonne Challenge, a social marketing campaign led by Environment Canada and NRCan with the support of Transport Canada, is a national climate change initiative challenging all Canadians to reduce their GHG emissions, on average, by one tonne (about 20%) by the end of 2006. The campaign provides Canadians with information and resources to allow them to make lifestyle choices to reduce GHG emissions.

### *The One-Tonne Challenge Goes to School in the Atlantic Region*

With the support of Transport Canada, a high school student from Moncton promoted the One-Tonne Challenge through presentations at local high schools, talking with more than 1,000 students. Transport Canada supplied the student with technical support, promotional products and even displayed hybrid vehicles from its fleet at high schools to raise awareness of the One-Tonne Challenge among students and to help them take action on climate change.

During fiscal year 2004/2005, Transport Canada supported various activities of the One-Tonne Challenge campaign in a number of ways, including: actively participating in a number of interdepartmental committees and groups that included the provision of expert advice on transportation-related issues; working towards integrating the One-Tonne Challenge messaging and products into Transport Canada's programs and initiatives; and playing a key role in evaluating and selecting the 47 communities that received One-Tonne Challenge funds to hold community challenges. The Department also participated in a number of fairs and exhibits, and strategic partnerships with private sector stakeholders, and demonstrated leadership in its internal communication activities. In particular, the novel approach the Department developed for engaging its employees in taking the One-Tonne Challenge became a model for departments government-wide. A number of the Department's successes

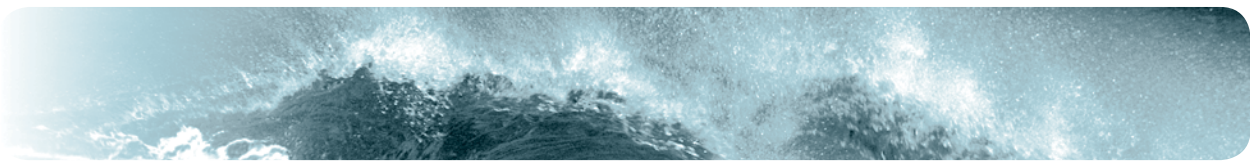
related to this program are featured on the One-Tonne Challenge website at: <http://www.climatechange.gc.ca/onetonne/english/index.asp>.



## **Impact of Transit Investments on Greenhouse Gas Emissions: A National Perspective**

A study being conducted by Transport Canada estimates the national emission reductions achievable by implementing public transit projects identified in municipal plans alone, and in concert with a variety of planned urban transportation policy initiatives. This study was undertaken as part of a series of studies to gain a comprehensive understanding of public transit's contribution to greenhouse gas emission reduction targets in the *Kyoto Protocol*. The study uses the transportation planning models or plans from 10 Canadian cities. The study also assembled case studies for transportation demand management measures and post-implementation impacts from transit projects. A calculator for direct and indirect greenhouse gas emissions was developed that uses the output of municipal transportation models. The final report of this study has yet to be released. .





## C. Sustainable Transportation Analysis

Research and analytical support on various climate change and sustainable transportation issues is an essential component of sustainable development policy. Transport Canada undertakes various initiatives and studies that help to fill data gaps, develop tools for better decision making and facilitate the development of sustainable transportation performance indicators. This work makes an important contribution to the development, assessment and monitoring of transportation climate change mitigation measures.

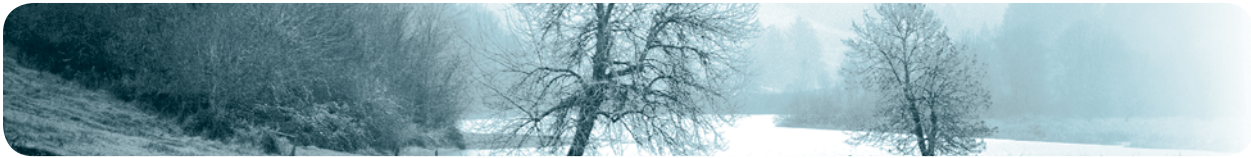
### Supporting the Odometer Reading Reporting Requirement

One of Transport Canada's strategic challenges in the Sustainable Development Strategy 2004–2006 is to improve decision making by governments and the transportation sector. An important part of this strategy is to improve data collection to ensure the availability of consistent, useful information on the various elements of the transportation system. In September 1999, transport ministers approved recommendations to develop a data strategy to address data gaps in the transportation sector in order to better respond to climate change issues — since then, efforts have focused on road transportation. The Department commissioned a study in 2004 to assess the feasibility of using existing registration systems to collect road transportation information by way of a vehicles odometer readings (ODR) program. Findings indicate that a standardized national approach is not an option because of the significant differences in vehicle registration systems in place across jurisdictions. They also demonstrate that the most feasible national ODR reporting program would be a mixture of program types at the jurisdictional level (with the potential to increase the data coverage to as much as 92.4% of the road vehicles stock, at an expected one-time capital cost of at least \$1.2 million and expected annual operating costs of at least \$0.3 million). Conclusions and findings of the study were presented to the Council of Deputy Ministers Responsible for Transportation in September 2004. A copy of the feasibility study is available upon request from Transport Canada, Environmental Affairs.

### The Costs of Urban Congestion in Canada Study

A study conducted by Transport Canada provides the first comprehensive and systematic analysis of urban congestion in Canada. In this respect, it represents a major contribution to our understanding of urban congestion in Canada. This study is part of Transport Canada's efforts to better understand the co-benefits of urban measures to reduce greenhouse gas emissions, thus allowing the department to revise their cost-effectiveness. *The Costs of Urban Congestion in Canada* study developed congestion indicators for the nine largest urban areas in Canada: Québec, Montréal, Ottawa-Gatineau, Toronto, Hamilton, Winnipeg, Calgary, Edmonton and Vancouver. It measured recurring congestion, which is the daily situation in major cities where demand for a transportation facility exceeds its capacity to move people and goods quickly.





