



EMS as a Tool for Improving Environmental Performance & Advancing Port Sustainability

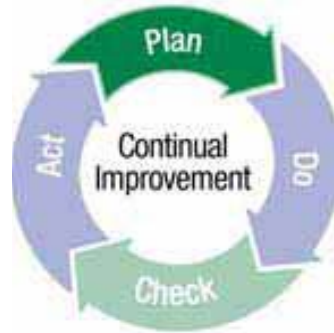
EAS 2009

Seminar on Greener Ports in the ASEAN Region

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Purpose

- Provide an overview of Environmental Management Systems (EMSs)



- Provide an overview of the EMS Assistance Project for Ports
- Provide examples of how EMSs are helping Ports improve their environmental performance and advance Port Sustainability.

EPA's Partnership with the American Association of Port Authorities (AAPA)

- In 2003, Developed the Environmental Management Systems (EMS) Assistance Project with technical support from the Global Environment and Technology Foundation (GETF).
- Since then, 3 groups of ports have worked together to develop EMSs for their individual ports – learning from each other.
- *EMS Primer for Ports, Advancing Port Sustainability* , January 2008



An Environmental Management System (EMS) Primer for Ports:

Advancing Port Sustainability



SectorStrategies

AAPA
American Association
of Port Authorities
Member of the Port of Los Angeles, the Oakland, Long Beach and the San Diego Ports

April 2007

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<http://www.epa.gov/sectors/ports>



**Great Lakes Maritime
Research Institute**

*A University of Wisconsin - Superior and
University of Minnesota Duluth Consortium*

**Manual of Best Management Practices
For Port Operations**

And

**Model Environmental Management
System**

PURDUE
UNIVERSITY



Lynn A. Corson, Ph.D., Director
Clean Manufacturing
Technology Institute
Purdue University
West Lafayette, Indiana

Steven A. Fisher
Executive Director
American Great Lakes
Ports Association
Washington, D.C.

<http://www.peercenter.net/ewebeditpro/items/O73F21148.pdf>

What is an Environmental Management System (EMS)?

- An EMS is a formal system for managing the environmental footprint of a Port.
 - Incorporates environmental considerations into day-to-day operations and strategic planning.
 - Provides a structured framework designed to achieve continual environmental improvement.

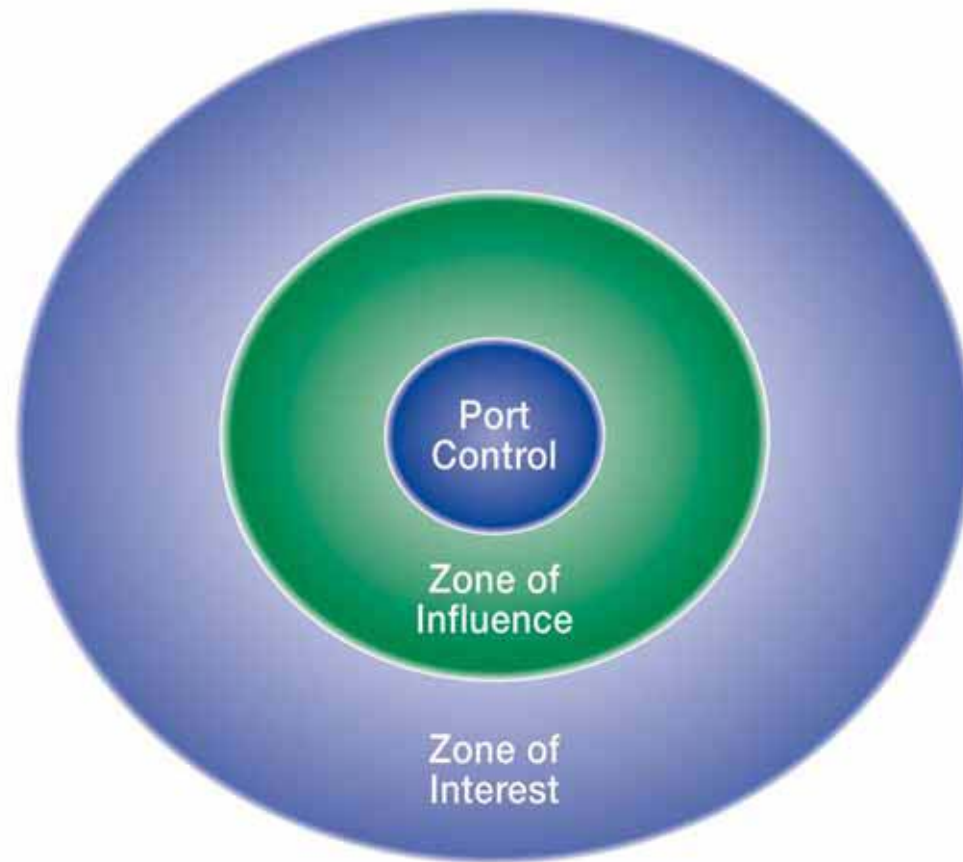
Why create an EMS?

