

Chapter 11

Sustainable Development and Environmental Management System (EMS)

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This chapter of the *Final ESPR* describes the status of Massport's sustainability initiatives, which focus both on the broad concept of sustainability and the specific actions that promote sustainable design and development. These measures include Massport's Sustainable Development Program and the Pilot Environmental Management System (EMS) Program at Hanscom Field. This chapter presents a discussion on the following:

- Reduced use of toxic materials by Massport at Hanscom Field
- Massport's sustainable design program at Hanscom Field
- Sustainable design approaches to rehabilitation and expansion of existing facilities
- Report on the EMS Program at Hanscom Field

Sustainable Development

The *Draft ESPR* provided a detailed discussion of sustainability. In this discussion, sustainability is defined as the integration of economic development and environmental stewardship, while meeting societal needs. The World Commission on Environment and Development ("Brundtland Commission") defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This broad concept, which acknowledges the inter-relationships among economic, environmental, and societal needs, is summarized below.

- Sustainability is a practice in which the use of renewable resources is balanced against their current and future availability, as well as the individual and commercial needs for those resources, under the principle that consumption of resources should not lead to their exhaustion or permanent damage.
- Use of natural resources includes not only their direct consumption in processes, but encroachment upon nature through development and land use. Because natural resources are limited, their future economic and societal value is expected to increase over time.
- To date, sustainability has achieved its greatest success as voluntary programs wherein citizens, organizations, and businesses formulate plans that balance the needs of economic prosperity with environmental health.

In September 2000, New Ecology, Inc., a non-profit environmental organization, sponsored the September 25, 2000 Regional Sustainability Summit at the Massachusetts Institute of Technology. The American Planning Association (APA) guiding principles were adopted for this summit to establish a framework for discussing the following sustainability strategies:

- Focus development in concentrated mixed-use areas where a) transit, pedestrian and bicycling options are easily accessible and supported; b) diverse housing types are in close proximity to jobs and services; and c) new development makes efficient use of existing infrastructure.
- Implement development that maximizes energy and resource conservation (e.g., water) and minimizes materials that are derived from endangered environments, and those which require high levels of energy to produce.
- Prevent waste and view waste as a resource.
- Develop transportation alternatives to gas and diesel-powered vehicles and maximize easy access to public transit and non-motorized transportation options.
- Implement development that minimizes use of building materials and practices that contain toxic materials or that produce toxic waste in their production cycles.
- Establish and maintain open spaces that support plant and wildlife habitat to increase ecosystem diversity and recreation opportunities.

A survey and a literature review conducted by APA showed that the concepts of "sprawl" and "sustainability" are tightly intertwined. In April 2002, the APA established a "Policy Guide on Smart Growth" in an effort to address the issues of "sprawl" and influence public policy to meet those concerns raised by the Smart Growth movement, along with the challenges of sustainability and equity. The Guide states, "Smart Growth should not be limited to combating the symptoms of sprawl. The protection of unique and prime agricultural land to avoid premature conversion to urban and suburban uses, as well as ecological and societal considerations, should be addressed".

Reduced Use of Toxic Materials at Hanscom Field

Massport is a small quantity generator and user of hazardous waste and toxic materials, respectively. Nevertheless, Massport is committed to reducing the potential for the discharge and release of toxic materials. Less and non-toxic alternatives are evaluated and implemented where applicable. Massport periodically looks for ways to reduce the use of toxic materials including evaluation of products for replacements with non-toxic alternatives and implementation of terminal area paper recycling programs. Massport also works with the tenants to identify ways to reduce the amount and toxicity of certain products used at Hanscom Field.

Massport involves its tenants in achieving environmental compliance and pollution prevention. Massport provides ongoing technical assistance to tenants regarding new regulations and means for compliance through an inspection program. In addition, educational materials are distributed on pollution prevention, stormwater best management practices, spill prevention and response procedures, and other topics.

Massport periodically sends tenants reminder notices of upcoming regulatory requirements. In 2000, these notices regarded topics including Massachusetts Contingency Plan, Stage II vapor recovery and low sulfur



diesel requirement deadlines under the Clean Air Act; notification requirements under the Emergency Planning and Community Right-to-Know Act; and requirements under the Toxic Use Reduction Act.

Sustainable Design Program at Hanscom Field

Massport has initiated development of a formal sustainable design and construction program for use in airport projects. The program will establish specific criteria for designer selection and design review, as well as requirements for use of green technologies that foster the efficient use of resources such as energy, water and air. These guidelines will be applicable to Massport and tenant projects alike.