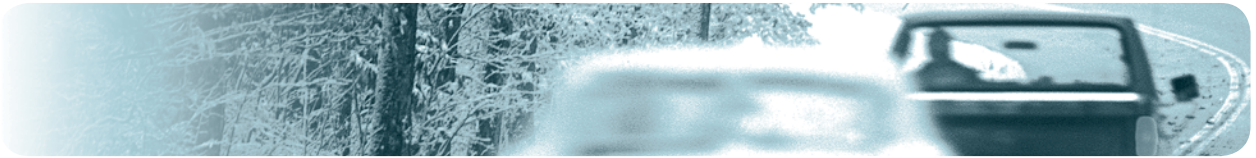
## Transit Cost-Benefit Software Tool

The Department released a new software tool in November 2004 that helps transportation planners make more environmentally friendly urban transit decisions. TransDec provides a framework for analyzing a wide range of prospective transit investments, as well as for rehabilitation and maintenance work, and applies to various transit modes including bus systems, light rail, heavy rail, commuter rail and highways. In addition to assessing traditional transportation costs, this unique software assesses benefits related to GHG and pollution emission reductions, transportation safety, traffic congestion, increased mobility and community development. It allows users to create and analyze a specific scenario, with the goal of improving urban transit decision making. Governments, transit authorities, universities, non-governmental organizations and independent contractors working for these organizations can use TransDec free of charge (<http://www.tc.gc.ca/programs/Environment/EconomicAnalysis/model/menu.htm>), or they can purchase a commercial licence from HLB Decision Economics, which developed the software and is the sole owner of all rights to the model. Since its release, Transport Canada has continued to improve TransDec. A user manual will be available on Transport Canada's website in 2005 or early 2006.

### *Headquarters Analyzes Economic Incentives*

Over the last year, promoting the production and purchase of more fuel efficient motor vehicles has been the focus of a Transport Canada led interdepartmental working group. As part of this work, using a new vehicle sales modeling framework originally developed by the U.S. Oak Ridge National Laboratory (ORNL) and adapted for the Canadian market by the Department with the collaboration of ORNL, the Department is assessing the impacts of a "feebate system." This system involves providing incentives for the purchase of the more fuel efficient vehicles and the use of penalties (taxes or fees) for purchases of less fuel efficient vehicles. Over the course of the year, the Department has developed in-house expertise, as well as developing and refining the framework — work that will continue into 2006.

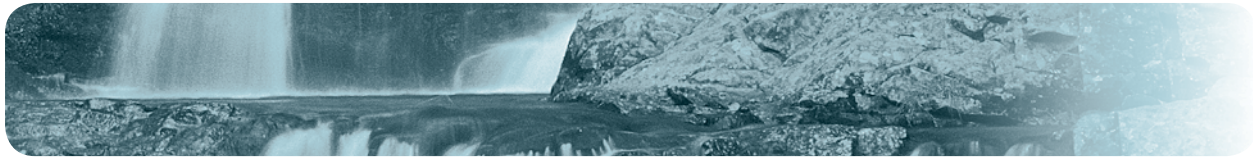
Feebates were identified in the 2005 Federal Budget as a fiscal measure to address climate change that merits further evaluation. The National Round Table on the Environment and the Economy (NRTEE) was charged with developing options for a feebate, to consult and to make recommendations to government for the next Federal Budget. NRTEE is using the model developed and refined by Transport Canada to analyze various options, and the Department also supports NRTEE's work with its analytical expertise. NRTEE is expected to present its recommendations in November 2005.



## Environmental Initiatives Branch

The Environmental Initiatives Directorate develops and administers programs and special initiatives to support a more sustainable transportation system in Canada, including through the reduction of GHG emissions from transportation.

The branch's main responsibilities include: the completion of fuel efficiency, safety and environmental evaluations and showcasing of available and soon-to-be-available advanced vehicles and technologies; supporting the development/integration of strategies, transportation planning tools and best practices so as to reduce GHG emissions; demonstrating, measuring, and monitoring the effectiveness of a range of integrated urban GHG strategies; supporting of community-level projects that demonstrate measurable sustainable transportation benefits to Canadians; supporting demonstrations and the purchase and installation of fuel efficiency enhancing technologies and best practices; supporting demonstrations of marine shore power; negotiating voluntary performance agreements for the reduction of GHG emissions from the freight transportation industry; and engaging stakeholders in partnership and capacity building.



## A. Advanced Technology Vehicles Program and Motor Vehicle Fuel Consumption Program

The Government of Canada announced its Action Plan 2000 on Climate Change in October 2000 – outlining a comprehensive package of 37 measures to reduce greenhouse gas emissions in all sectors of the Canadian economy. The plan was designed to put Canada firmly on the path to meeting the GHG emission reduction targets contained in the Kyoto Protocol, and captured many of the best ideas coming out of Canada’s national consultations with stakeholders on climate change. One of Action Plan 2000’s five measures for the transportation sector is the Motor Vehicle Fuel Efficiency Initiative, which called for a significant improvement of the fuel efficiency of on-road motor vehicles by the year 2010. Canada ratified the *Kyoto Protocol* in December 2002 and released the *Climate Change Plan for Canada* (2002). The new plan incorporated the Motor Vehicle Fuel Efficiency Initiative of Action Plan 2000 and called for a 25% reduction in fuel consumption (or 5.2 megatonne (Mt) reduction of greenhouse gases) for new on-road motor vehicles by 2010.

Officials within the Environmental Affairs Directorate were actively engaged in an interdepartmental effort led by Natural Resources Canada to reach a voluntary agreement with automakers to achieve this goal. On April 5, 2005, the Government of Canada and the Canadian automobile industry signed an agreement to act on climate change. Under the agreement, carmakers will voluntarily work to reduce annual GHG emissions from light-duty vehicles by 5.3 Mt in 2010. To assess progress toward meeting this target, a joint industry-government monitoring committee, including a representative from Transport Canada, has been established.

The 5.3 Mt agreement exceeds the reduction needed to improve fuel efficiency by 25% and targets all GHGs, going beyond the reductions in carbon dioxide emissions associated with fuel efficiency.



