Section 4
Port Environmental Management Tools

Port ownership and operation generally falls into three basic categories:

- Operating ports where the port authority itself develops and operates the majority of activities.
- Landlord ports where the port provides basic services and infrastructure and the tenants conduct the majority of activities.
- Combination ports where the port authority may operate some activities and tenant may operate other activities.

Operating ports have direct responsibility for managing those components of its operations that may affect the environment. As a result, such ports should develop and implement environmental management systems and employee training unique to their operations. Landlord ports are in a somewhat different situation since they generally do not have direct control over the activities of their tenants. Nevertheless, landlord ports have a significant stake in their tenants' activities and the effects of those activities on the environment, since many U.S. environmental laws impose dual owner/operator liability for environmental contamination. As the economic engines and focal point of many communities, it is important for the ports to maintain a good public image as stewards for the environment.

This section focuses primarily on the following.

- Port-Tenant responsibilities for landlord ports (See Section 4.1)
- Lease management for landlord ports (See Section 4.2)
- Environmental audits and site assessments for landlord and operating ports (See Section 4.3)
- Environmental awareness training for landlord and operating ports. (See Section 4.4)

4.1 Port and Tenant Responsibilities

Landlord ports face a unique environmental compliance situation — the majority of activities that could affect environmental quality are likely to be conducted by tenants. Understanding the types of activities conducted at ports and who is responsible for them is the first step in developing an effective risk management approach.

As the landlord or owner, some environmental laws impose some degree of responsibility for its tenants' actions on the port. Public ports have the additional real or perceived responsibility to protect the surrounding public and to ensure operations are conducted in accordance with local, regional, state and federal laws and regulations. With increasing interest from local communities and private groups in protecting the public and natural resources, ports are faced with greater challenges to reduce the real or perceived affects of the operations of their tenants.

4.1.1 Role of the Port

The relationship between a port and its tenants varies dramatically around the world. The traditional landlord-tenant relationship involves the landlord providing the basic infrastructure — land, utilities and perhaps, buildings in which to operate, and the tenant conducts its operations with limited contact with the landlord. Until recently, many ports have perceived that this relationship limits or absolves the landlord of many responsibilities, including environmental liabilities, because the landlord believes that it has little or no control over the tenant's activities. In the US this delineation of responsibility between the port and its tenants is not always clear.

Typically, the role of the public port authority is to provide safe and efficient space and services to allow easy transfer of materials and passengers. At landlord ports, tenants conduct the majority of activities. Tenants generally lease land from the port and either lease or build/own their buildings and facilities. Their activities vary widely from port to port and may or may not have direct maritime applications or needs. As separate business entities, tenants have the primary responsibility to ensure that their activities meet — not necessarily exceed — environmental regulatory requirements. In many cases, tenants do not fully understand or are not financially capable of meeting their environmental obligations. Ports are often in a position to assist their tenants in understanding those obligations and meeting increasingly stringent environmental requirements.

4.1.2 Defining Roles and Responsibilities

To better manage environmental risks, it is essential to understand and deal effectively with port-tenant relationships. Each port has a different tenant mix — numbers and types of tenants — depending on the markets it serves. Competition among ports for tenants is increasing, placing greater pressure on ports to add incentives to retain or attract tenants. In some cases, those incentives may involve the assumption by the port of additional environmental risks or responsibilities that might otherwise be assumed by the tenant. Public pressure may also require the port to provide additional infrastructure to address environmental issues. Each port must determine the level of risk and responsibility it is willing to accept, and then develop environmental policies and programs designed to minimize those risks.

A number of mechanisms serve to define the responsibilities of tenants and a port. They include:

- Leases. A lease is a legally binding contract that defines the terms of the relationship between a port and its tenants.
- Port Rules and Procedures. Port rules and procedures are generally requirements and guidelines developed either by the port authority or jointly with tenants. The rules and procedures are incorporated into tenant leases.
- Environmental Laws and Regulations. Environmental laws and regulations vary widely in their definitions of responsibility. Some US laws, such as the Comprehensive Environmental Response Compensation and Liability Act or

CERCLA, have a broad scope and may impose liability or responsibility on the parties that operated or owned a particular facility for environmental contamination that occurred during the life of the facility; others specifically define the responsibilities of facility owners and operators.

- Community and Political Forces. Regardless of how a law, regulation, or lease is written, the political climate in a particular area may dictate how the community views a port's responsibility for environmental protection. Because a port is often a public entity, communities frequently believe the port is ultimately responsible for the actions of its tenants.
- Economic Factors. Because the port industry is extremely competitive, economic factors can shape the roles and responsibilities of tenants and landlords. In many cases, ports will assume additional responsibilities and risks of its tenants to entice them to remain or to move from a competing port.

