


Port Sustainability – Balancing Competing Priorities

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Outline

- ▶ Port of Houston Authority Background
 - ▶ Sustainability Principles
 - ▶ ISO 14001 Environmental Management System
 - ▶ Program Areas
 - Air
 - Waste
 - Water
 - Beneficial Uses for Dredge Material
 - ▶ Questions
- 

Port of Houston

- ▶ 1st in US for foreign tonnage
- ▶ 53 mile long industrial channel
- ▶ Largest petrochemical complex in US
- ▶ Approximately 7,000 ocean going vessels and 150,000 barges visit per year
- ▶ \$11 billion in economic impact
- ▶ 200 million tons of cargo

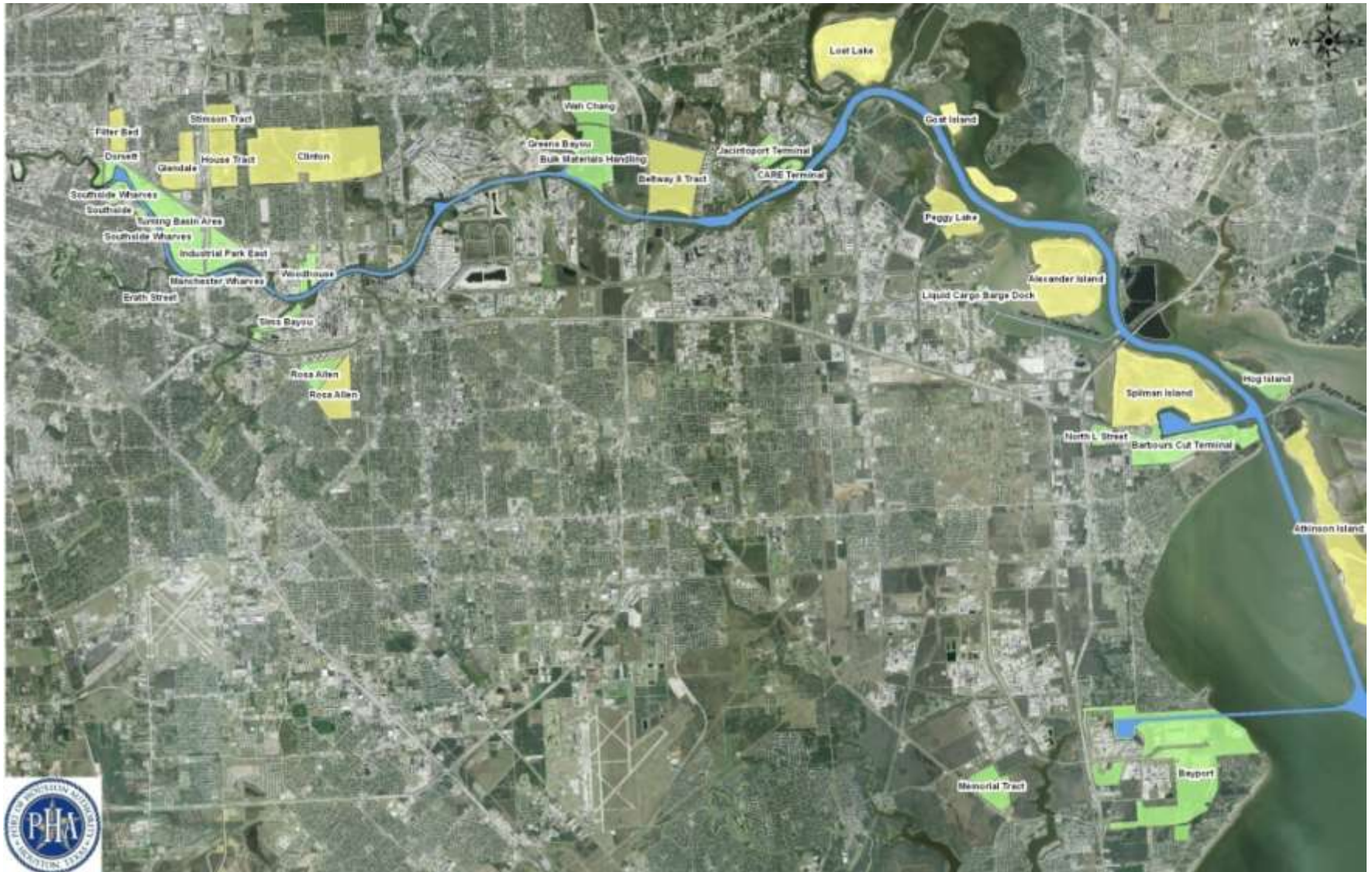


Port of Houston Authority


- ▶ Political Subdivision of the State
- ▶ Led by a 7 member Board of Commissioners
- ▶ 9 facilities
- ▶ Own over 9,000 acres of land
- ▶ Operating/Landlord Port Authority
- ▶ 150 tenant properties, with approximately 75 tenants
- ▶ Cargo includes nearly everything from break bulk to containers




Port of Houston Authority Properties



Presentation Goals

- ▶ Give a broad definition of what sustainability might mean to your port
 - ▶ Explain PHA programs and involvement
 - ▶ Describe our key programs
 - ▶ Future Possibilities
- 