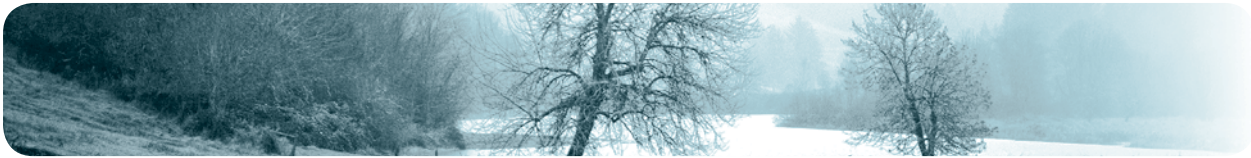
The Advanced Technology Vehicles Program (ATVP) is part of the Motor Vehicle Fuel Efficiency Initiative. Under ATVP, currently available and soon-to-be-available advanced vehicles and technologies are being evaluated to determine their impact on fuel efficiency, safety and the environment. Developed and managed (until 2004) by the Departments Road Safety and Motor Vehicle Directorate, ATVP and its management was relocated to Transport Canada's Environmental Affairs Directorate is currently working on expanding and extending the program past its sunset date of March 2006.

Opportunities to meet the environmental challenges through incremental, evolutionary change are rapidly diminishing. We are on the threshold of a technological revolution that will introduce the advanced vehicle technologies needed to meet our environmental challenges head on. New classes of small light vehicles, battery electric, hybrids, fuel cell and alternative low-carbon fuel vehicles are poised for introduction over the next decade.

### *Good News, Bad News ...*

There are more than 21 million licensed drivers and some 23 million cars, trucks and buses registered in Canada. Emission standards for road vehicles in Canada are harmonized with those of the United States and are among the most stringent national emission standards in the world. Emissions of regulated pollutants (hydrocarbons, carbon monoxide, oxides of nitrogen and particulate matter) have been reduced by up to 98% from pre-control days. Parallel programs on fuel efficiency administered by the Directorate have more than doubled the fuel efficiency of light-duty motor vehicles since the early 1970s.

Despite these substantial improvements, road vehicles remain the single largest contributors to domestic air pollution and the single largest consumers of fossil fuels in Canada. They account for about a third of the air pollution problem and a quarter of the GHG emissions in this country, and there is no comfort in recent trends. The use of on-road diesel fuel and on-road gasoline has grown by 74% and 44%, respectively, between 1990 and 2000 due to increases in the size and use of the vehicle fleet. Without some intervention, fuel demand will continue to increase in the future. This situation is not environmentally sustainable, nor is it consistent with the expectations of the public for environmental protection.



## Advanced Technology Vehicles

In order to meet the 2002 Climate Change Plan's goal to reduce GHG emissions from vehicles on the road in Canada by 2010, ATVP has focused on advanced vehicles and technologies that can be available in the near term (e.g., new powertrains and engine developments; advanced direct injection gasoline and diesel engines; supercharging/ turbocharging; advanced transmission systems; and low rolling resistance tires and regenerative braking). New construction materials and methods, as well as the use of advanced or low-carbon fuels, are also emerging.

Fuel consumption improvements for advanced powertrains are summarized in Table 5. These improvements are not cumulative in all cases but are intended to give a flavour of the magnitude of the impact of individual technologies. Improvements in fuel consumption of the new car and light-duty truck fleet of 25% to 40% are possible in the next decade using the advanced technologies identified.

**Table 5: Summary of Fuel Consumption Improvements for Selected Advanced Technologies**

| Technology                     | Estimated Improvement in Fuel Consumption | Technology                      | Estimated Improvement in Fuel Consumption |
|--------------------------------|---|---------------------------------|---|
| Gasoline Direct Injection      | 15%                                       | Hybrid Electric Vehicles        | 20%–30%                                   |
| Advanced Diesel Engines        | 40%                                       | Battery Electric Vehicles       | 75%                                       |
| Sequential Spark Ignition      | 10%–15%                                   | Fuel Cell Vehicles              | *50%–80%                                  |
| Variable Valve Timing and Lift | 6%–8%                                     | Advanced Transmissions          | 2%–8%                                     |
| Cylinder Deactivation          | 7%–10%                                    | Supercharging and Turbocharging | 5%–10%                                    |
| Variable Displacement          | 40%                                       | 42V Electrical Architecture     | 7%  |
| Variable Compression Ratios    | 30%                                       | Low-Rolling Resistance Tires    | 3%–5%                                     |
| Idle Stop                      | 6%–8%                                     | Regenerative Braking            | *30%                                      |

\*Energy Efficiency Improvements





## Program Goals

The goal of ATVP is to participate in Transport Canada's efforts to reduce GHG emissions from transportation sources and achieve a sustainable transportation system for Canada that is sustainable. The program is aimed at reducing GHG emissions from on-road vehicles by:

- » evaluating the fuel efficiency, emissions and safety performance of advanced technology vehicles
- » identifying opportunities and market potential for the introduction and use of advanced technology vehicles
- » identifying barriers to the introduction and use of advanced technology vehicles and recommending remedies
- » raising public awareness of advanced technology vehicles and their benefits
- » supporting Transport Canada's environmental programs

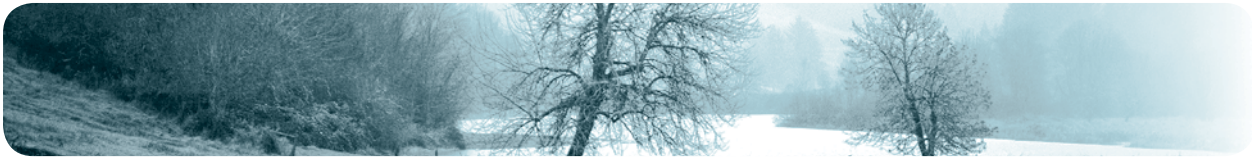
## Program Activities

A program of acquisition, inspection, evaluation, testing and showcasing of advanced technology vehicles has been designed and implemented to meet the program goals.

**Vehicle Acquisition:** ATVP is targeting near-term advanced technology vehicles. The design, development and production of advanced vehicles and technologies from around the world are being monitored by the Directorate to identify and acquire suitable candidates for the program fleet. As of March 2005, the program's fleet numbered 126 advanced vehicles.