Massport, as part of the Clean Fuel Vehicle Program, has made progress in bringing Alternative Fuel Vehicles (AFVs) into its fleet at Hanscom Field. At present, Massport owns nine fleet vehicles (three sedans, one SUV, one van and four light trucks) at Hanscom Field, one of which is electric. The two non-AFV sedans in the Massport fleet at Hanscom Field have a fuel economy of approximately 23 miles per gallon. There is one electric recharging station at Hanscom Field. Massport will continue to consider AFVs for any new vehicle purchase in the future. Also, since Massachusetts has adopted the California Low Emission Vehicle program, any new conventional-fueled vehicle added to the Hanscom fleet in the future will have very low emissions and will automatically comply with the low emission goals of the federal Clean Fuel Fleet Program (40 CFR Part 88).

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Sustainable Design Approaches to Rehabilitation and Expansion of Existing Facilities

As part of its project approval process, Massport requires contractors to adhere to construction guidelines relating to:

- Construction debris and demolition waste recycling
- Selection of high efficiency space heating/cooling systems
- Soil treatment and reuse on site (Soil Management Plan)
- Construction worker vehicle trip limitation.
- Clean Construction Initiative

Additionally, each project is reviewed to determine if sustainable design elements can be incorporated into the specific project.

Stormwater Best Management Practices

Massport uses Best Management Practices (BMPs) to control the stormwater effects of construction projects at Hanscom Field and has conducted design reviews to ensure that new facilities improve the quality and character of the airport while minimizing environmental impacts. It is Massport's policy that stormwater runoff after a construction project will not exceed the stormwater runoff that existed at the particular site prior to construction of the new facility.

Clean Air Construction Initiative

As part of the Hanscom Environmental Management System implementation and Massport's continued commitment to reduce impacts to the environment, Massport implemented the DEP Clean Air Construction



Initiative/EPA's voluntary Diesel Retrofit Program. Implementation of the initiative requires contractors to retrofit their heavy equipment with advanced pollution control devices during construction of all Massport projects. Contractor-owned equipment such as front-end loaders backhoes, cranes and excavators will be retrofitted with oxidation catalysts and low particulate filters. These devices filter out and break down harmful diesel emissions of hydrocarbons, particulate matters and carbon dioxide.

Environmental Management Program at Hanscom Field

In May 2001, Massport obtained International Standard Organization (ISO) 14001 certification for the Hanscom Field EMS. Hanscom Field was the first airport in the nation to have its EMS certified to the ISO 14001 standard. ISO 14001 certification is a milestone for Massport in achieving its sustainability goals. The implementation of the EMS at Hanscom Field will encourage the use of sustainable principles.

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International Organization for Standardization (ISO) 14001 Certification

The ISO 14000 series of international standards addresses environmental issues associated with the activities, products or services provided by an organization. The standards are designed to be incorporated into any company type and size. The voluntary program involves creating an EMS as a way of implementing a proactive environmental program promoting pollution prevention, sustainable development and continuous improvement. The EMS is intended to include a corporate environmental policy, environmental performance evaluation, and comprehensive system auditing. This process allows for continual evaluation and improvement in environmental performance.

To date, the ISO 14001 environmental management systems have been implemented primarily by international companies conducting business overseas. A number of European airports including Dublin, Sandefjord, Hamburg, and Heathrow, as well as Pearson Airport and Aeroports Montreal in Canada, are ISO 14001 certified/compliant.

Environmental Management System

An EMS is a systematic approach to dealing with the environmental aspects of an organization. It is a tool that enables an organization of any size or type to control the impacts of its activities, products or services on the natural environment. Massport has chosen to implement an EMS as a step that will assist with the vision of becoming a sustainable organization.

During development and implementation of the EMS at Hanscom Field all activities that interact with the environment were analyzed in accordance with the ISO 14001 standard and the EMS manual developed by Massport. Massport evaluated all of these interactions and established programs to address those that were deemed significant. These programs include, but are not limited to: stormwater; hazardous and solid waste; noise; wastewater and vehicle emissions. Fugitive emissions from chemicals were analyzed. It was determined that the quantities of these materials used by Massport and Hanscom tenants were not significant, and therefore further action was not needed at this time.

Massport's EMS is based on the ISO 14001 standard, which includes the following sections:

1. Policy
2. Planning
3. Implementation and Operation
4. Checking and Corrective Action
5. Management Review.

The ISO 14001 Standard is voluntary. Massport made the decision to become certified to the standard. This entails having a third party audit the system to ensure that it is being implemented and progressing toward objectives and targets.

Implementation of the EMS at Hanscom Field included training all employees at the facility. Each employee and tenant was given at least an overview training. This training included a summary of the policy and the programs that are part of the EMS. In addition, roles and responsibilities for the EMS were discussed and personnel with specific responsibilities received additional training.

In order to ensure that progress is being made toward meeting the EMS targets and objectives, audits of the system are conducted. These audits are performed by an internal auditor and then by a third party auditor. These audits are required as part of Massport's EMS and also to retain the ISO 14001 certification.

The final element to the EMS at Hanscom Field is management review. Massport senior staff play a key role in reviewing the EMS and also in determining next steps. There is a Management Review Meeting held regularly to review the results of the audits and to determine if changes to the system are required.

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