

# Section 6

## Framework for Implementing an Environmental Management Program

This section presents a basic framework for the incorporation of an environmental management program into the structure and day-to-day operations of a port. The framework utilizes an environmental management systems (EMS) approach to determine whether a new or improved program is required and how a port should organize its environmental management activities. An EMS provides an overall management approach for evaluating environmental risks associated with current operations, assessing how well avoid environmental impacts and risks, and developing new processes to improve environmental conditions.

The primary reasons for creating a port-wide environmental management program are to:

- Provide a systematic and consistent approach to environmental improvements including impact reduction and control.
- Reduce operating costs by eliminating, or significantly reducing, remedial actions.
- Enhance public, customer, and supplier/vendor perception of the port through proactive protection of the natural resources and the public.
- Establish and maintain a positive corporate image.
- Promote and enhance port and tenant staff awareness and their shared responsibility to protect the environment.
- Enhance cooperation with regulatory authorities.

While no one environmental management program is suitable for all ports, this section discusses a process for assessing a port's environmental management needs including suggested elements that could be included in an environmental management program, and presents typical environmental management structures currently employed by ports.

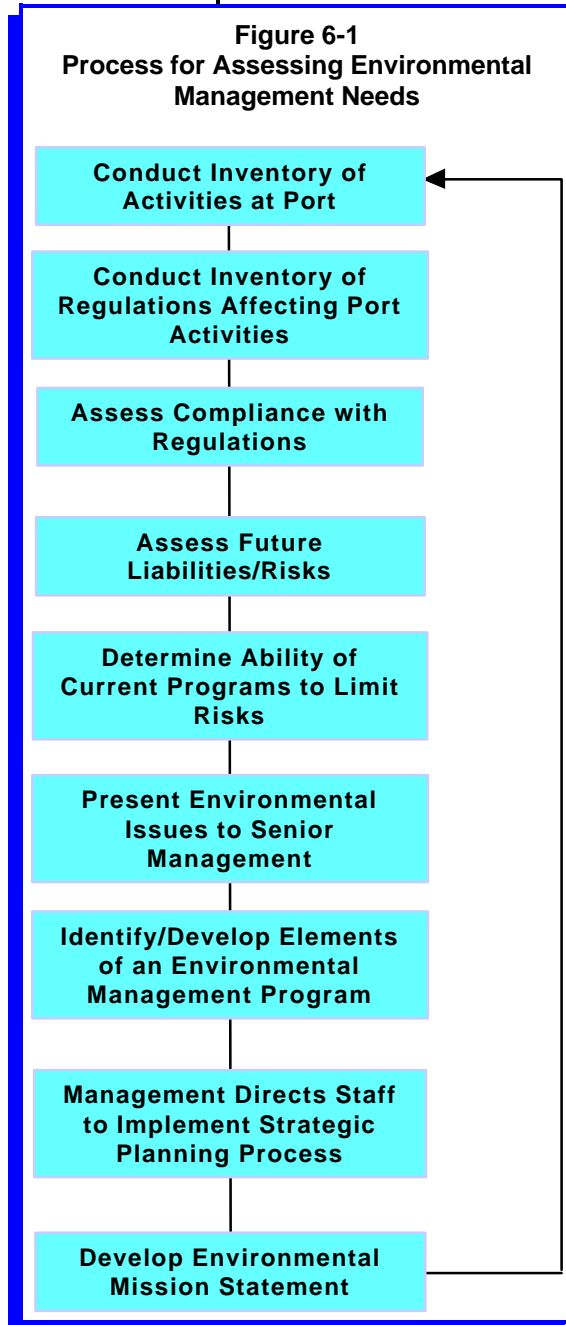
### 6.1 Assessing a Port's Environmental Management Needs

A concern for many ports is the cost for developing and implementing their environmental management program. This is particularly true for smaller ports that have limited financial resources to effectively monitor and oversee these activities, and minimize impacts. This section provides a process that can be used by any port, regardless of size, to assess their existing environmental conditions and management procedures, leading to improvements in environmental management techniques. The process is flexible, allowing individual ports to develop and implement a strategy based on the resources it has available.