## Vehicle Inspections

There are 827 separate requirements of the *Canada Motor Vehicle Safety Standards and Regulations* under the *Motor Vehicle Safety Act* to which compliance of a passenger vehicle can be determined by visual inspection. Vehicles in the ATVP fleet are being inspected to ascertain their state of compliance with these requirements. The results of these inspections can help identify regulatory barriers to the introduction of advanced technology vehicles in Canada and highlight opportunities to streamline, modernize and modify regulations to facilitate the introduction of advanced technology vehicles in ways that do not compromise the environment or safety.



## **On-Road Evaluation**

Most vehicles in the ATVP fleet undergo an on-road evaluation. The vehicles are driven on public roads through all seasons and driving conditions. This permits an assessment of the vehicle in real-life conditions and a determination of how well the vehicle fits in with other vehicles and traffic on Canadian roads. Evaluations of a broad range of vehicle characteristics and performance parameters are made.

## **Instrumented Track Testing**

Program engineers and technicians put the advanced vehicles through their paces at Transport Canada's Motor Vehicle Test Centre. This is a comprehensive test facility located on a 1,200 acre site in Blainville, Québec, which has the laboratory and track facilities necessary to properly test these vehicles under controlled conditions.

## **Laboratory Testing**

On-road and instrumented track tests are complemented by a series of formal laboratory tests. Chassis dynamometers at Environment Canada are used to measure emissions and fuel consumption. Safety labs at the Transport Canada Test Centre are used to test:

- » occupant protection in front, rear and side crash tests
- » roof strength
- » side door strength
- » seat belt anchorage
- » defroster performance
- » anti-lock brake performance on ice
- » brakes (service and parking)
- » bumpers
- » noise



## Showcasing Technology

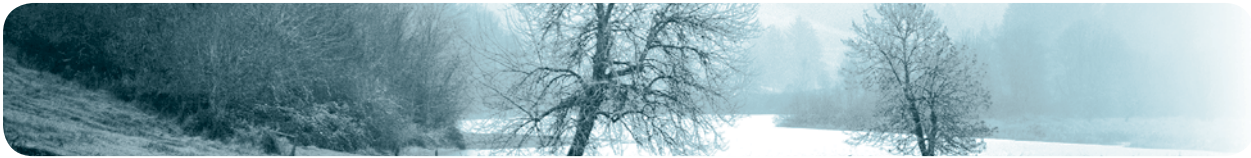
Public events are a fundamental part of ATVP as a means of raising public awareness of advanced technology vehicles and their benefits. The program reaches the public through a variety of approaches, such as: publishing articles about ATVP and advanced technology vehicles in newspapers, magazines and books; preparing television programs and interviews, as well as live Internet interviews; and preparing vehicle displays at conferences and various public events. As of March 2005, ATVP had participated in some 145 events reaching an estimated audience of over 7 million Canadians. Feedback from the public is used to determine the general level of acceptance, knowledge and interest in the advanced vehicles and in the goals and objectives of the program.

## Other ATVP Activities

A number of other activities and initiatives help ATVP to fulfill its goals. These include:

***United Nations Economic Commission for Europe, Working Party 29, Working Party on Pollution and Energy (UNECE/WP.29/GRPE):*** This working party (operating under the United Nations Economic Commission for Europe's Inland Transport Committee) administers a number of agreements, including the 1998 *Global Agreement on the Harmonization of Vehicle Technical Regulations*. This Agreement, to which Canada is a signatory, is a forum for countries to participate in an effective way in the development of harmonized global technical regulations for on- and off-road vehicles. The Environmental Affairs Directorate participates in the Working Party on Pollution and Energy (GRPE), a subsidiary working party of Working Party 29, where regulations concerning pollution of the environment, noise disturbances, new powertrain technologies and conservation of energy (fuel consumption) are developed. The Directorate also participates on a number of other safety-related working groups. Harmonization of global technical regulations for vehicles is critical for the introduction and use of advanced technology vehicles. The work of Transport Canada, with the various working parties of the UNECE/WP.29, is meant to advance this objective.

***Special Studies:*** In addition to the vehicle evaluations and tests described, a number of special studies are being performed, including: vehicle safety vs. vehicle size/weight; a comparison study of international safety regulations (Japanese, UNECE, U.S., Australian and Canadian); a comparison of international rear barrier crash test requirements; harmonization of global motorcycle braking standards; motorcycle fuel system integrity; and fuel cell vehicle codes and standards.



### The Fuel Consumption Program

One of the goals of the Fuel Consumption Program is to promote public awareness of vehicle fuel efficiency. This is done by encouraging the use of standardized fuel consumption labels on each new vehicle, and by publishing the same information in the annual *Fuel Consumption Guide* booklet. Both methods are designed to assist consumers in making energy-efficient purchase decisions. Another goal is to monitor the average fuel consumption of the Canadian new vehicle fleet. This is done by collecting detailed motor vehicle fuel economy and engine technology data, and by testing selected new model vehicles. The program also encourages improvements in the fuel efficiency of the new vehicle fleet by setting annual company average fuel consumption (CAFC) goals for the motor vehicle industry.

Manufacturers and importers of vehicles strive to meet or improve upon the CAFC goals established under the voluntary program. Additional incentives are also available to encourage the motor vehicle industry to increase the production of vehicles that operate on alternative fuels, for example, natural gas, methanol, propane or electricity.