Ports must weigh the community and political forces and balance them against the costs of taking on environmental responsibilities and risks, while affording efficient operations for its tenants.

4.2 Lease Management

Over the last 15 years, income from leasing port facilities has grown from a very small percentage of revenue to represent a majority of the total income at some US ports. Leasing began primarily as a means for ports to establish long-term relationships with carriers to ensure a firm cash flow and a sound basis upon which to issue bonds for large scale development, such as container terminal facilities.

For the most part, ports develop leases to meet their unique competitive needs. Therefore, no industry "standard" tenant lease exists. A number of factors enter into the development of a lease, including:

- Pricing to ensure that the port receives its "fair share" of revenue
- Long-term development goals and objectives
- Risks associated with inflation and changes in trading patterns and markets
- Competition with other ports
- Needed revenues to improve port facilities

An important, but often overlooked factor, is allocation of environmental risk and responsibility. The cost of remediation of environmental contamination caused by tenant activities or by the port's own operations can have serious consequences on the profitability of a port. Thus, a port operator must also consider environmental risk management when negotiating leases. A balance between all of these factors — profit, competition, and environmental risks — needs to be made during lease negotiations.

4.2.1 Environmental Considerations in Lease Negotiations

In 1996, the American Association of Airport Executives prepared a document

entitled Tenant Environmental Liability Handbook (www.airportnet.org). This document was intended to provide guidance on the inclusion of lease language that would help manage an airport's environmental risks associated with the actions of its tenants. The same guidance may be useful to the ports in identifying the types of language that may be included in a lease to protect the port from the action of its tenants, as described in **Table 4-1**. Examples of the first nine types of provisions include:

Table 4-1
Typical Environmental Considerations for Leases

- Requirements to comply with environmental laws
- Right of entry
- Indemnification
- Review of environmental documents
- Environmental noncompliance
- Duty to notify
- Termination
- Restoration and surrender of property
- Establishing an environmental baseline
- Environmental escrow accounts
- Environmental liability insurance
- Cost

- Requirements to comply with environmental laws (and agreements with regulatory agencies.) This section may include a listing of the environmental laws and definitions of terms. It is important that this list be broad and inclusive to ensure that it covers all applicable federal, state and local requirements, such as environmental cooperation agreements, pollution prevention plans and other voluntary programs the port adopts.
- Right of Entry. This provides the port with the ability to enter a leasehold and conduct inspections related to environmental issues. Ports should ensure that such provisions do not place the responsibility of monitoring or ensuring the tenants' environmental compliance on the port. Moreover, the discovery of some environmental deficiencies could trigger legal reporting requirements on the part of the port or the tenant.
- Indemnification. Indemnification language may provide a port with some protection from liabilities (or costs) resulting from environmental contamination caused by a tenant and may allow a port to obtain restitution from the tenant. Indemnities must be clear and should specify their coverage of environmental liabilities. Ports should understand, however, that indemnities are only as good as the indemnitor. Thus, if a tenant has limited resources, the benefit of the indemnity may be limited. Similarly, indemnity provisions may not protect the port from direct liability from a government action. Under CERCLA, for example, the federal government and other parties may still be able to sue and recover damages from the port.
- Review of Environmental Documents. Such a provision would allow the port to review all environmental documents such as permits and UST/AST registrations, particularly those that are submitted to regulatory agencies, to ensure that tenant activities are consistent with the port's environmental goals, practices and procedures. A port should include a statement that the "right-to-review" such documents does not imply that the port accepts any responsibility for the completeness, accuracy, or legal compliance for the tenants.
- Environmental Remediation. Such provisions would require a tenant to remediate contamination according to port and regulatory agency guidelines or allow a port to remediate environmental damage caused by the tenant and charge the tenant for the costs of remediation. It may also allow the port to stop a tenant's operations if contamination continues or until remediation

is completed. In crafting such a provision, a port must balance its desire to remediate environmental damage quickly with the potential risk that it may be exposing itself to additional risks of liability if the remediation is done improperly. Moreover, a port must take care to protect itself from claims that it exacerbated the problem.

