Airport Environmental Management Systems

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Environmental Issues

- Sustainable Development Strategy
- Sustainable Transportation Strategy
- Environmental Management System
- Awareness/Training
- Environmental Assessment
- Environmental Protection
- Environmental Auditing
- Land Transfers
- Contaminated Sites
Why Do We Need an Environmental Program

- Legislation/Legal Requirements
- Policy
- Harmonization
- Safety
- Liability
- Public image/pressure
Environmental Protection
Pollution Prevention

- **Pollution Prevention** - “the use of materials, processes or practices that reduce or eliminate the *creation* of pollutants and waste at the source”
Environmental Emergency Planning

- Plans
- Procedures
- Exercise
- Reporting
Water Quality
Sources of Contaminants

- Vehicle/ship/aircraft maintenance
- Aircraft/runway de-icing
- Dredging
- Grounds maintenance - pesticides
- Environmental spills - fuel/chemical
- Construction
Water Quality Management

- Monitoring/compliance
- Management programs
- Awareness
- Consultation
Air Quality Issues

- Climate change (greenhouse effect)
- Nitrogen Oxides (NO$_x$) and Volatile Organic Compounds (VOCs)
- Smog and ground level ozone
- Sources of NO$_x$ and VOCs
- NO$_x$ and VOCs management
- Ozone Depleting Substances (ODS) management
Air Quality Impacts

- Aircraft engine emissions
- Aircraft refuelling and storage
- Airport ground service vehicles
- Ground transport accessing the airport; and
- Other, including:
  - auxiliary power units
  - aircraft engine maintenance activities
  - power/heat generation
  - fire fighting training burns
  - catering
Several Environmental Issues:
- Air Quality
- Water Quality
- Soil Contamination
Waste Management

- Hazardous Waste Management
  - CEPA Regulations
  - International Agreements

- Non-Hazardous Waste Management
  - Reduce, reuse, recycle
  - Green floors at TC headquarters
  - Airport Waste Management Manual
Aircraft Noise Management
Management Plan and Program

- A noise management program:
  - Considers present and future noise climate
  - Considers interests and needs of airport neighbours, airlines and aviation systems and procedures
  - Outlines steps to be taken to minimize noise impacts

- Results:
  - Successful community relations
  - Responsible relations with airport users
  - Reduced pressure for operational restrictions
Aircraft Noise Management Program Components

- Runway Use Restrictions
- Noise Abatement Procedures
- Land Use Planning
Wildlife Control Program
The Problem

- **Bird strikes:**
  - Downtime for inspection and repair of aircraft
  - Aborted flights, re-scheduling of passengers and cargo
  - Affects schedules of connecting flights

- **Wildlife:**
  - Small mammals attract birds & other mammals
  - Mammal strikes can result in the same delays as birds
Hazardous Materials
Site Remediation
TRANSPORT CANADA’S ENVIRONMENTAL MANAGEMENT SYSTEM
Transport Canada’s Sustainable Development Strategy

- Transport Canada is developing its strategy through two components
  1. an external component, the Sustainable Transportation Strategy (STS) to focus on the transportation sector
  2. an internal component, the Environmental Management System (EMS) to manage Transport Canada’s operations in an environmentally responsible manner
What is an EMS?

- the total of all Transport Canada’s policies, programs and procedures which the department uses to manage its environmental affairs and to monitor the effects of its actions on the environment
Transport Canada’s EMS

- Transport Canada has developed the EMS based on the International Standards Organization (ISO) 14000 standard and the Federal government’s “A Guide to Green Government”

- The development and implementation of an EMS in Transport Canada is fundamental to the achievement of the goal of integrating environmental considerations into daily decision-making and to meeting the objectives of sustainable development
Transport Canada’s EMS

- The first step in the development of TC’s EMS was the production of a corporate EMS Manual that would provide the framework for the entire department.