## B. Urban Transportation Programs

The Urban Transportation Programs Division administers two programs that encourage more sustainable transportation in Canada's cities and communities, including through the reduction of GHG emissions. These programs are supporting a wide range of municipal and non-profit partners to test and implement cost-effective transportation strategies. The co-benefits of these programs support other important policy objectives for the transportation system in Canada, such as smog reduction, congestion relief and improved health. The programs are:

- » funding for innovative, community-based sustainable transportation projects, through the **Moving on Sustainable Transportation (MOST)** program
- » funding for integrated urban transportation "showcase" projects that demonstrate, evaluate and promote cost-effective strategies for reducing GHG emissions, through the **Urban Transportation Showcase Program (UTSP)**
- » a web-based national Information Network that shares innovative approaches to planning, implementing and measuring the results of sustainable urban transportation initiatives, which is a component of UTSP



## Moving on Sustainable Transportation

This program encourages the development and promotion of innovative sustainable transportation strategies by funding community-level projects that demonstrate measurable benefits to Canadians. It works to demonstrate how Canadians can better understand and take action on sustainable transportation issues. MOST supports projects developed by NGOs, community organizations, educational institutions, labour organizations and other non-profit projects supported by businesses or professional associations. The types of projects eligible for MOST funding include: studies and analyses; development of innovative tools or practices; demonstration pilot projects; workshops, strategy sessions or seminars; and education and outreach initiatives that increase awareness of sustainable transportation alternatives. The program covers up to 50% of eligible project expenses up to a maximum contribution of \$100,000 over two years. Applications are accepted twice a year, on June 1 and December 1. In 2004/2005, the Department approved contributions totaling \$855,194 to 20 projects across Canada — for initiatives to expand car-sharing systems, plan for smart growth, make forest industry transportation operations more efficient, and make it safer and more convenient for young people to move around in their communities. More program information is available at: [www.tc.gc.ca/most](http://www.tc.gc.ca/most)

### *Community Bicycle Network's BikeShare*

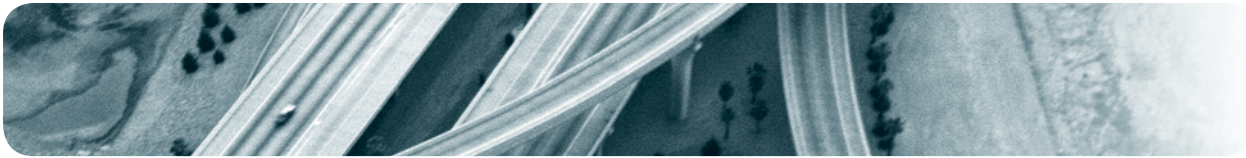
The Community Bicycle Network's (CBN) BikeShare offers a fleet of bicycles for its members' use, located at hubs throughout Toronto. Through the contribution of the MOST program, BikeShare has expanded its service and developed new private and public sector partnerships. With a current inventory of 14 BikeShare hubs and 181 bikes in service, BikeShare offers members access to bikes for up to three days — for an annual membership fee of \$25.

BikeShare's fleet of bicycles served over 800 members who traveled an estimated 50,260 kilometers. Using estimates on the amount of emissions saved by cycling instead of driving, the program reduces emissions of a number of substances: 283,333 kilograms of carbon monoxide, 22,667 kilograms of nitrogen oxide, 15,583 kilograms of carbon dioxide and 36,833 kilograms of volatile organic compound emissions that otherwise would have been emitted into Toronto's air.

CBN partners with organizations such as the Toronto Transit Commission (TTC), GO Transit and Moving the Economy to develop "multi-modal" hubs that bring a seamless connection between different modes of sustainable transportation together in one location. BikeShare also partnered with local schools, community groups and community centres to expose parents and children to cycling as a healthy transportation alternative.

As a leader for community bike-lending in Canada, BikeShare is an important source of information about active transportation choices for other municipalities. To date, CBN has been approached by 13 organizations from across North America that are planning their own bike-lending programs.





## The Urban Transportation Showcase Program

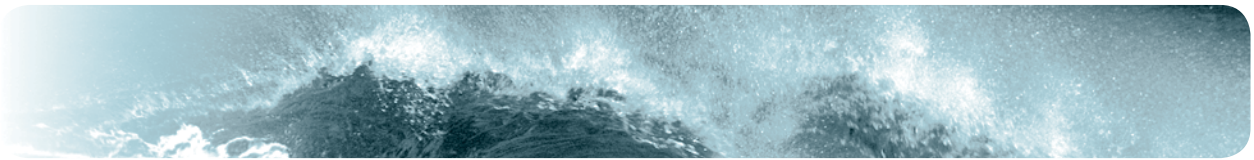
UTSP aims to reduce GHG emissions from urban transportation through the implementation of showcase demonstrations across Canada, and through the sharing of information on the most successful approaches to encourage replication. The demonstrations are resulting in new bus rapid transit facilities, new cycling and pedestrian infrastructure, commuter options programs, clean propulsion technologies and much more. Implemented in an integrated fashion, these showcases also aim to make sustainable transportation more convenient, improve air quality, make more efficient use of infrastructure, and improve the quality of life in cities and communities across Canada. The program's website links Canadian municipalities and transportation practitioners to urban transportation solutions, and includes a variety of information on showcase project results, additional Canadian case studies, an image bank and links to other information sources, as well as listing award winners.

In 2004, showcase demonstrations in five city regions (Halifax, Waterloo, Greater Toronto Area and Hamilton, Vancouver and Whitehorse) were launched.

In Halifax, the city is building two bus rapid transit corridors that connect the downtown, with its 25,000 workers, to surrounding communities and to commercial and institutional destinations along these routes. Buses in the corridors will run about every five minutes in peak periods, and will operate with only limited stops to minimize travel times. Transit priority measures, including exclusive lanes, queue jumps and special traffic signal timing at congested intersections, will reduce delay for buses travelling in mixed traffic and help to keep the buses on schedule. New station facilities will make passenger transfers comfortable and convenient. In both corridors, stations will offer real-time bus arrival information based on Halifax's existing automatic vehicle location system. Stations would also permit the innovative integration of specialized transit services for persons with disabilities.



Photo Credit: Lana Langley, Halifax Regional Municipality



In the **Greater Toronto Area and Hamilton** showcase, a public-private partnership, called the Smart Commute Initiative is being developed to manage the demand for transportation. A regional umbrella organization and a network of local organizations will develop innovative strategies to create more travel choices, offer incentives for shared forms of travel and reduce the dependency on single-occupant vehicle travel. Services will include: ride-matching for carpooling and emergency rides home, employer vanpools, and a regional marketing and education campaign.