- Duty to Notify. Such a provision would require a tenant to notify the port in the event that a release occurs. This notice may not supplant notices to regulatory authorities.
- Termination. Such a provision would allow a port to terminate a lease if the tenant refuses to clean up releases that it caused, or otherwise fails to comply with port environmental goals. Some measures should be included to permit the port to recover costs associated with environmental contamination or to remedy any violations caused by the tenant.
- Restoration and Surrender of Property. Such a provision would require the tenant to return the property to its original condition before the lease is terminated. This may require remediation of releases and / or removal of items such as underground storage tanks.
- Establishing an Environmental Baseline. Such a provision would require the port and tenant to participate in and cooperate during the performance of an environmental site assessment (ESA) prior to the effective date of the lease to establish the environmental standards (conditions) the tenant will be held to throughout the lease. It would also serve to protect the port from claims that contamination found at the end of the lease was caused by prior activities.

Review of documents does not impart responsibility for the tenants activities to the Port.

A port has many opportunities to incorporate this language into leases including:

- New leases for existing or new tenants. Many ports have created standard lease agreements that now include many of the recommendations noted above.
- Lease modifications. In many cases, a tenant will require a lease modification to expand or change its operations. The port then has the opportunity to add protective language as part of the negotiations.
- Lease renewal. When a lease is up for renewal, a port has an opportunity to add appropriate language.
- Lease modification in exchange for a service or more favorable lease terms. Often, a port has the opportunity to include language to improve environmental risk management in exchange for providing additional services or modifying lease rates. This is often a balance between a port's revenue and its desire to address environmental risks.

The decision whether and how many environmental provisions are put into a lease is often driven more by competitive factors than by the port's desire to manage environmental risks. A balance between revenue and environmental risks should be evaluated in any lease negotiations.

4.3 Environmental Compliance Auditing and Environmental Site Assessments (ESAs)

As a result of increased environmental regulation and federal, state and local enforcement, the costs associated with noncompliance and remediation have risen dramatically. Environmental compliance audits and ESAs have become important management tools. An environmental compliance audit offers a unique opportunity to assess the compliance status of a facility or its operations. It is a management tool to provide a "snap shot" of an operation's compliance with federal, state and local environmental laws and regulations. The compliance audit can be as broad or as narrow as is warranted by the port's goals. It can be limited to a single operation or compliance with specific regulatory programs, such as air pollution or water pollution control programs, or it can be a port-wide multimedia audit. The audit forms the foundation of a comprehensive environmental management program, allowing a port the opportunity to develop specific programs or procedures designed to eliminate potential impacts from tenant or port operations.

An ESA provides historical documentation designed to identify environmental conditions of a site at a point in time. It can serve as a baseline for the tenant and port in assessing and assigning environmental risks and responsibilities.

This section presents an overview of the positive and negative aspects of conducting an audit, and the typical audit and ESA processes. While much of the discussion in this section has focused on landlord ports, an environmental audit may also be conducted at operating ports as well.

4.3.1 Pros and Cons of Conducting an Audit

Considerable debate has occurred about whether to conduct an audit. One viewpoint asserts that conducting an audit identifies problems that may not be discovered by other means and, thus, may impose a duty to report to regulatory officials or take action. In addition, conducting audits of a tenant's operations may make the port legally responsible for the tenant activities (this depends in part upon how active the port becomes in the environmental management of the tenant).

Another viewpoint states that in the US, the port as the landlord already has some real or perceived responsibility for its tenants' activities and may not increase its risks if the audit process is carefully managed. Moreover, an undiscovered environmental problem can become more critical over time. Thus, if a compliance audit is carefully managed and if compliance problems are promptly addressed, audits may be useful cooperative environmental risk management tools for ports and tenants.

Self Auditing Protection With budget cutbacks and the resulting reductions in staff available to conduct field inspections, and a renewed emphasis on cooperative environmental compliance efforts, many government entities have seen the benefit of allowing facilities to self-police their environmental compliance.

Many states have enacted voluntary environmental compliance auditing laws that provide various protections to businesses / facilities from the imposition of criminal, and sometimes civil, penalties for environmental compliance deficiencies discovered in the audit, as shown in **Table 4-2**. Essentially, these laws allow facilities to conduct audits, identify problems, and develop reasonable approaches to remedy those problems, in exchange for reduced or eliminated fines and penalties. Many of those laws also provide for limited protections from disclosure of the information contained in the audits.

