

AAPA Marine Terminal Management Program

**Sustainability and Green Port Initiatives –
Changing the Way Ports Operate.**

Rick Sheckells

Chief, Environmental Initiatives

Maryland Port Administration

October 21, 2008



Why this matters

- Growing Perception about Seaports seems to be:

At best: Growth brings problems

At worst: Ports are problems

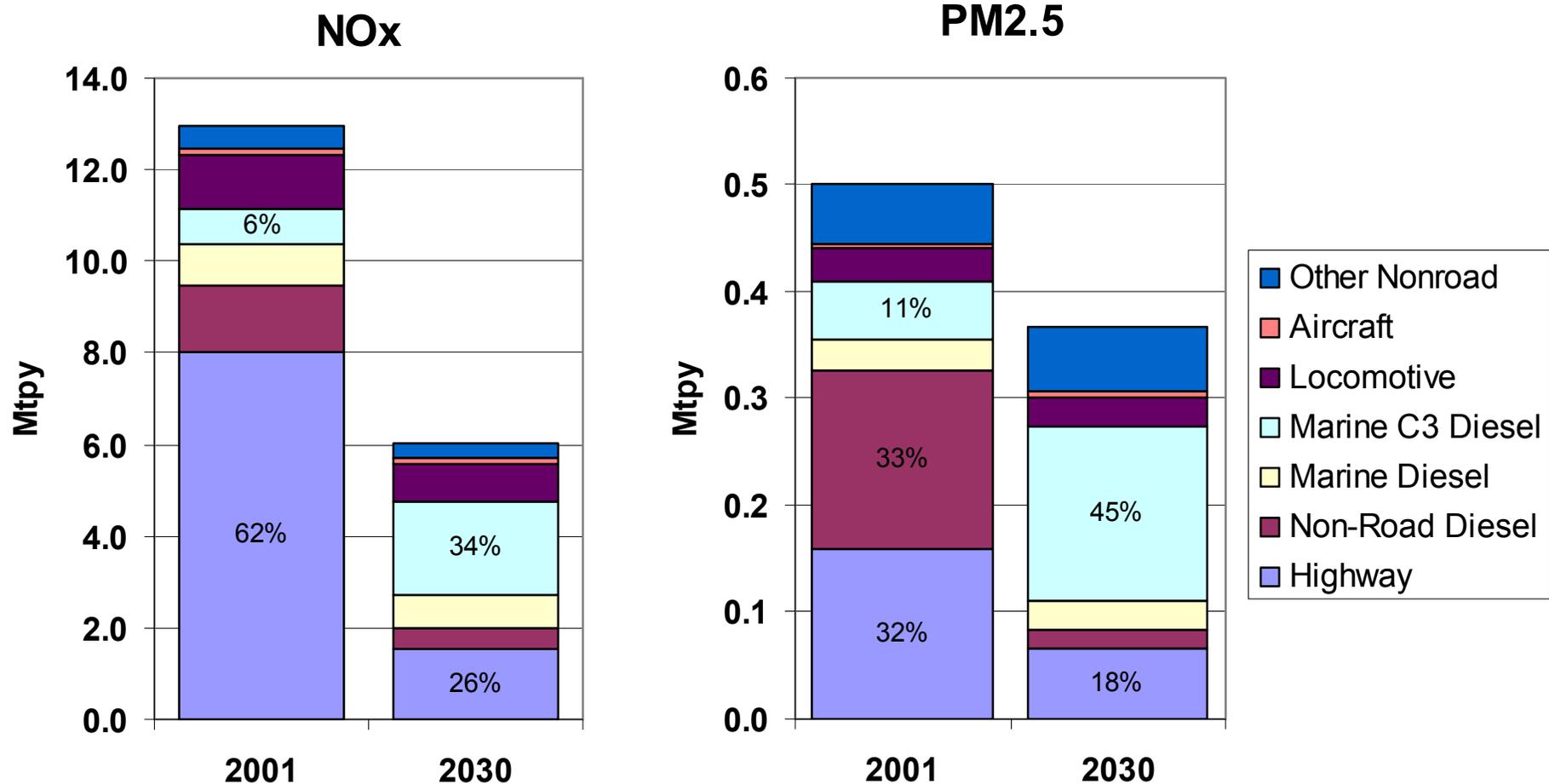
- The California experience.
- EPA's growing focus on seaports.
- Spotlight on our industry.
- New regulatory frontier.
- Environmental justice issues.