Definitions

- ▶ Sustainable Development
 - meeting the needs of the present without compromising the needs of the future generations (Bruntland Commission 1987)
 - ▶ Sustainable Corporation:
 - one that creates profit for its shareholders while protecting the environment and improving the lives of those with whom it interacts (Savitz, 2006)
 - ▶ AAPA Sustainability Resolution (2007)
- 


National Port Sustainability

- ▶ American Association of Port Authorities
 - Industry trade association
 - Developed sub-committee for sustainability
 - Adopted a Sustainability Resolution in 2007
 - Sustainability for Ports
 - Business strategies and activities that meet the current and future needs of the enterprise and its stakeholders, while protecting and sustaining human and natural resources (AAPA Resolution)

Port Capital

“A sustainable organization is one that lives off interest rather than depleting capital.”

▶ Examples of port capital:

- Natural resources (air, water, energy, building materials)
 - Customers
 - Community Support
 - Ability to finance (bond rating, insurance)
 - Employee satisfaction
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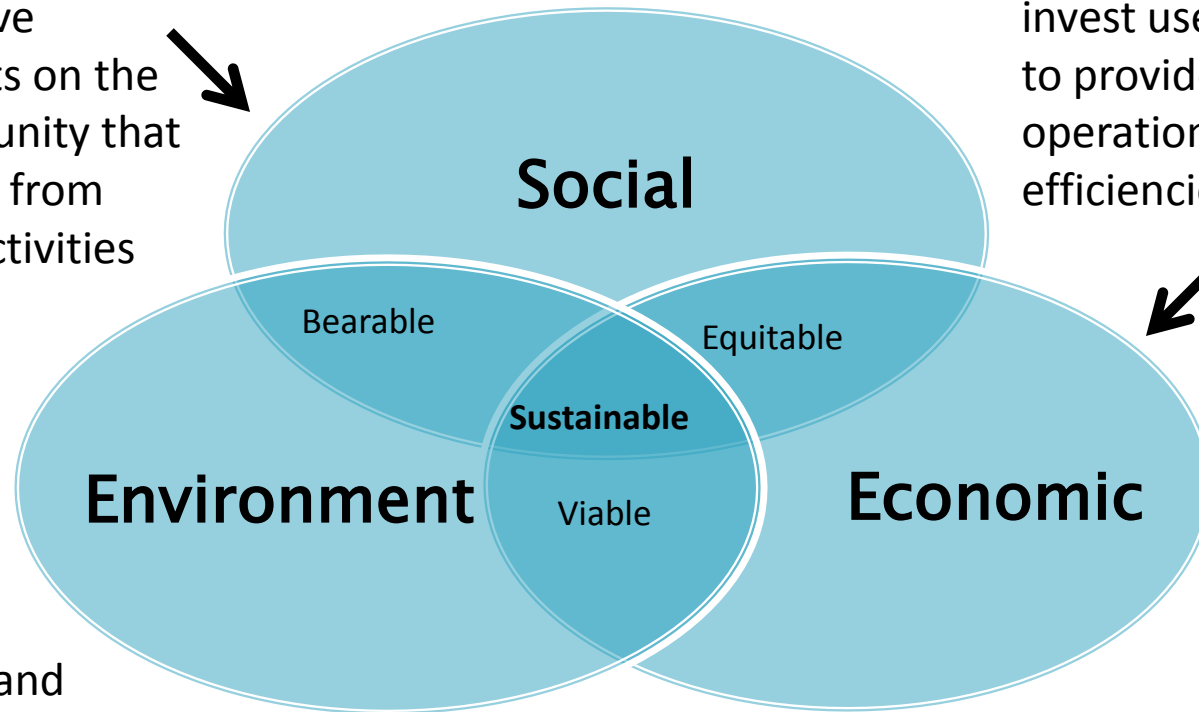
Port Sustainability

