

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



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Why Do We Need an Environmental Program

- ◆ Legislation/Legal Requirements
- ◆ Policy
- ◆ Harmonization
- ◆ Safety
- ◆ Liability
- ◆ Public image/pressure



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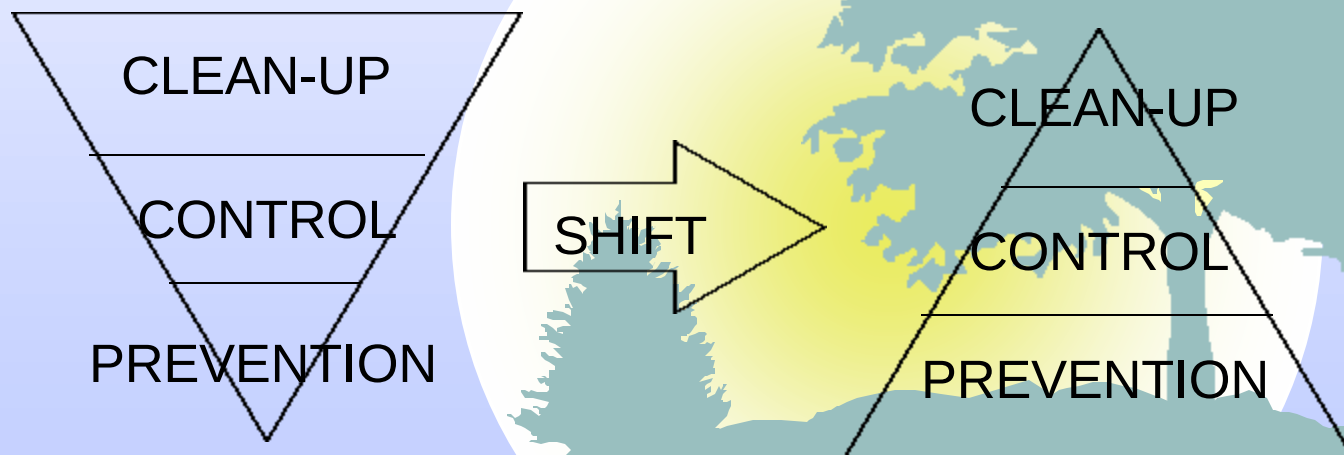
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Environmental Protection

Pollution Prevention

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



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Environmental Emergency Planning

- ◆ Plans
- ◆ Procedures
- ◆ Exercise
- ◆ Reporting



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Water Quality

Sources of Contaminants

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



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Water Quality Management

- ◆ Monitoring/compliance
- ◆ Management programs
- ◆ Awareness
- ◆ Consultation



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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



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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



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Fire Training Issues

Several Environmental Issues:

- ◆ Air Quality
- ◆ Water Quality
- ◆ Soil Contamination



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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



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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



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Aircraft Noise Management Program Components

- ◆ Runway Use Restrictions
- ◆ Noise Abatement Procedures
- ◆ Land Use Planning



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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