Specific Environmental Issues

- **Air Quality**
 - National Ambient Air Quality Standards
 - Ground level ozone
 - Fine particles (PM 2.5)
 - Health based
- **Water Quality**
 - Related to dredging activities
 - Nutrients
 - Toxics
 - Dissolved oxygen
 - New discharge requirements for ships are possible
 - Engine cooling water
 - Grey water
 - Ballast water
- **Environmental Justice**



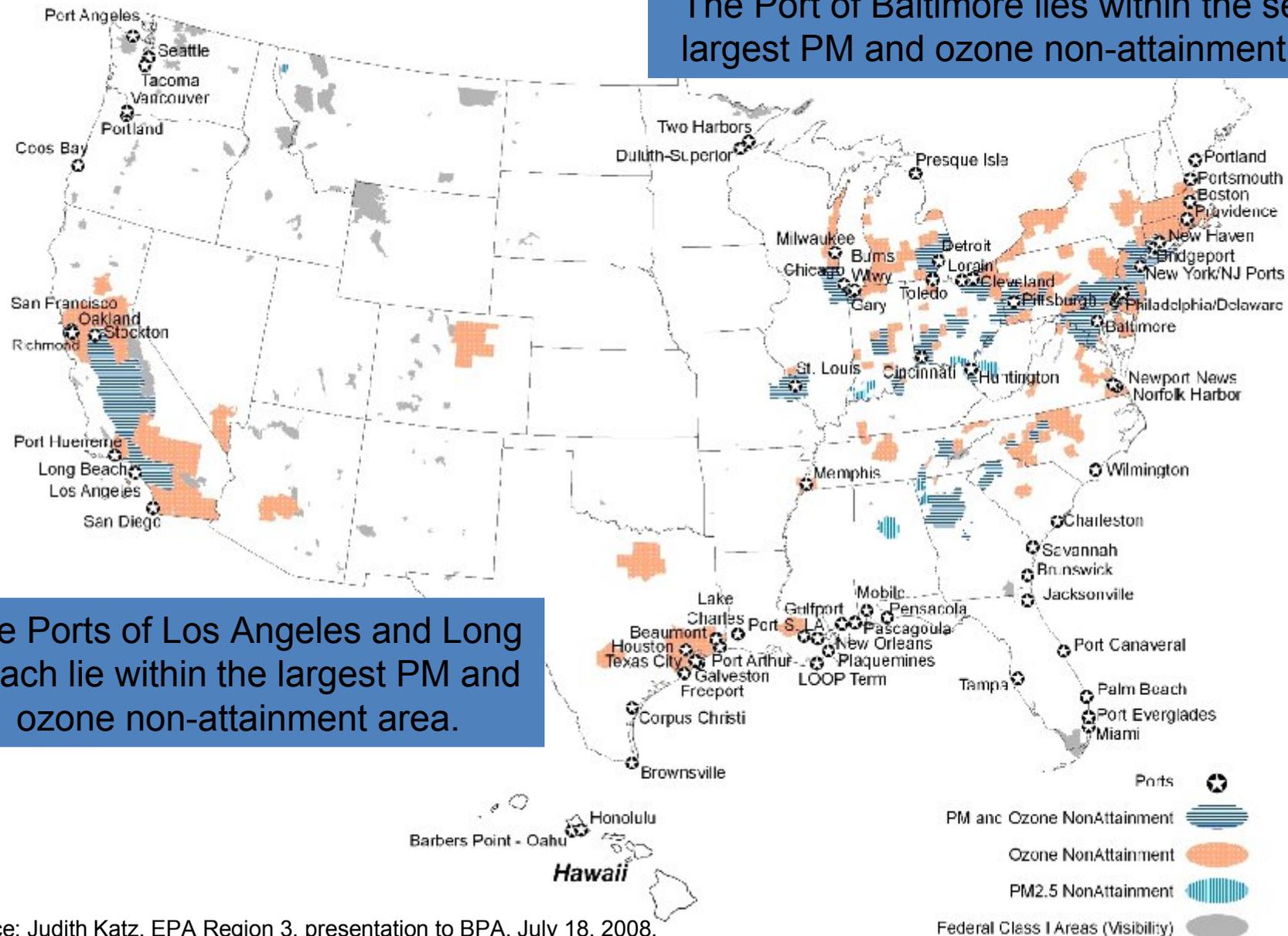
EPA Perspective: National Mobile Emission Estimates by Source



Note: Year 2030 projections for marine sources are estimated using “pre-clean diesel” technologies.

EPA's Perspective on Ports and Air Quality

The Port of Baltimore lies within the second largest PM and ozone non-attainment area.



The Ports of Los Angeles and Long Beach lie within the largest PM and ozone non-attainment area.



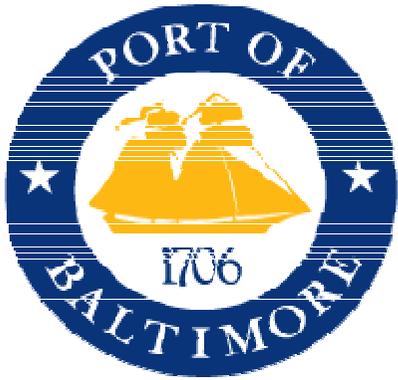
Air Quality

- EPA actions
 - New rulemaking for heavy duty diesel engines
 - Ocean vessels
 - Harbor craft
 - Locomotives
 - Incentives for voluntary actions to achieve early emission reductions
- IMO Action
 - New low sulfur fuel standards
 - Late 2008 adoption



Water Quality

- Big, visible issues for Chesapeake Bay
 - Invasive aquatic species
 - Ballast water discharge
 - Nutrients
 - Dredging
 - Low dissolved oxygen
 - Dredging

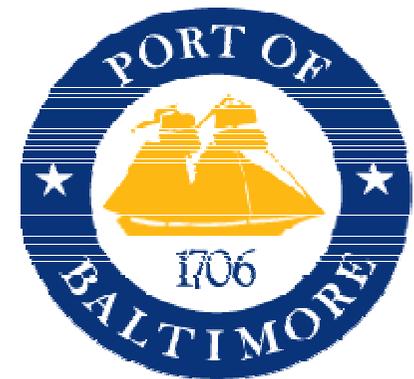


Smaller issues count

- Noise, Congestion, and Safety
- Trash and litter
- Recycling
- Energy - conservation and alternatives
- Storm water, groundwater, USTs
- Legacy contaminants
- Compliance actions
- Other...