#### 6.1.1 *Evaluation of Environmental Management Needs*

There are a wide variety of strategies that can be employed to improve environmental conditions at a port depending on available funding, local public perception and concerns, regulatory climate, and the degree of risks posed by the port or tenant activities. Because each port's management structure and culture is different, this section describes a basic methodology for assessing environmental conditions and selecting the most effective management approach tailored to their own situation.

Figure 6-1 presents a process for assessing the environmental procedures and conditions at a port using an EMS approach, leading to the development of an effective environmental management program. Each port may find itself at a different level in this chart. However, the chart can be used at any time to reevaluate the port's programs, make midcourse corrections, or institute new processes or procedures. Each step in the process is described below:



- Conduct Inventory of Activities. This step involves developing an inventory of the activities conducted at the port, including both port and tenant operations ranging from bulk storage of materials to storage and handling of small amounts of chemicals. One method to develop the inventory is through either an inventory or environmental compliance audit as discussed in Section 4.
- Conduct Inventory of Regulations Affecting Each Activity. In this step, a summary of applicable environmental regulations, and how they affect each operation, is developed.
- Assess Compliance with Regulations. This step involves a detailed assessment of whether the activities conducted at the port are in compliance with the regulations. This step can be included in an environmental compliance audit, or conducted separately after the activity inventory is conducted.
- Assess Future Impacts/Risks. In this step, the port looks forward, examining the trends in the port industry (e.g., increase in the size of ships or type of cargo) as well as the potential changes to local, state, and federal regulations that may affect port operations.
- Determine Ability of Current Programs to Limit Risks. This step involves evaluating the ability of the current structure to effectively minimize or eliminate environmental impacts. If impacts are being managed effectively, then no further action may be required. However, it may be determined that additional programs or procedures are required.

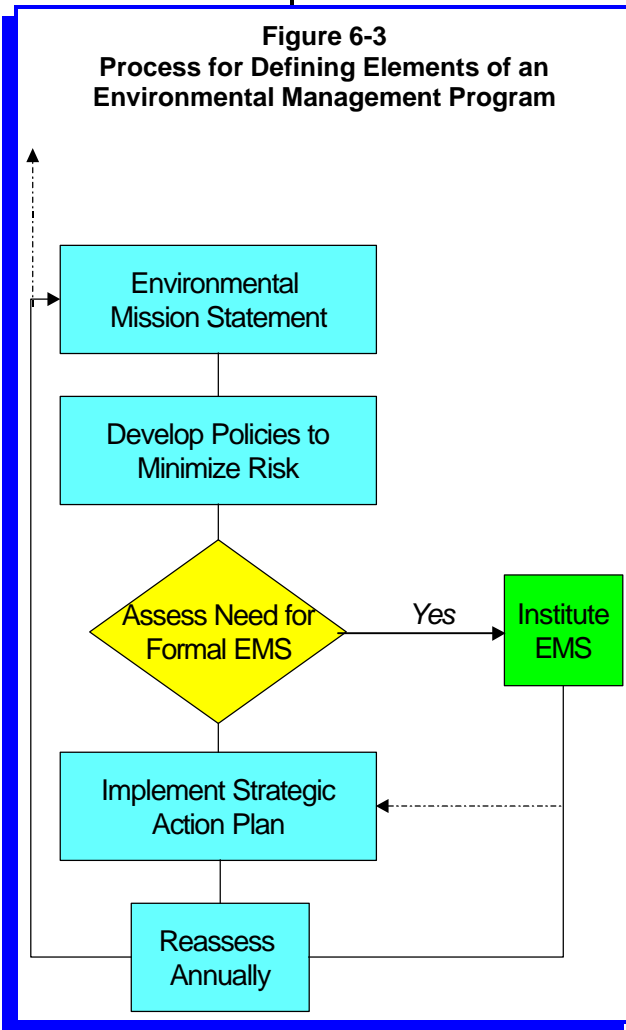
- Present Environmental Issues to Senior Management. This step involves presenting the types of activities, their potential impacts on the environment, potential cost savings associated with proactive management, potential risks, and their regulatory compliance status to the port's senior management.
- Identify/Develop Elements of an Environmental Management Program. In this step, senior management identifies the major elements and the implementation process for a new or revised environmental management program.
- Management Directs Staff to Implement Strategic Planning Process. Once management has determined the need for improvements, they should fully support and direct staff in strategic environmental management planning process. While this step may be conducted separately, it should ultimately be integrated into port's overall strategic planning process.