Table 4-2
Enacted State Environmental Audit Privilege and Immunity Laws

STATE	EFFECTIVE DATE	PRIVILEGE	CIVIL IMMUNITY	CRIMINAL IMMUNITY
Alaska	1997	Yes	Yes	No
Arkansas	7/28/95	Yes	No	No
Colorado	6/1/94	Yes	Yes	Yes
Iowa	1998	Yes	Yes	No
Idaho	7/1/95	Yes	Yes	Yes
Illinois	1/24/95	Yes	No	No
Indiana	7/1/95	Yes	No	No
Kansas	7/1/95	Yes	Yes	Yes
Kentucky	7/15/95	Yes	No	No
Michigan	3/18/96	Yes	Yes	No
Minnesota	6/1/95	No	Yes	No
Mississippi	7/1/95	Yes	Yes	Yes
Montana	1997	No	Yes	No
Nebraska	1998	Yes	No	No
Nevada	1997	Yes	Yes	Yes
New Hampshire	7/1/96	Yes	Yes	Yes
Ohio	3/13/97	Yes	Yes	No
Oregon	11/4/97	Yes	No	No
Rhode Island	1997	Yes	Yes	Yes
South Carolina	6/4/96	Yes	Yes	No
South Dakota	7/1/96	No	Yes	Yes

STATE	EFFECTIVE DATE	PRIVILEGE	CIVIL IMMUNITY	CRIMINAL IMMUNITY
Texas	5/23/95	Yes (no criminal)	Yes	No
Utah	3/20/95	Yes (civil only)	Yes	No
Virginia	7/1/95	Yes	Yes	No
Wyoming	7/1/95	Yes	Yes	No

While the USEPA encourages self-auditing, it is concerned that the expansive protections provided by some states will hamper enforcement efforts. In 1996, the USEPA issued a directive indicating that the Agency might increase enforcement activities with businesses/facilities in states with self-audit laws. Thus, despite state protections, federal enforcement actions are not affected. A copy of the USEPA guidance is provided in Appendix C.

In deciding when an audit is necessary, ports should consider the following factors:

- Magnitude of potential environmental effects of an operation.
- Resources, including staff, made available to conduct and follow through on the audit results.
- The level of regulatory or public scrutiny applied to the port or a particular activity, including the anticipation of agency actions.
- Complaints, suspected breaches of environmental regulations, or apparent adverse trends in environmental quality.
- Changes in regulatory requirements or emerging environmental issues.
- Concerns of cumulative impacts or risks from multiple operations.
- The end of a lease period when a port may be left with potential liabilities from a tenant's activities.

The following sections present the most common types of audits and the basic audit process.

4.3.2 Types of Environmental Audits

The complexity and scope of an environmental audit varies according to the need or underlying reason for the audit. For example, one audit may be focused simply on the identification and inventory of potential environmental liabilities such as underground storage tanks, while another may focus on the identification of potential sources of known groundwater contamination. In general, audits may be divided into four distinct categories:

- Inventory. An inventory audit identifies and documents the storage, use and disposal practices related to hazardous materials and wastes, and assesses the potential to discharge pollutants into the environment. During an inventory audit, compliance with environmental regulations may not

necessarily be evaluated.

- Compliance. A compliance audit determines a facility's compliance with environmental regulatory requirements and may be either "directed" - geared to one specific regulation - or "comprehensive" covering all pertinent federal, state or local regulatory programs. While a typical environmental compliance audit may begin with an inventory, the audit is expanded to collect sufficient information to evaluate the compliance status of each activity, and then used to develop an overall environmental compliance program.
- Systems. In a systems audit, the port would evaluate its own and possibly its tenants' current procedures to manage environmental issues. A systems audit would evaluate whether written procedures are in place, how those procedures are implemented, who is responsible for each aspect of environmental management, reporting procedures, and emergency response and safety procedures.
- Health and Safety. Health and safety audits (H&S) are conducted to determine the general status of worker health and safety programs. H&S audits focus on major health and safety programs (for the port only), determining whether written documents contain the required program elements and whether the program requirements have been met. Health and safety audits may include the items in **Table 4-3**, but are not discussed further in this document.

Table 4-3
Health & Safety Audit Components

- Injury and Illness Prevention Program
- Hazard Communication
- Hearing Conservation Program
- Confined Space Entry Program
- Air Contaminant Program
- Asbestos Contaminant Program
- Lead Containment Program
- Respiratory Protection Program
- Medical Services and First Aid
- Heavy Equipment Operation
- Electrical Safety
- Preventive Maintenance
- Walking Surfaces
- Materials Handling and Storage
- Compressed Air Equipment
- Hand / Portable Tools
- Emergency Response Plan
- Lockout and Tagout
- Fire Prevention Plan
- Pressurized Vessels
- Carcinogenic/Teratogenic Materials
- Tunnel Entry Program

4.3.3 Typical Auditing Process

As noted above, the complexity, scope and type of audit to be performed varies according to the need or underlying reason for the audit. However, an audit can be divided into three basic phases:

- Pre-audit activities
- On-site activities
- Post-audit activities

Figure 4-1 depicts typical activities in each of the three steps. The following sections provide additional information on each phase.