- Key drivers as identified by 9 ports in the 1st

Ports EMS Assistance Project:

- Improve environmental awareness.
- Improve organizational efficiency & effectiveness.
- Improve environmental performance.
- Improve public awareness and confidence.

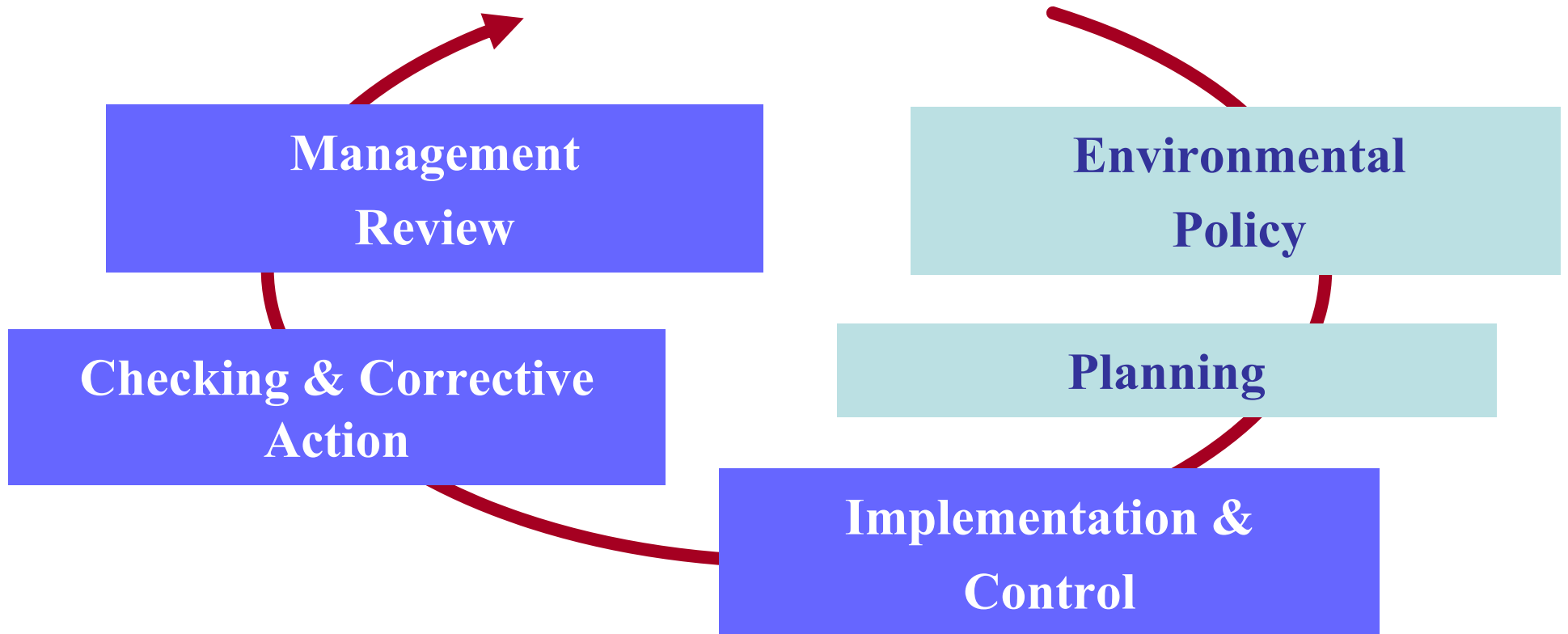
Zones of Port Control, Influence, and Interest