- Develop Environmental Mission Statement. The most important step in the planning process is to define a port's environmental management mission. A "mission statement" defines the port's purpose and intentions in relation to environmental matters and sets the tone for the port's environmental management program. **Figure 6-2**, at the end of this section, presents selected sections from a variety of port authorities.

Once the environmental mission statement is developed, the port would then begin a process of defining the elements of its environmental management program, again utilizing the EMS approach, as shown in **Figure 6-3**.

These steps include:

- Develop Policies to Minimize Risks. Once the current and potential future impacts have been defined, the port would develop policies intended to guide future actions. Policies can be either general and encompass several issues, or specific to each environmental issue. For example, a general policy may be to develop standard lease language that provides more environmental risk protection.
- Assess Need for Formal EMS. In this step, a port decides if they should institute a formal EMS process. For many ports, simply using an EMS system to evaluate and develop an effective environmental management program will be sufficient based on available resources or activities at the port. However, some larger ports may decide that they need to use, and possibly become certified as in compliance with a specific EMS, such as ISO 14000.



- Develop and Implement a Strategic Action Plan. This step involves developing a series of actions required to implement each individual policy. The actions developed for each policy are then combined into one comprehensive action plan that sets a time line for implementation, presents the cost for implementation, identifies responsible parties, and includes a mechanism for informing management about the progress made in implementing the plan.

On a continuing basis, the improvements made as a result of the action plan should be evaluated. As progress is made in environmental management, reassessment of the port's environmental mission statement, policies and action plan can be conducted using the Plan-Do-Check-Act cycle as described below:

*Plan*

- what needs to be done
- who needs to do it
- when it needs to be done
- how much to spend on it
- where it will be documented

*Check*

- progress routinely
- policies and documents against actual operations
- employee reactions
- customer opinions

*Do*

- develop draft documents
- involve as many staff as possible
- train staff
- communicate activities

*Act*

- to improve draft documents
- to demonstrate commitment
- to foster change
- to keep moving

### 6.1.2 Elements of a Strategic Environmental Action Plan

The strategic action plan is the driving force behind the successful implementation of an environmental management program. The plan presents the specific steps that will be taken to implement the program and provides for consistent feedback to port management on the progress made during the implementation process. A plan can take many forms, depending on the type of investment the port is willing to take, the level of acceptable risk, and community/regulatory pressures. A list of recommended topics that could be covered in the plan are presented in **Table 6-1**. (Shown on following page)

### 6.1.3 Types of Environmental Management Systems

There are a variety of EMS frameworks developed by organizations around the world, as well as a number of which may be integrated into those frameworks:

**EMS Frameworks**

- Eco-Management and Audit Scheme (EMAS)
- British Standard 7750
- Responsible Care
- International Organization for Standardization (ISO)

**Other programs**

- Coalition for Environmentally Responsible Economics (CERES)
- The Natural Step (TNS) <sup>1</sup>
- USEPA Project XL
- USEPA Voluntary Pollution Prevention Program

Each of the EMS frameworks are designed to provide guidance in continually improving operations to protect the environment, and are flexible allowing for customized application. Thus, a port could use one of these frameworks to assist in

**Table 6-1**

**Topics for a Strategic Action Plan**

- Mission
- Goals & Objectives
- Current Environmental Staff; Roles and Needs
- Priorities for Environmental Management
- Environmental Management Programs
  - Stormwater (e.g., vehicle & equipment washing; illicit connections)
  - Hazardous Materials/Wastes (e.g., chemicals, fluorescent lamp ballasts)
  - Fuel Management
  - Used Oil Management
  - Building Maintenance (e.g., asbestos)
  - Air Emissions
  - Wastewater
  - Spill Prevention & Response
  - Solid Waste Management
  - Construction
- Dredged Material Management Plan
- Community Outreach
- Schedule for Implementation
- Performance Measures
- Follow up

**Figure 6-4**

**ISO Development / Implementation Process**



developing or improving its environmental management program, under their individual budget constraints, and within their own time frame. **Figure 6-4** provides the ISO 14001 EMS development / implementation process that could be used as the basis for developing the strategic environmental action plan.