People, Planet, Profit

Minimize negative impacts on the community that results from port activities



Collect and re-invest user fees to provide operational efficiencies



Understand and comply with all applicable local, state, and federal regulations



AAPA Resolution

WHEREAS, Sustainability involves the simultaneous pursuit of economic prosperity, environmental quality of social responsibility; and

WHEREAS, Ports hold a unique role in transportation, logistics and infrastructure development; and

WHEREAS, Port must be financially viable in order to achieve their missions and contribute to the economic prosperity of their regions and nations; and

WHEREAS, Ports recognize that their activities may impact the environment and natural resources; and


WHEREAS, Ports recognize that they have responsibilities as members of the communities in which they operate; and

WHEREAS, Ports recognize that a long-term balanced approach is required;

Now **THEREFORE**: AAPA embraces the concept of sustainability as a standard business practice for ports and the Association. For ports, sustainability means business strategies and activities that meet the current and future needs of the enterprise and its stakeholders, while protecting and sustaining human and natural resources; and further

Recognizing that each port operates within a unique business, political, environmental and social context, we further our sustainability resolve by putting forth guiding principles for consideration by member ports.

AAPA Resolution: Guiding Principles

1. Communicate the goals of sustainability across the organization and allocate resource requirements for implementation;
 2. Integrate sustainability throughout port activities and in both near-term and long-term planning process;
 3. Build upon and share existing sustainability best practices, keys to success, lessons learned and approaches for implementation;
 4. Communicate and engage with internal and external stakeholders to encourage open dialogue, accountability and collaboration;
 5. To the extent possible, use appropriate data and metrics as part of the process for implementing sustainability;
 6. Evaluate the total life cycle costs of projects and decisions;
 7. Recognize that sustainability is a dynamic effort requiring flexibility and continuous improvement.
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Sustainability Programs

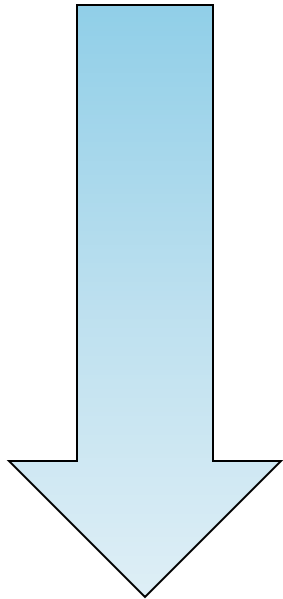
more
common

Respond to a crisis


**Ease in, Starting with low hanging
fruit**

**Implement a well-thought-out
program**

less
common



Current PHA Sustainability Actions

- Environmental Management System
 - Established in 2001
 - Goals focus on continual improvement, regulatory compliance, and pollution prevention
 - Focus areas
 - Five year strategy planning
 - Developed for all Environmental Program areas
 - Based on the Sustainability principles of people, profit, and planet
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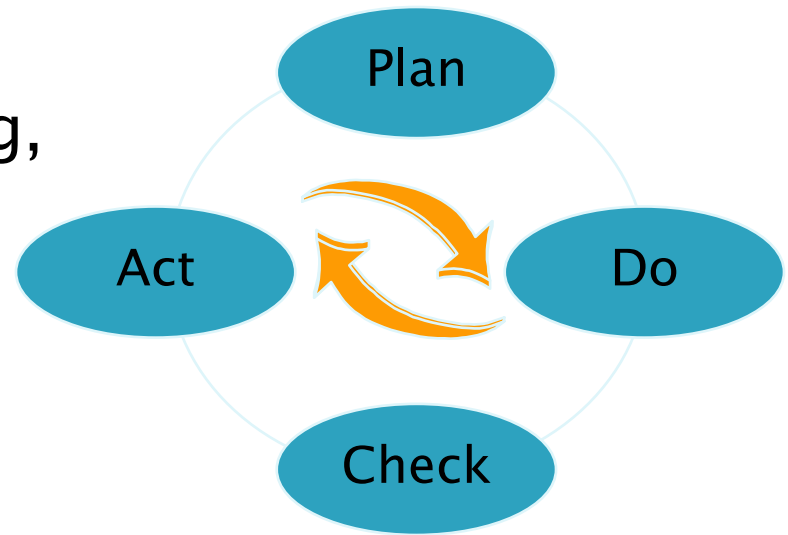
Environmental Management System – ISO 14001