EMS

Plan-Do-Check-Act

Continual Improvement

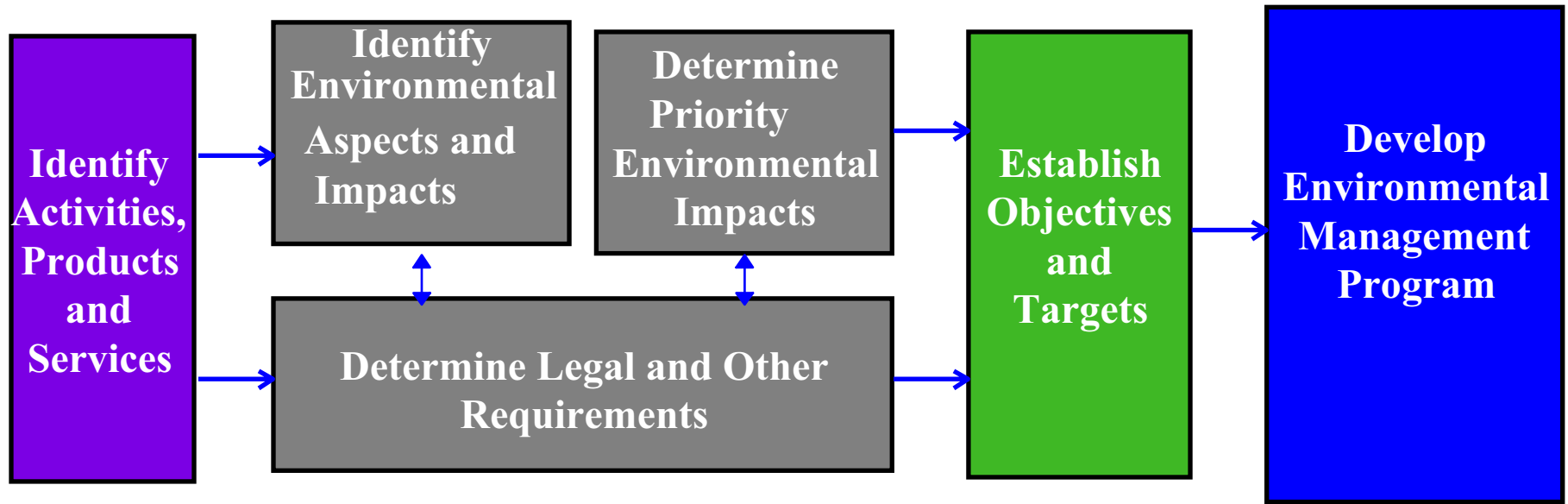


Environmental Policy

Minimum Commitments in an EMS Policy:

- Compliance with legal requirements and voluntary commitments
- Pollution Prevention
- Continuous Improvement in environmental performance, including non-regulated areas
- Communications with the community