In the **Region of Waterloo**, a high-quality express bus service is being established to attract new transit riders. The express service will connect four downtowns, major university facilities, as well as office complexes, major hospitals and regional shopping centres, with longer bus stop spacing than local routes. To create an express service without building a separate transitway, the region will equip the buses with Global Positioning Systems and put in place transit priority measures at traffic signals. The buses will be equipped with bike racks and improvements will be made to the existing pedestrian and cycling infrastructure to make the link between walking, biking and transit easier and more convenient for passengers. As well, the region is developing customer service improvements such as a web-based trip planner, and a concentrated marketing and outreach plan to encourage increased ridership.

The **City of Whitehorse** is improving reducing two four-lane roads to two lanes with a centre left-turn lane, and sheltered pedestrian crossings are being added. As well, three major multi-use trails between downtown and residential areas are being improved with new connections and river crossings, lighting and stairs at steep grades. The city is adding trees, lighting, benches, bicycle racks, transit shelters and transit information to enhance walkability and transit use in the downtown area. Finally, a roundabout is being installed at a major intersection to reduce vehicle speeds and improve safety

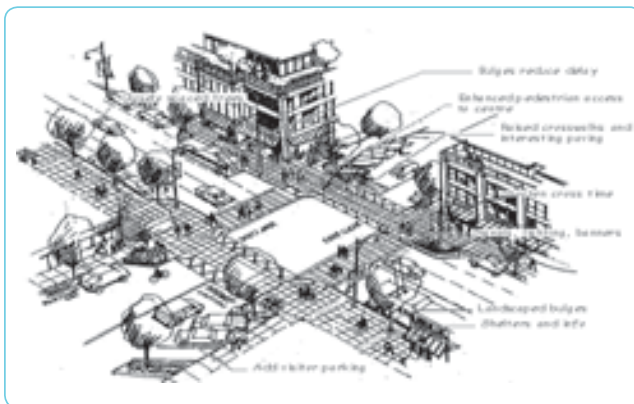




for all road users. The city is also developing a marketing and outreach plan, including anti-idling campaigns and a commuter challenge, as well as transportation demand management initiatives such as a carpool matching system, a bicycle fleet for downtown, and a personalized trip planning portfolio campaign, tracking participants' travel habits and offering them customized information on travel options.

In **Greater Vancouver**, Translink (the Greater Vancouver Regional Transportation Authority) is implementing six strategies to improve the way people move around. One of the six elements involves a redesigned Main Street program — to reduce bus delay, shorten pedestrian crossing times, improve pedestrian safety and improve the vitality of the streetscape. Another is the development of the Central Valley Greenway — a 22-kilometre route that will become the spine of the region's cycling network by connecting many destinations and giving cyclists, pedestrians and other active transportation users a safer and more comfortable alternative to

shared facilities on roads. The Greenway will let users bypass half of the roadway intersections along its length, and bicycle priority measures will be implemented at other traffic signals. The region will also retrofit two buses with hybrid engines and put them into full-time revenue service to demonstrate their viability and reliability.



Sketch Credit: Frank Ducote



**Transit Villages** are planned for four locations, with measures such as traffic calming, lighting, pedestrian crossings, transit shelters and bike lockers (in the short term), new bike routes, transit services and bylaw changes (in the mid term), and land use plan amendments and planning for major capital expenses (in the long term). And, finally, the Goods Movement Efficiency Strategy is a study to develop new models and policies to make freight activity more efficient by identifying a range of initiatives to reduce GHG emissions from freight, such as new technologies, infrastructure, logistical measures, incentives and road priority measures.



### **Information Network**

Throughout 2004, UTSP's Information Network had 12 learning events that focused on international and Canadian sustainable urban transportation case studies, active transportation, transportation demand management, transit and related topics. A total of 877 members of the program target group attended these sessions. Two awards programs were supported — the Transportation Association of Canada's Sustainable Urban Transportation Award and the Federation of Canadian Municipalities' Sustainable Transportation Award. The recipients were the Regional Municipality of Waterloo for its "You can clear the air" Grade 3 Curriculum Supplement and Translink for their U-Pass Program, respectively. Twenty-five sustainable urban transportation case studies were developed and posted on the program website. More program information is available at: [www.tc.gc.ca/utsp](http://www.tc.gc.ca/utsp)





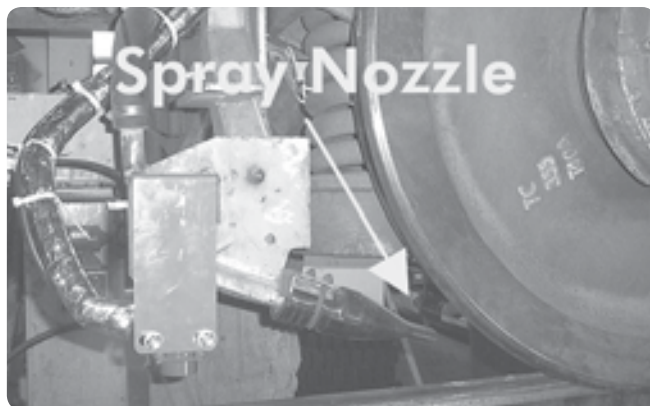
## C. Freight Environmental Initiatives

The Freight Environmental Initiatives Division administers freight transportation programs in order to reduce the growth of greenhouse gas emissions in the freight transportation sector. The programs are designed to develop partnerships with freight transportation associations and companies to improve their energy efficiency and competitiveness through innovative operating practices and technology commercialization. The programs also offer important co-benefits for other transportation objectives such as clean air and safety. Highlights of the Division's responsibilities and work over 2004/2005 are presented below.