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Hazardous Materials



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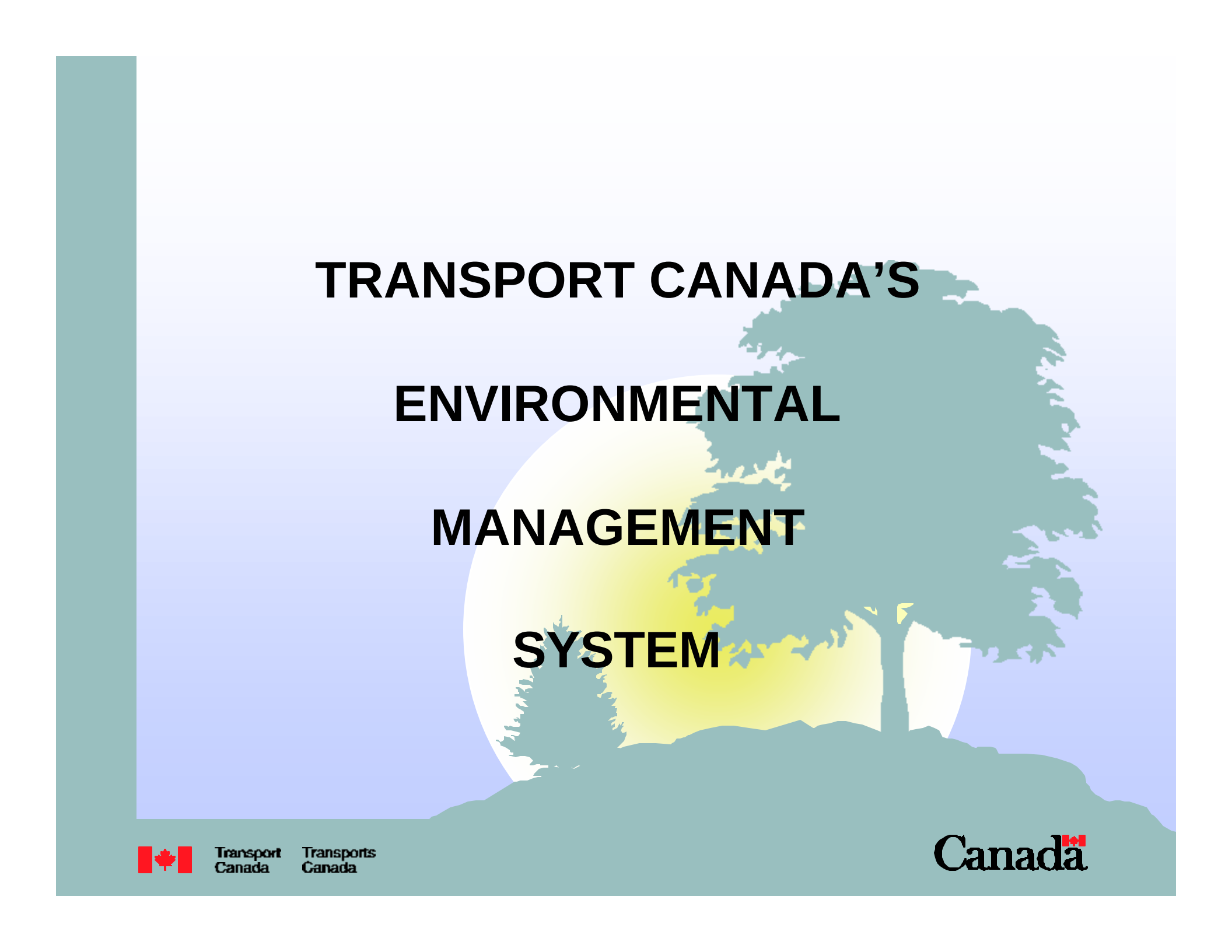
Site Remediation



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TRANSPORT CANADA'S ENVIRONMENTAL MANAGEMENT SYSTEM



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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



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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



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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



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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



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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



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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



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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



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TRANSPORT CANADA

Air Emissions

- ground vehicles/equipment
- aircraft
- painting
- heating plants (fuel oil/bunkers)
- incinerators
- vessel loading/unloading

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 dredgate
- contaminated soil
- biomedical waste

Emergencies Response

- spills - fuels
- spills - chemicals
- fires
- aircraft/marine disasters

Water

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

Land Management

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

Hazardous Materials Management

- | | |
|------------------------------|------------------|
| -PCBs | -ODS |
| -petroleum | -glycol |
| -explosives | -asbestos |
| -acids in batteries | -paints/solvents |
| -pesticides and herbicides | |
| -radioactive materials | |
| -aircraft fire fighting foam | |
| -underground storage tanks | |
| -aboveground storage tanks | |

Transport Canada's Environmental Objectives and Targets

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



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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



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