Planning

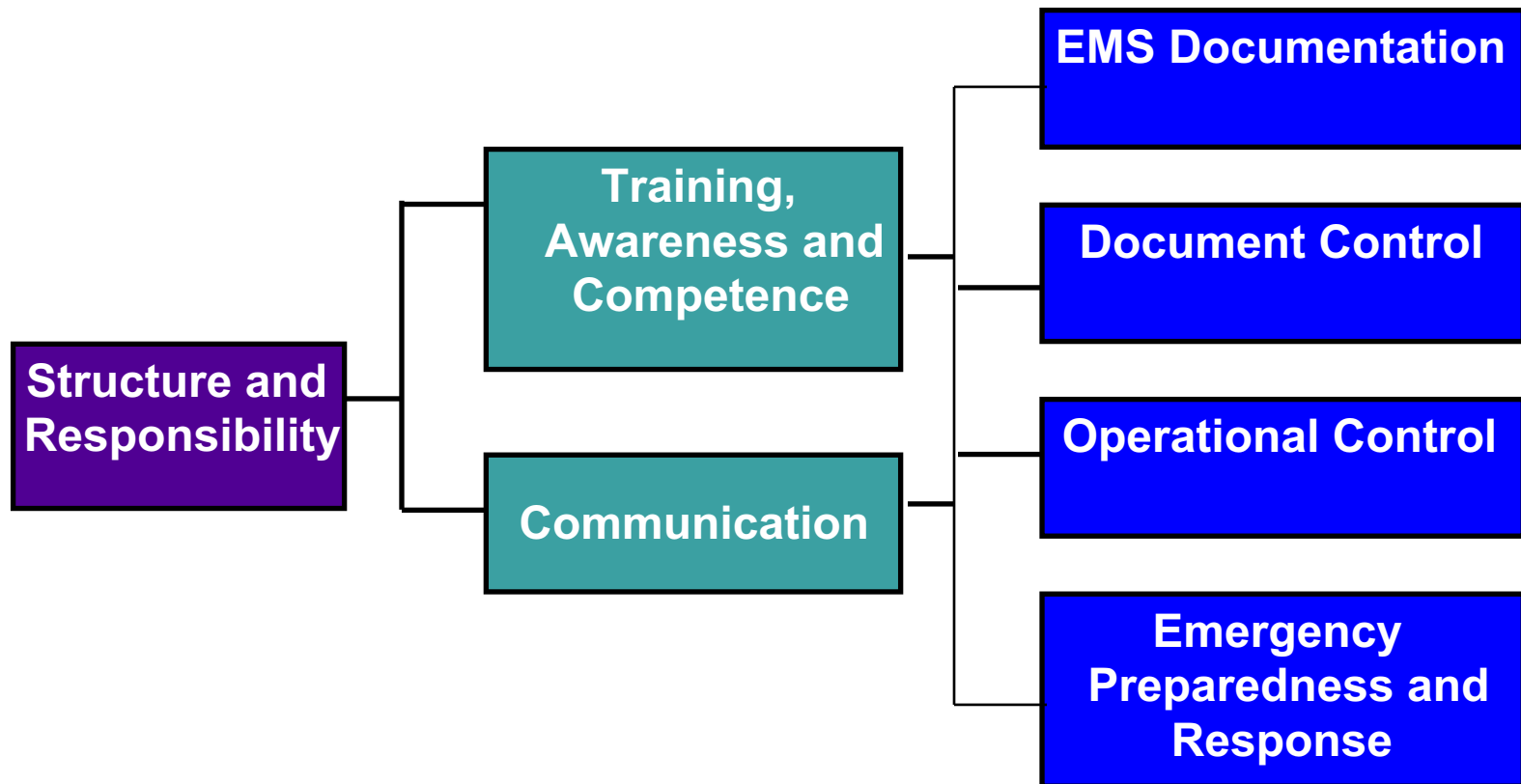


Implementation

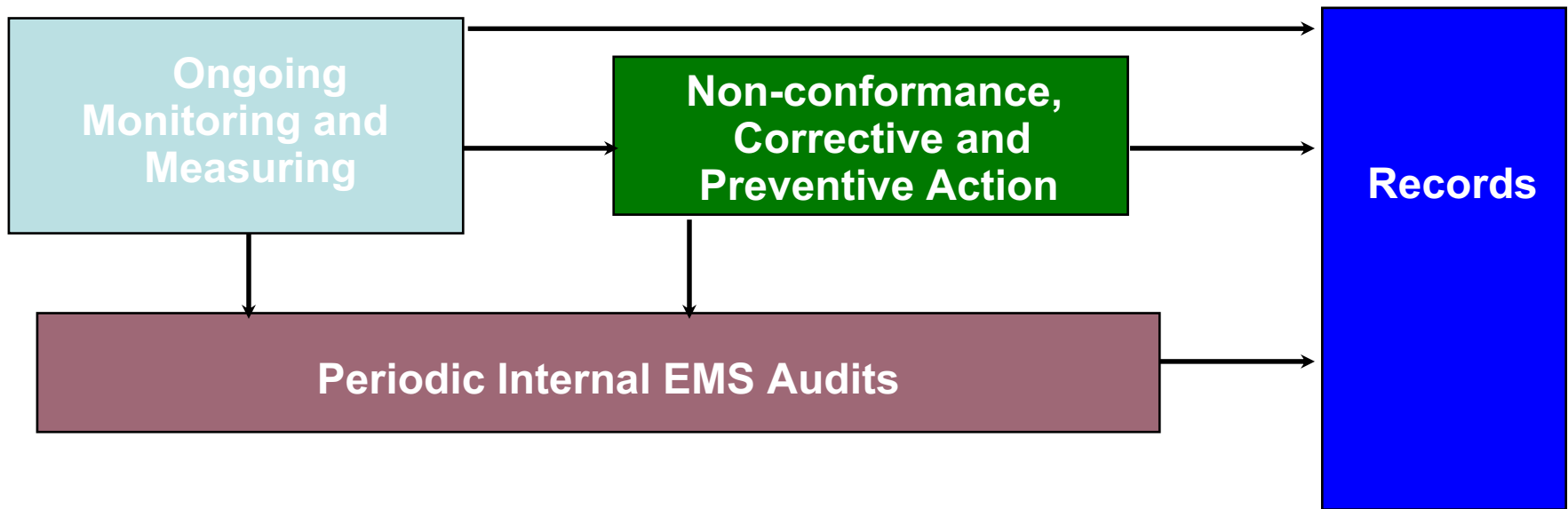
**Organization
Accountability**

**Capabilities &
Communications**

Controls



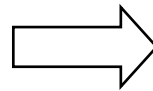
Checking and Corrective Action



Management Review Process

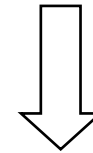
Take account of:

- audit findings
- progress records on objectives
- changes to facilities
- changes in activities, products or services
- changes in technology
- concerns of interested parties
- other relevant information



To Assess the:

- suitability,
- adequacy, and
- effectiveness of the EMS



In order to determine the need for change and improvement to:

- the environmental policy
- the objectives and targets
- other elements of the EMS

Ports' Benefits from EMS

- Virginia – Cargo handling equipment purchasing program reduced air emissions by 30% over 3 yr.
- Portland, OR – Reduced idling by 79%; 5% marine electric power from windmills.
- NY/NJ – Conserved 134 million gal. of potable water in '05 by fixing leaks, & saved millions; recurring savings.

Addressing Air Quality via an EMS

- **Plan:** Look at all the environmental **aspects**, i.e. elements of facility activities, products or services, that have the environmental **impact** of degrading air quality. Air emissions from tug boat is an example of an environ. aspect.
 - Do emissions inventory - will help determine environ. aspects.
 - Select Significant aspects and develop a Strategy/Action Plan with objectives and targets for reducing emissions in daily operations (and in future expansions).
- **Do:** Implement the Strategy/Action Plan.
- **Check & Act:** Measure and report progress; Re-access & refine strategy/plan over time; Management Review provides support & resources.