### Funding for Demonstrations and Technology Incentives

The Freight Sustainability Demonstration Program supports the demonstration and evaluation of tools, technologies and best practices that can help companies in the freight transportation sector reduce their fuel consumption and GHG emissions. The program puts new and underutilized tools and technologies, as well as new operational practices, to the test in real-world situations to demonstrate and evaluate their fuel-saving potential. To date, the program has approved the funding of 30 projects over six funding rounds for a total of approximately \$3 million. The selection of projects under Round 7, now underway, is planned for completion by September 2005. Highlights of a few of the projects funded in 2004/2005 are set out in the sidebar, while information on all the funded projects is available at: <http://www.tc.gc.ca/programs/environment/freight/FETI/FSDP/Reports/menu.html>

The Freight Incentives Program provides funding to encourage companies in the rail, air and marine freight transportation industry to purchase and install technologies that cost effectively reduce GHG emissions. The program gives companies the chance to make their fleet more energy efficient without having to shoulder the entire expense and risk of the technology investment. To date, the program has approved the funding of three projects over one funding round for a total of approximately \$1 million. The selection of projects under Round 2 is progressing and should be finalized by September 2005.







***Marine Shore Power Pilot Project:*** This project was designed to demonstrate and evaluate the cost effectiveness of shore power as an alternative to ship idling while in Canadian ports. Shore power has been identified as a promising method to reduce the growth of GHGs and other pollutants in the marine sector. Transport Canada is taking the lead in a Marine Shore Power Feasibility Study to determine suitable locations for marine shore power in Canada. Subject to the findings of the study, up to three marine shore power pilots will be funded through a competitive process. The maximum contribution for each pilot is up to \$1 million over a two-year period. Selection of locations for pilot projects will be through a competitive process, and based on a facility's activities, potential for GHG reductions, and potential to operate marine shore power cost effectively. The study, identifying a short list of 10 to 15 suitable locations for marine shore pilot projects, was completed this summer. Following the public release of the study, members of the Environmental Initiatives group will conduct information sessions across Canada to present the results of the study and encourage eligible port facility operators to submit proposals.



## **Joint Industry/Government Capacity-Building and Awareness Initiatives**

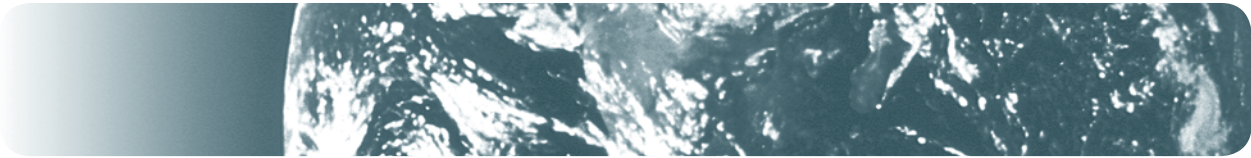
To date, through the Freight Efficiency and Technology Initiative, the Department organized and co-funded five major modal conferences or workshops to promote fuel-efficient practices in all modes. The **Charting the Course: Marine Fuel Efficiency and Emissions Conference** was held in January 2005, in Toronto, and presented information on the latest technology solutions for reducing fuel use and emissions in Canada's marine industry, as well as on practical industry experiences and actions that have saved fuel in the marine industry, and an overview of national and international legislation and policies concerning emission reductions in the marine sector. Over 86 participants from industry and government attended, and evaluation results showed that participants found the conference valuable.



## *RailPower Hybrid Switching Locomotive Technology*

**IDC Distribution Services Ltd.** of Vancouver, BC, has been selected for funding of \$370,000 for the purchase of a Railpower Hybrid Switching Locomotive — Green Kid. The Green Kid locomotive will be used as a switching locomotive to transfer railcars between the common user storage tracks owned by the Fraser River Port Authority and the ramp tracks located on the facility. IDC Distribution Services Ltd. has estimated that the use of a Green Kid will reduce fuel consumption by as much as 57% when compared with a traditional locomotive.





## *Freight Sustainability Demonstration Program — A Sampling of Funded Projects*

**Kelsan Technologies Corp.** received almost \$225,000 for its Top of Rail Friction Control project, which saw the company demonstrate its patented friction modifier technology on two BC Rail freight locomotives. Twenty test runs were completed; 10 runs without the system spraying and ten runs with the system spraying, on a loaded 45 sulphur car test train travelling on the BC Rail system between Chetwynd and Prince George. Results indicate



that reductions in fuel consumption and GHG emissions are achievable (with a potential annual reduction in emissions of 2.1% to 3.0% of

total freight railroad emissions).

**Hudson's Bay Company** has been selected for funding of just over \$28,000 to demonstrate the potential of biodiesel (B20 — 20% biodiesel and 80% regular diesel) in 12 dedicated transport trucks over a one-year period. In partnership with Energy Advantage, Volvo Canada, Topia Energy and Canada Clean Fuels, dedicated Volvo trucks will be monitored to determine the impact of biodiesel on emissions, fuel efficiency, vehicle performance and maintenance, and will explore the feasibility of generating GHG, nitrogen oxide and sulphur dioxide emission credits.



**Air Transat** has been selected for funding of \$200,000 to demonstrate the potential for reduction of fuel consumption, GHG emissions and noise abatement for the entire aircraft fleet (four Airbus-330, five Airbus-310 and five Lockheed 1011-500) through the implementation of a series of fuel-saving measures. The measures include, among others, flight procedures, aircraft operating weight and payload data, load planning, minimum fuel-track planning and cost indexing. The overall target is to reduce the annual fuel consumption by 3% to 8%.



## *Voluntary Performance Agreements*

An agreement between the Government of Canada and the Air Transport Association of Canada (ATAC) to reduce the growth of GHG emissions in Canada's aviation sector was signed by Minister J.C. Lapierre and Cliff Makay of ATAC on June 29, 2005. The first of its kind in the aviation sector in Canada and in the world, the voluntary agreement will reduce emissions both domestically and internationally. Negotiation of a Memorandum of Understanding with the rail industries is well advanced; discussions continue with the Railway Association of Canada. A study to identify and establish emissions reduction targets was completed in the summer.

### **Government/Industry Voluntary GHG Reduction Agreements**



Under this component, voluntary performance agreements will be established between the federal government and industry associations within each mode — rail, marine, aviation and trucking — to outline concrete initiatives for reducing GHG emissions. Agreements will include an emission reduction target and an action plan to achieve that target.