**6.1.4 Implementing a Successful Strategic Environmental Management Strategy**

There are three factors that can greatly enhance the long-term success of a strategic environmental management program:

<sup>1</sup>

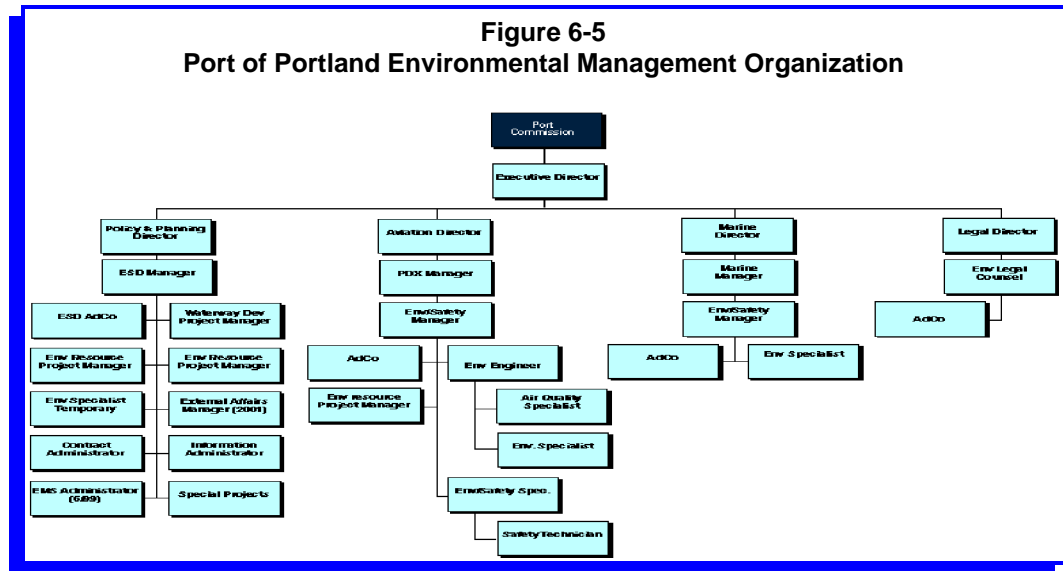
TNS is a non-profit environmental education organization that can be found at [www.naturalstep.org](http://www.naturalstep.org).

- Senior Management Support for the Program. Senior port management endorsement of and active participation in the development of an environmental management program is essential. Management must also fully support inclusion of environmental management into day-to-day operations of a facility.
- Implementation of an Open and Inclusive Planning Program. The environmental management strategy planning process must be “inclusive” — every department/division of a port that may be affected by either environmental regulations or the environmental management strategy should be included in the development and policy/decision-making process to ensure long-term support for the program.
- Commitment of Resources for Long-Term Implementation. It is likely that implementation of an effective environmental management strategy will require dedication of both monetary and personnel resources to maintain permits, report on monitoring, and assist departments in implementing development projects. The port must be committed to providing the necessary resources for long-term investment in environmental impact reduction.

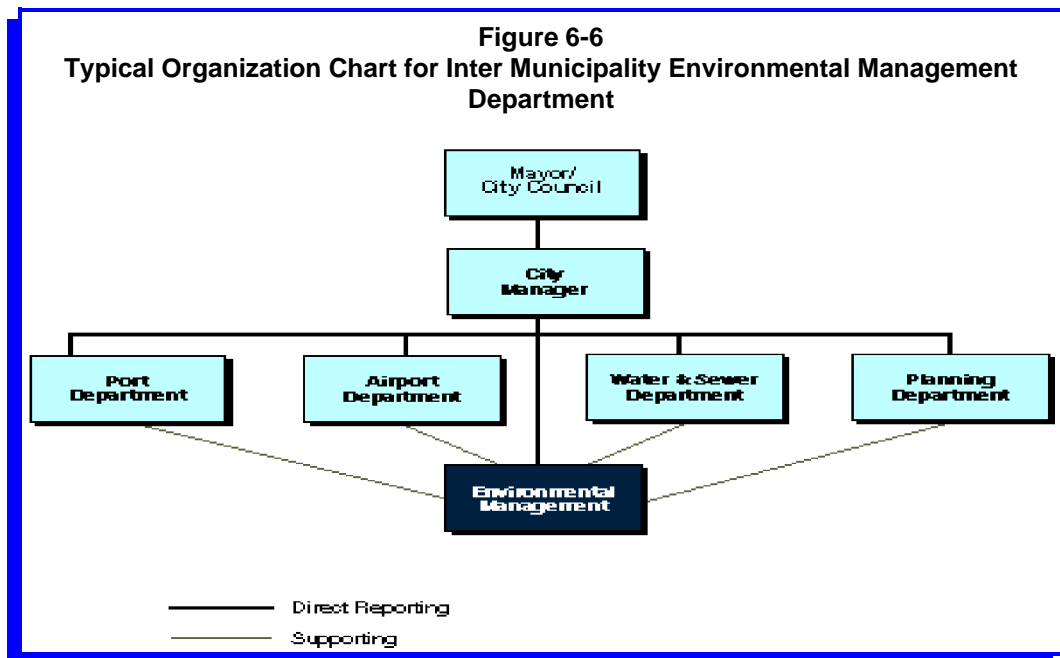
## 6.2 Environmental Management Organizational Options