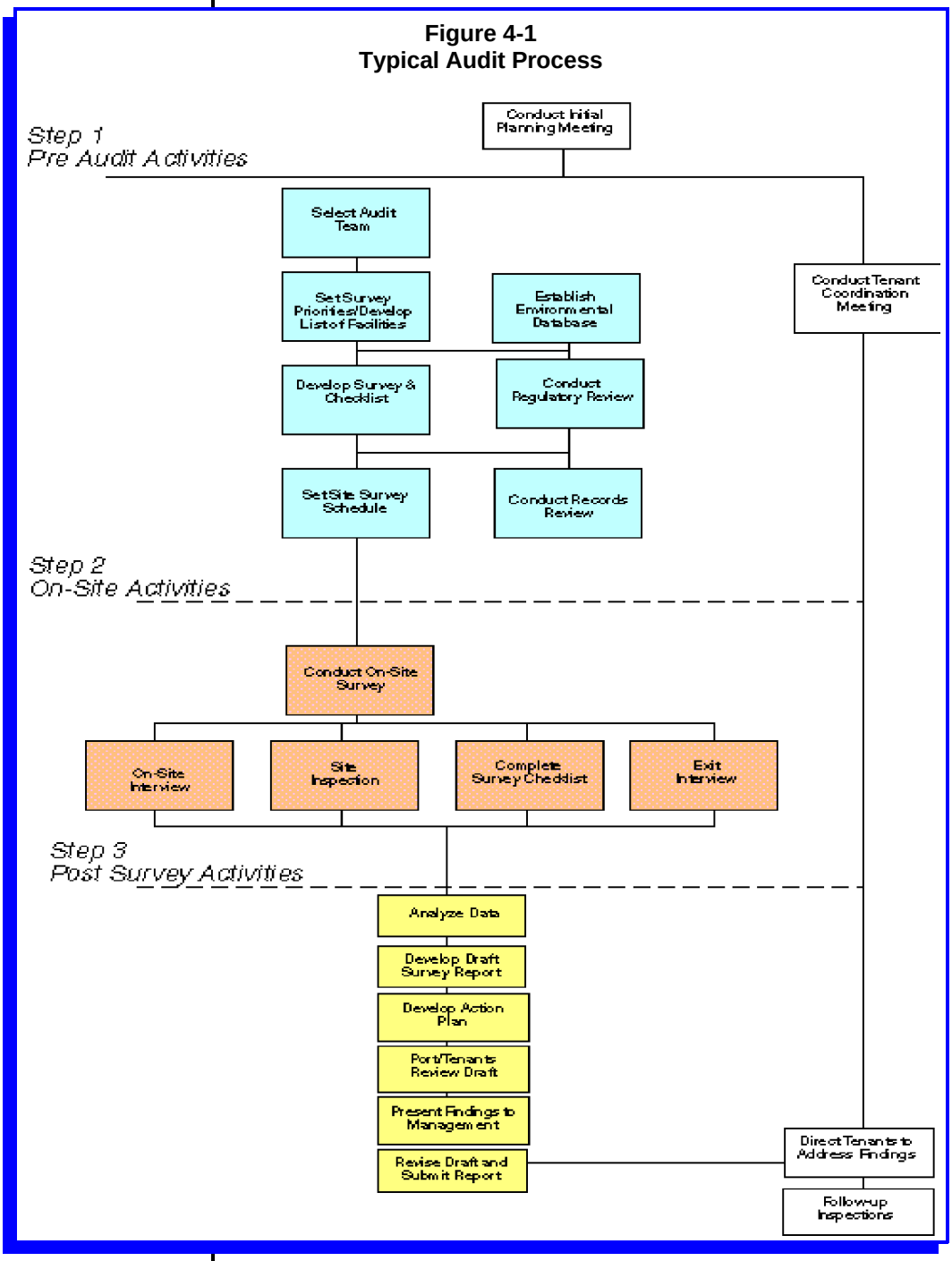
Step 1 - Pre-Audit Activities
Phase I of an audit focuses on planning, and is an important first step to completing a successful and well-organized program. The planning elements include:

- Selection of the Audit Team. This is a critical decision point where the port either uses port staff or selects an independent consultant, or both to conduct the audit. The audit team should comprise technical experts in regulatory

programs pertinent to the activities conducted by the port and its tenants.