ISO 14001 is the International Standard for Environmental Management Systems (EMS)

Based On :


Plan, Do, Check, Act

A continual cycle of planning, implementing, reviewing and improving the processes and actions that an organization undertakes to meet its environmental obligations



What is an EMS?

It is a systematic approach to dealing with the environmental aspects of an organization. It is a “tool” that enables an organization to control the impacts of its activities and services on the environment in a manner consistent with its policies, goals and objectives.



What is the Difference?

- ▶ Reactionary
- ▶ Compliance Focus
- ▶ Separation of Environmental Affairs from other processes
- ▶ Informal/ Undocumented Procedures
- ▶ Proactive, Continuous Improvement
- ▶ Consideration of all environmental impacts
- ▶ Integration of Environmental Affairs with other processes
- ▶ Explicit, Documented Procedures

BEFORE

AFTER

PHA Benefits Realized

- Improved understanding of Environmental Issues
- Improved Compliance
- Improved Inter-Departmental Communication
- Improved Agency Communication
- Enhanced Management Confidence
- Enhanced Public Image
- Improved Employee involvement

.....and Most Importantly



Environmental Improvements

- **Reduced Air Emissions**
 - **Clean Air Strategy Plan**
 - **Vanpooling program**
 - Eliminated 493 Tons CO₂
 - 902,642 Vehicle Miles Eliminated
 - 43,779 Gallons of Fuel Saved
- **Improved Water Quality**
 - **Demonstration Testing of Technologies – LID**

Environmental Improvements

- Landfill Diversion
 - Recycling approximately 85% of industrial waste
 - Recycling program at Terminals
 - Cardboard, Paper, Plastic, aluminum
- Energy Efficiency
 - Pilot projects for lighting being developed

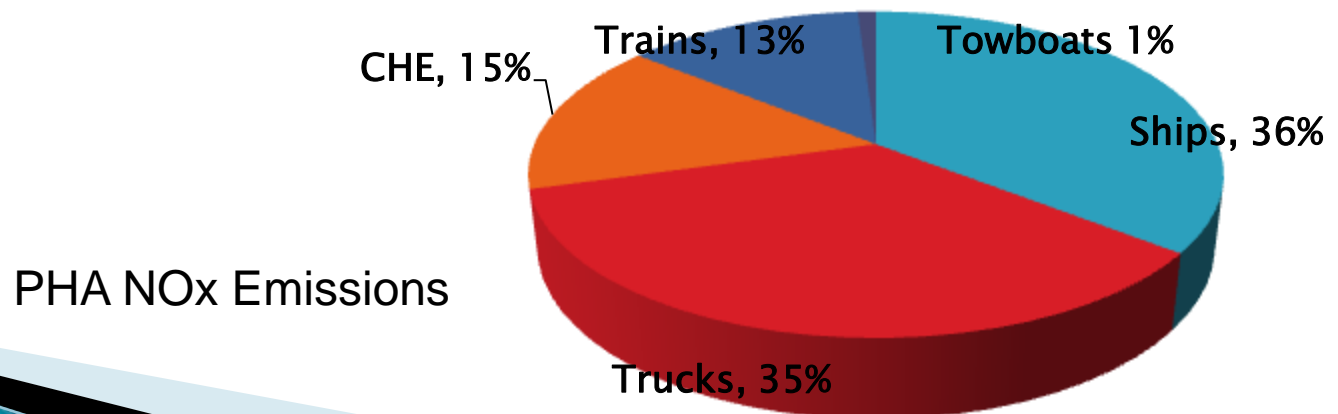
Environmental Impacts to our Region

- ▶ Air Quality
- ▶ Waste Management
 - ▶ Water Quality
 - ▶ Habitat Impacts



Air Quality Efforts– Stewardship

- ▶ Development and implementation of the **Clean Air Strategy Plan**
- ▶ Participation in Regional and National Air Quality Planning Committees
- ▶ Completed an Emission Inventory including intermodal operations
- ▶ OGVs, Trucks, Harbor Craft, CHE, Rail