Each port has a different management structure and culture as described below, from which generally arises a philosophy related to environmental issues. While no two ports are the same, there are four general categories of environmental management organizations employed by ports. There are numerous variations on these categories, and they are presented here as examples only. The categories include:

- In-House Environmental Management Department. This structure involves having a separate department within the port structure dedicated solely to ensuring that development projects proceed through the permitting stage smoothly, and impact associated with port operation are managed effectively. In some cases, there may be more than one department handling environmental issues. For example, one department may be responsible for general compliance such as air quality or NPDES permitting, while another department may be responsible for permitting and NEPA documentation. Another example would be a port authority that also manages/operates other facilities such as airports or other real estate. In these cases, there is often a “corporate” or port-wide environmental department that looks at the port’s overall environmental program and an “operating” department assigned directly to the port or airport. **Figure 6-5** shows the organization chart for the Port of Portland Environmental Services Department which resembles the latter example.

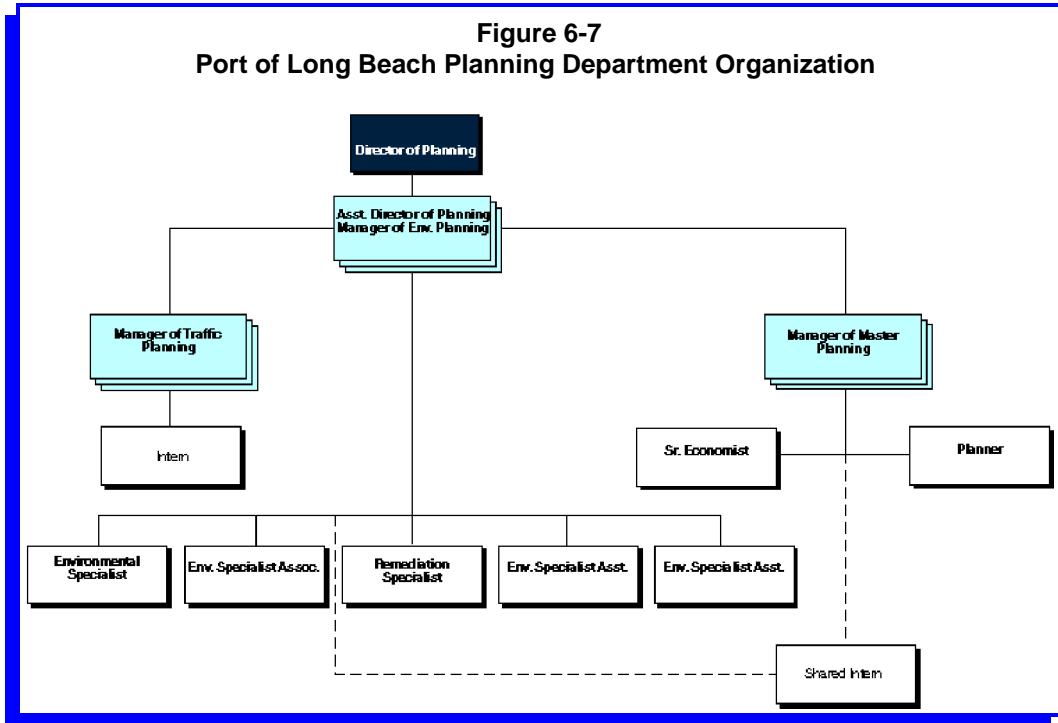


- Inter-Municipality Environmental Management Department. In this structure, the port relies on a department formed to manage environmental issues for all operating departments within a municipality. For example, a city may have an environmental department responsible for issues at the port, airport, public works, water department and sewer department. An example of this organization is shown in **Figure 6-6**.