- Port and Tenant Coordination Meeting. This step allows the port to describe contents, purpose and expected outcome of the audit and provides tenants with the opportunity to ask questions and participate more fully in the process. This step is important to achieve maximum cooperation from the tenants during the audit.
- Set Survey Priorities. For many ports, there are facilities which by their nature have little or no opportunity (pathway) to adversely affect the environment. In addition, there are facilities which by their nature consistently affect the environment. In this step, the port sets priorities for the audit, focusing first on the most significant or high risk operations performed either by the port or its tenants.
- Develop Survey and Inspection Checklists. In this step, a survey form is

Figure 4-1
Typical Audit Process



created for distribution to the tenants asking them to describe their activities in detail, allowing the port to better focus the audit. In addition, a site inspection checklist is created that ensures that all activities and regulatory programs are covered, and that all tenants are treated equally. An example checklist is presented in **Appendix D**.

- Establish Environmental Database. One of the most important methods to maintain long-term compliance at a facility is through the development and constant maintenance of an environmental database. With recent advances in low-cost, highly sophisticated and easy-to-use databases, it is possible to track chemicals stored on-site, permit conditions, registrations, monitoring data, results of compliance audits and many other elements of an environmental program. This database, in turn, allows a port to track carefully the history of environmental compliance and improves programs designed to reduce risks.
- Conduct Regulatory and Records Review. These two steps can be accomplished simultaneously and include searching through existing port and regulatory agency records to determine the extent of known environmental issues, and to assess agency concerns related to port activities.
- Set Site Survey Schedule. In this step, a detailed schedule for site visits is arranged. This allows tenants to prepare for on-site activities, complete the questionnaire and obtain necessary documentation to allow for easy completion of the audit.

Step 2 - On-Site Activities
There are three main elements of Phase II of an audit:

- Conduct On-Site Interviews. The interview generally occurs at the beginning of the inspection where the results of the questionnaire are confirmed and direct questions are posed related to the activities conducted on-site. From the interview, the inspectors would be able to focus their on-site activities to the highest risk areas.
- Site Inspection. The site inspection involves a thorough review of the facility confirming the types of activities conducted, the inventory of chemicals, and potential pathways for the activity to affect the environment. The site inspection checklist is used as part of the site visit to ensure that all areas of the audit are completed.
- Exit Interview. The exit interview is conducted as soon as possible after completion of the site inspection. During the interview, the key findings of the audit are presented to the tenant, and the tenant is provided with an opportunity to comment on the findings and provide additional information to assist in the audit process.

Data collected during the site inspections may then be entered into the port's environmental database.

Step 3 - Post-Audit Activities.
The major components of Phase III are highlighted below.

- Analyze Results. This step involves evaluating all of the data collected during Phases I and II to determine the port's or tenant's environmental compliance status. For each activity, an assessment should be made to determine if effective EMPs are being employed, or if new EMPs are required.

- Develop Action Plan. The action plan defines specific steps that should be taken to improve environmental conditions and could include new systems, additional staff, updated EMPs and many other topics. The action plan also identifies responsibilities, a schedule for implementation, potential costs and impacts on operations.
- Develop Draft and Final Report. During this step, a draft report is developed presenting the results of the entire audit, making recommendations for improvements to individual activities, as well as recommendations for installation of environmental management systems designed to enhance risk management. The draft report is often distributed to the tenants who are allowed to comment on the results and the recommended solutions. Once all comments are received, a final report is prepared and presented to port management. In making recommendations for changes, the port must be careful not to increase the port's risk of being held responsible for the tenant's environmental issues. In some cases, a port may wish simply to provide the tenant with the findings and direct that they be addressed.
- Training. One of the most important elements in maintaining long-term environmental regulatory compliance is training. A more detailed discussion on training is provided below.
- Follow-up Inspections. In order to ensure that findings discussed in the report are addressed, it is recommended that a follow-up inspection program be developed. The follow-up inspections focus mainly on the areas of non-compliance identified above, particularly if a tenant fails to submit compliance documents such as permits, registrations or notices of discharges / releases. However, after a period of a year or more, follow-up inspections could include the elements of a detailed site inspection described above.

4.3.4 Pros and Cons of Conducting ESAs

ESAs are tools that can be used by the port and tenants to assess site conditions and potential environmental risks caused by past and present activities at a site. ESAs are routinely used in real estate and business transactions. For ports, ESAs generally fall into three categories:

- Assessments of currently owned properties located within the Port boundaries either operated by the port or leased to a tenant.
- Assessments related to lease changes either when a lease is modified, a tenant's operations cease, or a tenant is simply leaving the property
- Acquisition of land for expansion

Ports and tenants must recognize and understand that conducting ESAs may trigger certain legal obligations. Under some US environmental laws, the owner / operator of a facility, and sometimes anyone with knowledge, may have a

duty to report conditions discovered in the course of an assessment to regulatory authorities. Therefore, ports and tenants are encouraged to consult with legal counsel before undertaking an assessment.