Grants



- ▶ DERA Smartway Dray Truck Loan – \$9 million
 - Partnership with HGAC, EDF & PHA
 - PHA – education, outreach, funding
 - Truck Fairs
- ▶ PHA Applied & Awarded Total of \$3.4 million
 - \$611,466 to PHA
 - repower tour boat and replace yard tractors
 - 18 engines: 14 tons/NOx, 1.26 tons VOC, 0.58 tons/PM
 - \$2,856,666 Pass through to Tenants and Users
 - Yard tractor, forklift and container handler replacements, repower, and retrofits
 - 175 engines: 130 tons/NOx, 11 tons/VOC, 30 tons PM and 1,127 tons CO2
- ▶ DERA Fuel Switch Program – \$1.5M
 - Maersk Line – 21 vessels
 - 323 vessel calls at APM terminal at BCT
 - 2 year duration – July 2010–July 2012

EMISSIONS >>>

Waste Management Efforts

- ▶ Focus on reducing waste
- ▶ Identify opportunities for environmentally preferred purchasing
- ▶ Continue existing recycling programs
- ▶ Identify new recycling opportunities
- ▶ Dispose industrial and municipal waste in responsible manner



Water Quality: Regulatory Programs

- **Municipal**
 - Municipal Separate Storm Sewer permit for all PHA facilities (includes PHA and tenant operations)
- **Industrial**
 - PHA maintenance facility and Tour Boat have permits
 - PHA tenants are required to hold permits, if applicable
- **Construction**
 - Best Management Practices Plan for less than 1 acre
 - Construction General Permit with Storm Water Pollution Prevention Plan for site 1 acre or larger

Water Quality- Activities



Inspections



Reporting



Monitoring



Education



Evaluations



Outreach

Water Quality: Educational Programs



Litter Campaign (Stash Your Trash)

- Facility-wide litter and recycling program



City of Houston WaterFest

Teach Houston students the importance of trash clean up and impacts of pollution on water quality.

- Water Wise

Supports a program to teach local students how to be water-wise and use water con at home.



Water Quality: Community Outreach

- ▶ First Ladies' EcoBash (September)
 - PHA volunteers worked to clean-up trash, plant trees and spread mulch along Brays Bayou
 - 400 bags of trash collected, 3000 trees planted, 180 bags of mulch spread,
- ▶ La Porte Keep Houston Beautiful Clean-Up Event (April)
 - 150 volunteers joined together to remove trash from drainage ditches and roadways
 - 146 large trash bags collected
- Clean and Green
 - Support the Buffalo Bayou Partnership program to h



PHA Habitat Efforts

- ▶ Increased development can result in reduced habitat
- ▶ Mitigation programs led by regulatory requirements can address some losses
- ▶ Beneficial Use Sites can create new habitat or improve existing habitat



Wetland Creation and Enhancement

- ▶ Memorial Tract Site
 - 173 acres
 - 2 basins
 - Mitigation for terminal expansion



Houston Ship Channel Expansion Project

- ▶ Need for a deeper and wider channel (45' x 530')
- ▶ Issues to Address:
 - Environmental
 - Capacity and Safety
 - Economics
 - Social