- Inter-Department Environmental Management. This structure involves utilizing dedicated staff within an existing department of the port to manage environmental issues. In this case, staff would report to the manager of a department dedicated to non-environmental issues such as planning,

engineering, or real estate development. **Figure 6-7** shows the organization chart for the Planning Division of the Port of Long Beach, as an example of this approach.



- **Shared Role in Inter Department Environmental Management.** This structure is similar to the inter-department environmental management, except that there are no dedicated environmental staff. Rather, one or a small number of staff within a department are also responsible for one or more environmental issues. For example, an individual may be responsible for port planning and air quality issues.

The type of environmental management structure is often dictated by the size and type of port operations, funding availability, and environmental philosophy adopted by port management and community.

**Figure 6-2**  
**Sample Mission and Policy Statements**

***Mission Statement from the Port of Vancouver, U.S.A.***

To provide economic benefit to the community by developing and operating facilities and services for marine, industrial, and non-traditional uses within the constraints of good environmental stewardship.



***Mission Statement from Manatee County Port Authority***

Development and operation of Port Manatee as a competitive and viable deep water shipping port to stimulate local development and serve local, state, national and international shipping needs generated by local economic development. Also, operate Port Manatee with due consideration of environmental sensitivity, with systematic land use planning.

***Environmental Goal (Selected Sections) from Manatee County Port Authority***

Keep the Port environmentally sensitive and responsive to growth and maintenance activities.

Objective: Minimize environmental impacts caused by Port projects or expansion.

Policy: All Port development/expansion plans shall include mitigation elements that address the impact on coastal resources.

Policy: Adoption of a plan to manage the use of Port facilities while protecting the natural habitat.

Policy: The Port shall continually monitor water quality to ensure the non-degradation standard for the basin and surrounding water bodies is not violated in accordance with the approved water quality monitoring plan... monitoring plan shall be periodically re-evaluated in conjunction with the Environmental Action Commission, in order to ensure appropriateness of the plan in ascertaining compliance with the non-degradation standard.

Objective: Protect the Port from any detrimental activities of surrounding development.

Policy: An activity that restricts cargo movement, limits safety, or infringes upon adopted environmental policies would be described as detrimental and the Port would strive to eliminate or mitigate.

***Mission Statement from the Port of Oakland***

The Environmental Department is a unit of the Engineering Division of the Port of Oakland. The main functions of the Environmental Department are: to support all Port of Oakland departments and divisions in complying with environmental laws, regulations and permits; and to ensure that environmental criteria are considered and addressed in the process of developing Port of Oakland projects.

In fulfilling its mission, the Environmental Department is committed to protection of the integrity of the environment and its resources, both natural and built; effective customer service to the Port organization, clients, and customers; public outreach and participation; clear and accurate analyses and information; and professional conduct based upon principles of honesty, integrity, openness and teamwork.

***Environmental Policy (Selected Sections) from the Port of Portland***

The Port of Portland recognizes that the adoption and implementation of an environmental protection policy will facilitate the accomplishment of its mission and is in the best interest of its constituents and the State of Oregon.

It shall be the policy of the Port of Portland that:

1. Environmental laws and regulations shall be obeyed.
2. The Executive Director shall periodically adopt and publish Environmental Management Guidelines that articulate specific procedures to follow in dealing with and reporting matters related to environmental protection.
3. Ensuring compliance with environmental laws and regulations shall be an integral part of strategic, corporate, and business planning, and shall be a part of the Port's decision making processes.
4. Inquiries or expressions of concern by outside organizations or individuals regarding environmental issues related to activities by the Port or by others on Port property shall be appropriately responded to in a timely fashion.
5. Every Port employee shall be responsible for recognizing potential or actual environmental problems, for reporting those matters in accordance with Environmental Management Guidelines issued by the Executive Director, and, where appropriate, for undertaking any protective or remedial action required under those guidelines.
6. In its contracts and leases, the Port shall ensure that its customers, tenants, and contractors are required to comply with all applicable environmental laws and regulations.