What are progressive ports doing to become better environmental stewards?

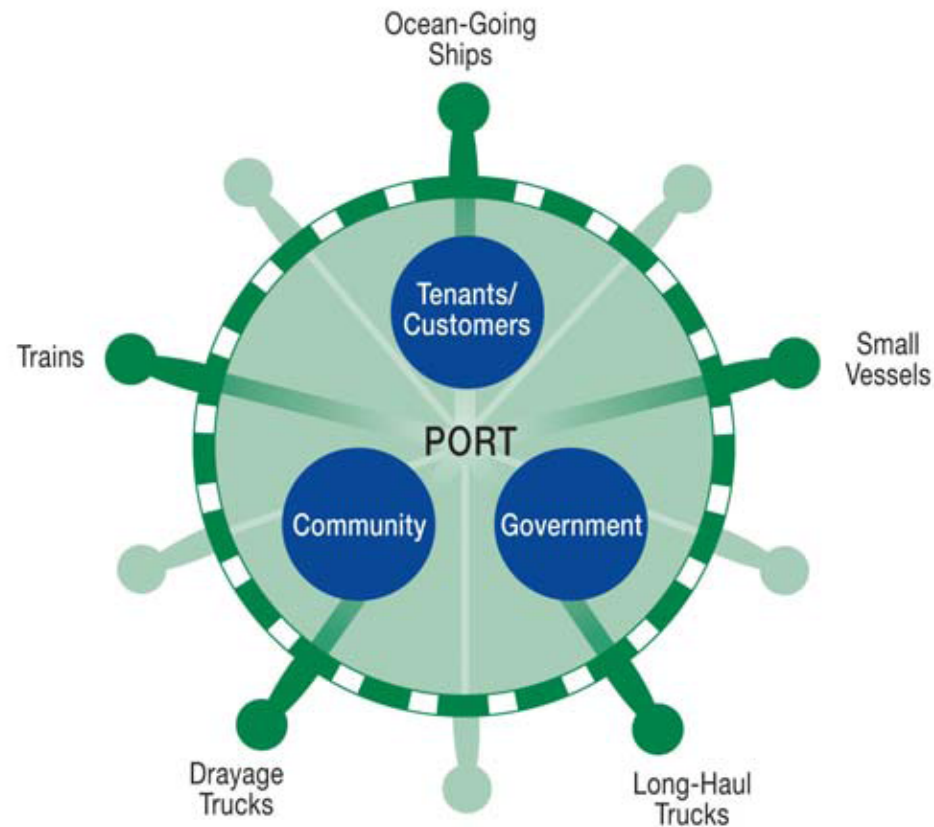
- Developing Environmental Management Systems (EMSs) for existing & NEW facilities.
- Measuring and reporting on continuous improvement in environ. performance
- Addressing community concerns: human health, environment & quality of life.

Progressive Green Practices

Examples of what some ports are doing

- Linking operational efficiency and environmental protection, e.g. automated gate systems, chassis pools.
- Inventorying current and projected emissions; Creating and implementing reduction strategies, e.g. off peak truck trips; creating regional performance measures.
- Pro-active integration of land use & transport. planning.
- Applying the EMS “systems approach” to security (Houston, Long Beach, Corpus Christi, NY/NJ, Portland).
- Green procurement practices; LEED building standards.
- Water: Installing permeable asphalt where appropriate.
- Renewable Energy: Wind and Solar power; Hybrid engines; Energy Star computers.

Steering Toward Sustainable Port Communities



Select U.S. Resources for Ports

- Kathleen Bailey, National Port Sector Lead
 - EPA Office of Policy, Economics and Innovation, 202/566-2953, bailey.kathleen@epa.gov
- <http://www.epa.gov/sectors/ports>
- <http://www.aapa-ports.org>
- <http://www.peercenter.net>