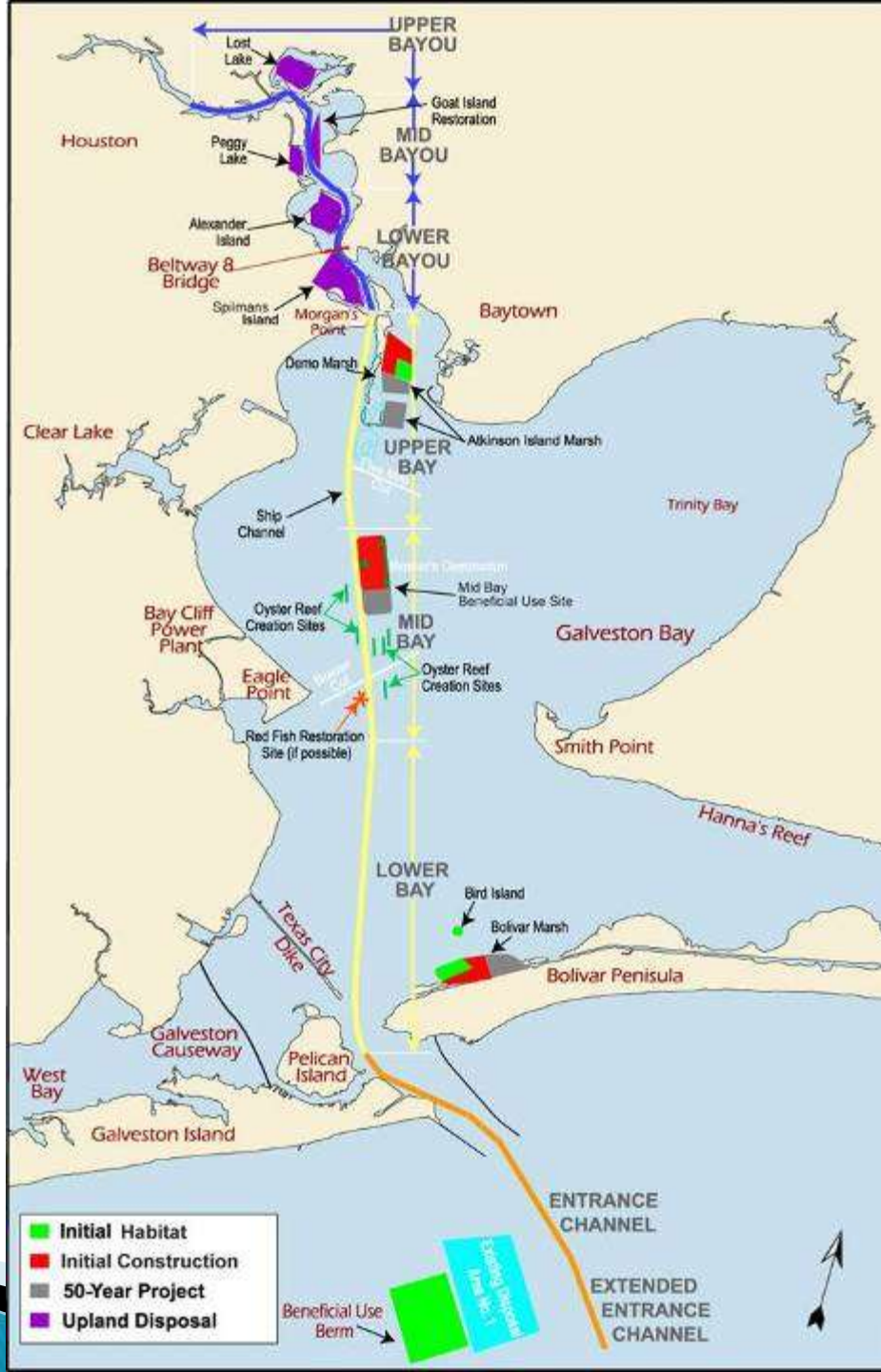


Beneficial Uses Group

- ▶ PHA and US Army Corps of Engineers project to deepen and widen the Houston Ship Channel
- ▶ Part of the project was the beneficial use of dredged material to create 4,200 acres of marsh in Galveston Bay.
- ▶ Currently have completed construction of approximately 2,200 acres and anticipate completing another 1,400 acres in 2010



50 Year Plan





Gorini Marsh-220 acres



200 acres

215 acres

185 acres

215 acres

Atkinson Island


Evia Island

6 acres





Future Sustainability Plans

- Revision to environmental policy to more clearly identify sustainability goals
 - Evaluate implementation of sustainable projects such as Low Impact Development and Native Plantings
 - Continue interaction with local and regional stakeholders
 - Maintain Environmental Management System programs with goal of expanding the scope while reducing/maintain ecological footprint
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The background of the slide features a serene sunset scene over a body of water. The sky is a mix of soft pinks, oranges, and yellows, with the sun's glow reflecting on the water's surface. In the foreground, the silhouettes of several birds, likely herons or egrets, are visible against the bright light of the sunset. One bird is captured in flight on the right side, while others stand in the water or on the shore. The overall mood is peaceful and natural.

Questions?

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**Make sure your Port Authority is a member of
the AAPA's Environment Committee!**