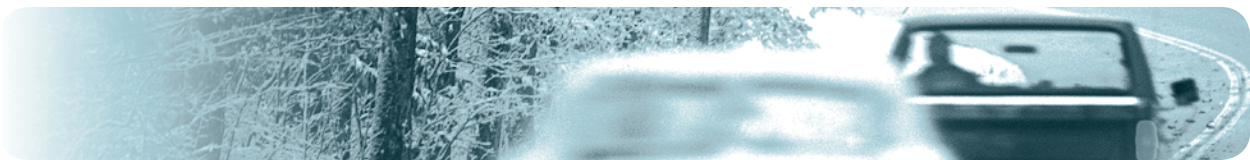
### **Industry Awareness Program**

The objective of this program is to conduct an awareness program with shippers and freight forwarders to enhance their understanding of the environmental impacts of their transportation decisions and improve uptake of fuel-efficient transportation alternatives available to them — all with the aim of reducing GHG emissions.

The program will look to developing material to increase freight system user awareness of sustainable alternatives for the transportation of goods. A key challenge will be to ensure that the products developed relate to efficiency improvements and business cost benefit. A concept paper for the shippers' awareness program has been developed and consultation with government and key industry partners is a priority for 2005.







## 2004/2005 — Major Progress on Many Fronts

This report has outlined the work of the Environmental Affairs Directorate and Transport Canada's regional offices. Standing back from the individual accomplishments, a look back over the year's activities demonstrates that:

- » Partnerships and collaborative work have been increasing — in 2004/2005, many, if not most, projects called on the Directorate and the Regions to collaborate with other Directorates in the Department, with other federal departments and agencies, as well as with counterparts in provincial and territorial governments, the private and voluntary sector, and international organizations.
- » The federal government focus on climate change has been the driver for many of the Directorate's efforts, and will likely continue to be so, as Transport Canada continues to work to play its part in reducing greenhouse gas and other harmful emissions.
- » Increasing stakeholder and public awareness on a number of fronts has become an increasingly important aspect of the Directorate's work — a public that is more educated about the issues and factors that contribute to climate change requires more sophisticated information. The Directorate will continue its information, communication and consultation work with the public.
- » Funding of innovative projects and programs that tap into the expertise of the private sector has been an important tool — one that will further solutions to environmental challenges. At the same time, the Directorate continues to develop its in-house expertise so that it can continue to provide expert advice to the Department, other federal departments and agencies, and to international initiatives.

The coming year will present new challenges and opportunities. Preparations will begin to develop a new Sustainable Development Strategy and the Environmental Affairs Directorate will want to ensure continual improvement by looking for new and innovative ways to integrate environmental, economic and social considerations into decision-making. This report has documented numerous achievements and, looking forward, we hope to build on these to bring about a more sustainable future.





## List of Acronyms

|             |   |           |  |
|-------------|---|-----------|--|
| ADMS —      | Airport De-Icer Management System                           | MOST —    | Moving on Sustainable Transportation                             |
| ATAC —      | Air Transport Association of Canada                         | MOU—      | Memorandum of Understanding                                      |
| ASD —       | Aircraft Services Directorate                               | Mt —      | megatonne  |
| ATVP —      | Advanced Vehicle Technology Program                         | NAS—      | National Airports System   |
| CAEP —      | Committee on Aviation Environmental Protection              | NASA —    | National Aeronautics and Space Administration                    |
| CCME —      | Canadian Council of Ministers of the Environment            | NCR —     | National Capital Region  |
| COE —       | Center of Excellence  | NCS —     | National Classification System                                   |
| CEAA —      | Canadian Environmental Assessment Act                       | NGOs —    | non-governmental organizations                                   |
| CEPA 1999 — | Canadian Environmental Protection Act, 1999                 | NRC —     | National Research Council  |
| CESD —      | Commissioner of the Environment and Sustainable Development | NRCan —   | Natural Resources Canada   |
| CSA —       | Canadian Standards Association                              | NRI—      | natural resource inventory                                       |
| EA —        | Environmental Assessment                                    | NRTEE —   | National Round Table on the Environment and the Economy          |
| EMS —       | Environmental Management System                             | NWPA —    | Navigable Waters Protection Act                                  |
| FAA —       | Federal Aviation Administration                             | ODR —     | odometer readings  |
| FCSAAP —    | Federal Contaminated Sites Accelerated Action Plan          | ORNL —    | Oak Ridge National Laboratory                                    |
| FHIO —      | Federal House in Order                                      | PARTNER — | Partnership for Air Transportation Noise and Emissions Reduction |
| GGO —       | Greening Government Operations                              | PCBs —    | polychlorinated biphenyls  |
| GHG —       | greenhouse gas  | ppm —     | parts per million  |
| GTA —       | Greater Toronto Area  | QAP —     | Quality Assurance Program  |
| GTA-CAC —   | Greater Toronto Area Clean Air Council                      | SARA —    | Species at Risk Act  |
| IATA—       | International Air Transport Association                     | SEA —     | Strategic Environmental Assessment                               |
| ICAO —      | International Civil Aviation Organization                   | SERTS —   | Site Environmental Remediation Tracking System                   |
| ISO —       | International Organization for Standardization              | SMART —   | Species Management and Research Tool                             |
| LNG —       | liquefied natural gas                                       | TTC —     | Toronto Transit Commission                                       |
|             |   | TTCC —    | Transportation Table on Climate Change                           |
|             |   | UNECE —   | United Nations Economic Commission for Europe                    |
|             |   | US —      | United States  |
|             |   | UTSP —    | Urban Transportation Showcase Program                            |
|             |   | WP —      | Working Party  |





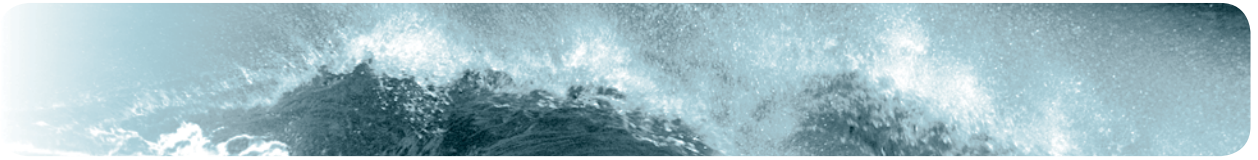












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