4.3.5 Typical ESA Process

An ESA is generally conducted in three phases:

- **Phase I** - Non-intrusive evaluation that includes records reviews and a site inspection with no sampling or drilling. Phase I ESAs are designed to identify areas of potential concern.
- **Phase II** - Physical testing of the areas of concern to confirm or deny the presence of contaminants.
- **Phase III** - Delineation of the extent and magnitude of contamination through extensive sampling and testing.

The typical ESA process is described in the American Society of Testing and Materials (ASTM) Standards entitled E1527-97 Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process and E1903-97 Standard Guide for Environmental Site Assessments: Phase 2 Environmental Site Assessment Process can be obtained through the Internet at http:\ \ WWW.ASTM.ORG. In addition, many state laws have additional requirements that must be followed to obtain liability protection, and ports should review those requirements applicable to their circumstances.

The typical Phase I & II assessments generally include:

- Historical Review. A historical review including a background check on the facility or site in question. Past and present activities at and around the site, history of releases, spills, and disposal practices should be reviewed, and regulatory records of permits and enforcement activities related to the site should be evaluated to identify the types of activities conducted at the site and potential problem areas.
- Site Inspection. An initial site inspection should be conducted to investigate the site, confirm or deny potential problems noted above, and identify problems not previously found.
- Data Evaluation. Based upon the information gathered from the background check and initial site inspection, a decision can be made regarding the possibility of site contamination and need for a second site inspection involving soil and groundwater analysis.
- Site Investigation (or Phase II Assessment). Soil and groundwater analysis is then performed and the baseline established, or the comparison with prior conditions can be made.

4.4 Environmental Awareness Training

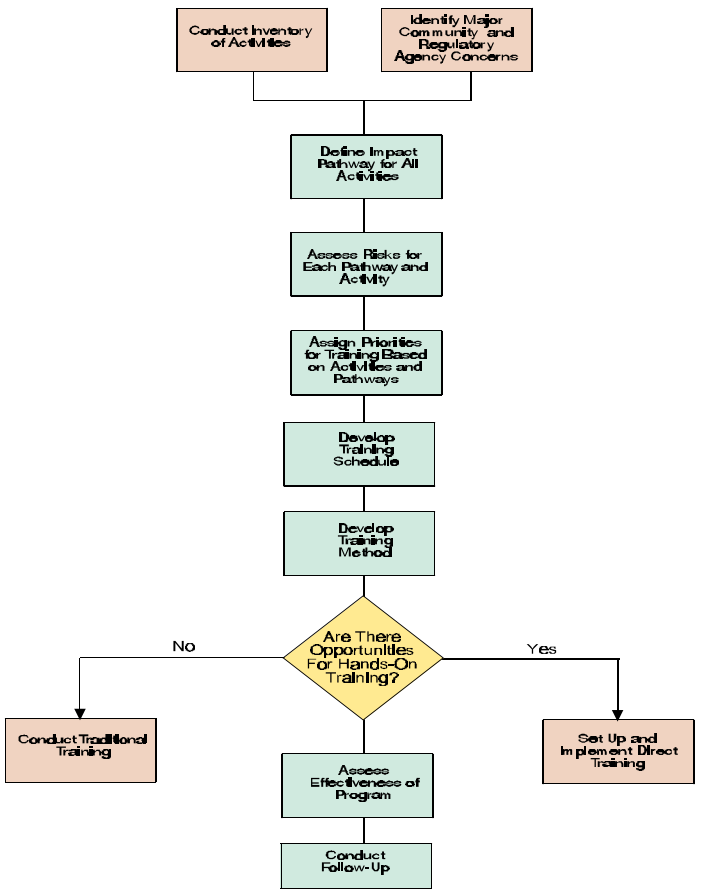
Environmental awareness training of port staff can be an important element in environmental risk management. Tenants can be advised on the elements of the program and be encouraged to establish similar training or, as appropriate, participate directly with the port. Training is most applicable if a tenant's activities

have a direct bearing on a port's operating permits, such as stormwater discharge permits. Through effective training programs, both port and tenant staff can understand the environmental management goals and objectives of the port and their respective roles and responsibilities in minimizing the adverse affects of their activities. This kind of training must be differentiated from detailed employee training on environmental compliance issues. Ports should make an informed decision on how far to proceed with providing training for tenants beyond basic environmental awareness training, and should consult with an attorney on this issue. If a port offers its employees environmental training, it could make that opportunity available to its tenants, but the port should not, as a general matter, dictate specific environmental training for its tenants.