***Environmental, Health and Safety Policy (Selected Sections) from the Massachusetts Port Authority***

WHEREAS, protection of the environment and the health and safety of employees, tenants, the public and the communities abutting Authority projects or affected thereby are of prime concern to the Authority:

RESOLVED, that the Authority, as a matter of policy:

1. Will meet and, where operationally and fiscally feasible, make a good faith effort to exceed, the requirements of all applicable laws and regulations related to safety, health and environmental quality in the design, construction and operation of all facilities.
2. Will train employees about the safety and health effects of Authority operations and workplace chemicals, in accordance with applicable laws and regulations, including providing Right-to-Know information.
3. Will provide leadership in researching the health and environmental effects of operations and capital improvements occurring on Authority property and in establishing programs to protect the environment, and to minimize impacts on affected residential communities, the Boston Harbor, the Mystic and Shawsheen Rivers and any other natural resources affected by Authority and tenant operations.
4. Will periodically review Authority and tenant operations to assess compliance with applicable state, federal and Massport rules and regulations and this policy.
5. Will, when required by law and/or when reasonable, provide the public with information regarding the environmental, health and safety affects of Authority operations and capital projects.

RESOLVED FURTHER, that the Authority will continue to take a leadership role in implementing such policy due to the range of facilities and tenants operating on Massport property which collectively affect the environment, including delivering this policy to all of its tenants and operators and continuing to take reasonable actions to ensure that or encourage such tenants and operators to comply therewith.

***Environmental Policy and Executive Director's Memorandum from the Port of Corpus Christi (Selected Sections)***

Every possible precaution should be taken to prevent pollution of harbor waterways. The Port of Corpus Christi Authority (PCCA) requires that Best Management Practices (BMPs) be observed to prevent pollution of waterways through storm water and other sources.

By memorandum, the Executive Director shall specify those BMPs which are to be employed by the PCCA, its lessees, and those who operate on or use port property.

Every precaution should be taken to prevent pollution of harbor waterways through storm water and other sources. Accordingly, all PCCA employees, all lessees of PCCA property, and all persons operating on or using PCCA property shall observe Best Management Practices (BMPs)...

***Hazardous Waste Minimization Program and Policy (Selected Sections) from Worldport, Los Angeles***

WHEREAS, the Los Angeles Harbor Department is committed to the responsible, proper, and safe management of all hazardous waste generated by Harbor facilities and operations, thereby minimizing present and future threat to human health and the environment; and

WHEREAS, waste minimization is an integral part of this commitment...

WHEREAS, the Board of Harbor Commissioners has determined that:

1. Minimizing or eliminating the generation of hazardous waste has been, and continues to be, a prime consideration in Department operations.
2. Reuse and recycling of materials has been, and will continue to be, given first consideration prior to disposal of waste.
3. Hazardous waste minimization can be expected to reduce costs for the Department, meet national and state environmental goals, and protect public health and worker health and safety.
4. The Harbor Department should implement programs such as source reduction, product substitution, reuse, recycling, energy recovery, or treatment which will reduce the volume of toxicity of the hazardous waste generated, using technologies which are available, practical, and economically feasible.
5. The Harbor Department shall prepare a specific hazardous waste minimization plan for its activities, and shall support and encourage hazardous waste minimization by our tenants.

NOW, THEREFORE, BE IT RESOLVED that the Board of Harbor Commissioners adopts the Harbor Department Hazardous Waste Minimization Policy, and

further authorizes the development of a hazardous waste minimization plan for the Department.

***Goals and Objectives from the Port of Tacoma***

The Port will maintain planning systems which ensure prudent use of Port resources.

Develop and implement a comprehensive proactive environmental program which ensures:

- a) Compliance with consent decrees.
- b) Ongoing regulatory compliance for Port operations and developments.
- c) Conducting its operational activities in an environmentally sensitive manner.
- d) Monitoring and providing input on the drafting of environmental ordinances and regulations.
- e) Pursuing cost recovery.
- f) Achieving 1997 Commuter Trip Reduction targets.
- g) Explaining the Port's environmental activities to the public.