- The manual has been compiled based on input from a number of internal working group meetings and workshops, and the ISO 14000 guiding principles.
Transport Canada’s EMS

- ISO 14001
  - Section 4.1 General Requirements
  - Section 4.2 Environmental Policy
  - Section 4.3 Planning
  - Section 4.4 Implementation and Operation
  - Section 4.5 Checking and Corrective Action
  - Section 4.6 Management Review
Transport Canada’s EMS

The TC EMS Manual consists of three parts:

- **Part A** - contains the general requirements including sections for revision history and distribution of the manual
- **Part B** - contains higher level EMS components including departmental environmental policy, environmental aspect identification, departmental objectives/targets and legislative requirements
- **Part C** - contains procedures and practices currently associated with day-to-day operational control activities
Transport Canada’s EMS

**Part A**
1) Index
2) Introduction
3) Revision
4) Distribution

**Part B**
5) Environmental Policy
6) Environmental Aspects
7) Objectives and Targets
8) Environmental Management Programs
9) Responsibility and Authority
10) Reporting System
11) Management Review
12) Legal Requirements and Codes of Practice
13) Federal Policy/Agreements
14) EMS Documentation
Air Emissions
- ground vehicles/equipment
- aircraft
- painting
- heating plants (fuel oil/bunkers)
- incinerators
- vessel loading/unloading

Land Management
- contaminated and potentially contaminated sites
- waste disposal sites
- building management
- construction
- dredging operations
- detention ponds
- leased properties

Hazardous Materials Management
- PCBs
- petroleum
- explosives
- acids in batteries
- pesticides and herbicides
- radioactive materials
- aircraft fire fighting foam
- underground storage tanks
- aboveground storage tanks

Resource Use
- fuels
- energy consumption
- water use

Noise Emissions
- aircraft/helicopters
- construction sites

Waste Management
Non-Hazardous Waste
- cardboard
- paper
- wood
- glass
- aluminum cans
- general
Hazardous Waste
- motor oil/lubricants
- antifreeze
- aviation fuel
- solvents
- fuels
- batteries
- contaminated dredge
- contaminated soil
- biomedical waste

Water
- storm and surface water
- sewage discharges
- ground water impacts

Emergencies Response
- spills - fuels
- spills - chemicals
- fires
- aircraft/marine disasters
## Transport Canada’s Environmental Objectives and Targets

<table>
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<th>Significant Aspect</th>
<th>Objective</th>
<th>Targets</th>
<th>Co-ordinator</th>
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<tr>
<td>Resource Aspect</td>
<td>1. Water Reduction</td>
<td>5%/base year 1997-2000</td>
<td>Manager Environmental Protection</td>
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<td></td>
<td>2. Energy Reduction</td>
<td>5%/base year 1997-2000</td>
<td>Manager Environmental Protection</td>
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<tr>
<td>Land Management</td>
<td>3. Identification &amp; Management of Contamination</td>
<td>100% properties by 2003</td>
<td>Manager Site Remediation</td>
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<td>Waste Management</td>
<td>4. Reduction of Non-Hazardous</td>
<td>10% 1997 - 2000</td>
<td>Manager Environmental Awareness</td>
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<td>5. Reduction of Hazardous Waste</td>
<td>10% 1997 - 2000</td>
<td>Manager Environmental Protection</td>
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<td></td>
<td>6. Elimination of In-Storage PCB Waste</td>
<td>100% 1998</td>
<td>Manager Site Remediation</td>
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<td>Hazardous Material</td>
<td>7. Registration &amp; Upgrade of TC AST/UST</td>
<td>100% 2000</td>
<td>Manager Site Remediation</td>
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<td>8. Inventory of ODS</td>
<td>100% - Dec. 1997</td>
<td>Manager Environmental Protection</td>
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<td>Water</td>
<td>9. Develop Monitoring Program for all facilities</td>
<td>2000</td>
<td>Manager Environmental Protection</td>
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<td>Emergency Response</td>
<td>10. Emergency Plans at all Sites</td>
<td>1999</td>
<td>Manager Environmental Protection</td>
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Transport Canada’s EMS

- The corporate EMS will give rise to five regional models that will mirror the national framework.
- Enable the department to track its performance regionally and on a national basis.
- On-line computer-based approach for data management.