4.4.1 Port Training Programs

This section describes a process for developing a training program for ports, considerations for the program, and suggested elements of the program, focusing on the elimination of potential pathways for adverse environmental affects.

Figure 4-2
Process for Developing an Environmental Awareness Program



The process for developing and implementing a port training program is shown in **Figure 4-2**, and generally includes:

- Thorough Identification of Activities. Either through an audit or through day-to-day experiences, all port activities that may affect the environment should be identified.
- Identify Major Community Concerns. Through an effective public outreach program, as discussed in Section 5, the port needs to understand which activities cause the greatest concern to the community.
- Define Potential Environmental Exposure Pathways, Assess Risks, and Assign Priorities. In this step, the port defines the pathways that present the possibility of adverse environmental affect and assesses the relative risks of each port activity. Based on these risks, and community concerns, the port sets the priorities for the training program.
- Develop Training Schedule and Method. In this step, opportunities to conduct non-traditional (hands-on) training should be explored. Also, a training schedule that covers all of the priorities should be developed. The schedule could cover one or more years of training and appropriate intervals for retraining.

- Conduct Training. Depending on the method selected, training is conducted either in a classroom or in the field or both.
- Assess Effectiveness of the Program. The port should assess the effectiveness of each training program through discussions with the trainees and through follow-up evaluations of port activities. The port should keep accurate records of training including topics covered, dates, locations and attendees.

4.4.2 Development of an Effective Environmental Awareness Training Program

Environmental awareness training should not be considered a one-time effort and there must be commitment to the development of a long-term "program" geared toward meeting the port's environmental goals and objectives. Thus, one of the most important elements of an internal port training program is constant re-evaluation of the effectiveness of the program and re-assignment of training priorities. Through the experiences of ports and other industries, the most effective elements of environmental awareness training programs include:

AAPA regularly conducts a variety of training programs throughout the year including:

- Navigation & Environment
- Planning & Research
- Operations & Safety
- Legal Issues
- Finance
- Facilities Engineering
- Administration and Information Technology

AAPA can sponsor on-site environmental awareness training on a port- or region-wide basis.

- Conducted Regularly. Training programs should be conducted routinely to reinforce the port's environmental goals and objectives, and to ensure that environmental management practices are implemented consistently and effectively. It is recommended that some level of environmental awareness training occur at least twice each year. Some form of interim training should be made available for new and/or reassigned employees.
- Specific to the Port's Operations. These programs should be geared to the operations conducted at the individual port. Examples of effective EMP implementation, as well as non-compliance issues taken directly from the port, are substantially more effective than examples from other unrelated industries.
- Geared Toward Easy-to-Use Solutions. It is essential that the EMPs recommended in the training program be easily incorporated into the day-to-day operations of the port. Most port staff are untrained in environmental management issues, and are focused on moving products either onto or off of facilities. EMPs must be geared to simple modifications of their daily operations to ensure their effective and long-term implementation.
- Conducted on Single Issues. While it is often very tempting to conduct day long seminars that cover all the environmental issues, it is often more effective to cover one issue at a time, such as spill prevention or dust suppression.

- Interactive. Most training programs are conducted indoors in a classroom setting. However, one of the most effective training approaches is providing hands-on experience in EMP implementation, such as conducting spill response drills.
- Use Input from Non-Environmental Staff. Often, the most effective EMPs are developed by operations or maintenance staff. The trainers should encourage trainees to assess their operations and look for cost-effective ways to reduce environmental risks. On an ongoing bases, ports should encourage, possibly through the use of incentives, employees to identify non-compliance issues and / or suggest improvements to existing operations.
- Short in Duration. Because conducting training for staff affects a port's ability to conduct its work for a day, training sessions should be brief, and conveniently located to minimize disruption to operations.

4.4.3 Potential Components of an Environmental Awareness Program

Often, the issues that most concern the community surrounding a port are not the same as what the port considers to be most important or highest risk issues facing a port. However, the port should consider these community issues carefully when setting the priorities for its training program. The following section presents ways to reach out to the community to understand its concerns before major problems exist, or before development occurs**. Figure 4 -3** presents some potential issues that could be incorporated into a port's training program.

Figure 4-3
Potential Issues for Environmental Awareness Programs