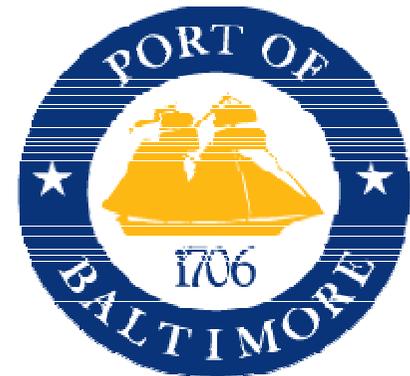
Who Cares about these issues?

- Port Stakeholders
 - Environmental Organizations
 - Larger Community and Local Neighbors
 - Recreational Waterway Users
 - Elected Officials
 - Regulatory Community
 - MPA Customers and Tenants
 - Private Port Community



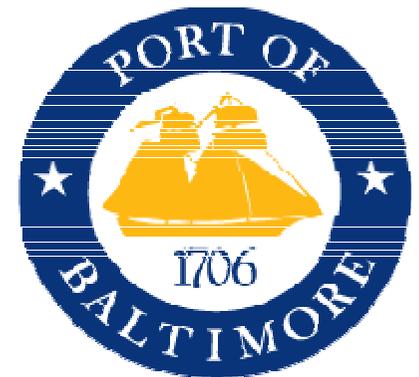
How are we measured?

- Port Stakeholders
 - Environmental Organizations
 - Larger Community and Local Neighbors
 - Recreational Waterway Users
 - Elected Officials
 - Regulatory Community
 - MPA Customers and Tenants
 - Private Port Community



How are we measured?

- Port Stakeholders
 - Environmental Organizations
 - Larger Community and Local Neighbors
 - Recreational Waterway Users
 - **Elected Officials**
 - Regulatory Community
 - **Customers and Tenants**
 - **Private Sector Port Community**
 - **Tonnage and Jobs**





How are we measured?

- Port Stakeholders
 - Environmental Organizations
 - Larger Community and Local Neighbors
 - Recreational Waterway Users
 - Elected Officials
 - Regulatory Community
 - MPA Customers and Tenants
 - Private Port Community

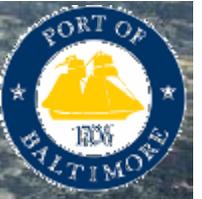
Those who issue or deny us a “Social License to Operate”

- Tonnage and Jobs
- **Environmental Performance (and Security)**

Understanding how we are measured... ...drives how we need to respond.

- Variables in a “sustainability” approach for addressing individual or unique environmental challenges.
 - Port of Baltimore Approach.
 - Responding to a need.
 - Reinventing past reinvention.
 - The key is the process, not the project.





Baltimore

Inner Harbor



Masonville Project Area



Masonville Project Site Is Environmentally Degraded

- Site of MARYLAND SHIPBUILDING AND DRYDOCK COMPANY
- Site of Kurt Iron and Metal facility, Coral Sea aircraft carrier ship-breaking
- Derelict vessels and barges (25)
- Contaminated bottom sediments; elevated concentrations of metals (including mercury), organic compounds (including polychlorinated biphenyls, polyaromatic hydrocarbons, and dioxins)

Masonville Cove

An aerial photograph of an industrial waterfront area. A white circle highlights a specific section of the waterfront. The highlighted area contains a small pond, a sandy area, and some vegetation. The surrounding area includes various industrial buildings, storage tanks, and a large body of water.

54 Acres Land
70 Acres Water



Cove Existing Conditions



Masonville Cove

54 Acres Land
70 Acres Water



Maryland Shipbuilding & Drydock Company Kurt Iron and Metal Site



Community Requests

- Limited Public Access
- Clean Shoreline
- Shoreline Trails
- Observation Towers
- Habitat Enhancement
- Passive Recreation
- Bird Sanctuary
- Education Center
- Canoe/Kayak Launch
- Wetlands
- Community Stewardship

FERRY BAR CHANNEL

Existing Waterline

Reef

Fringe Marsh

Masonville DMCF

Substrate

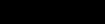
Masonville
Cove

KIM

Legend

 Demo Pier 1 & 3

 Cofferdam/Waterline
Dike

 Storm Drain PH 2

Non-Tidal
Wetland

Bird
Sanctuary

Wetland

Environmental
Education Center



Masonville Cove Environmental Education Center

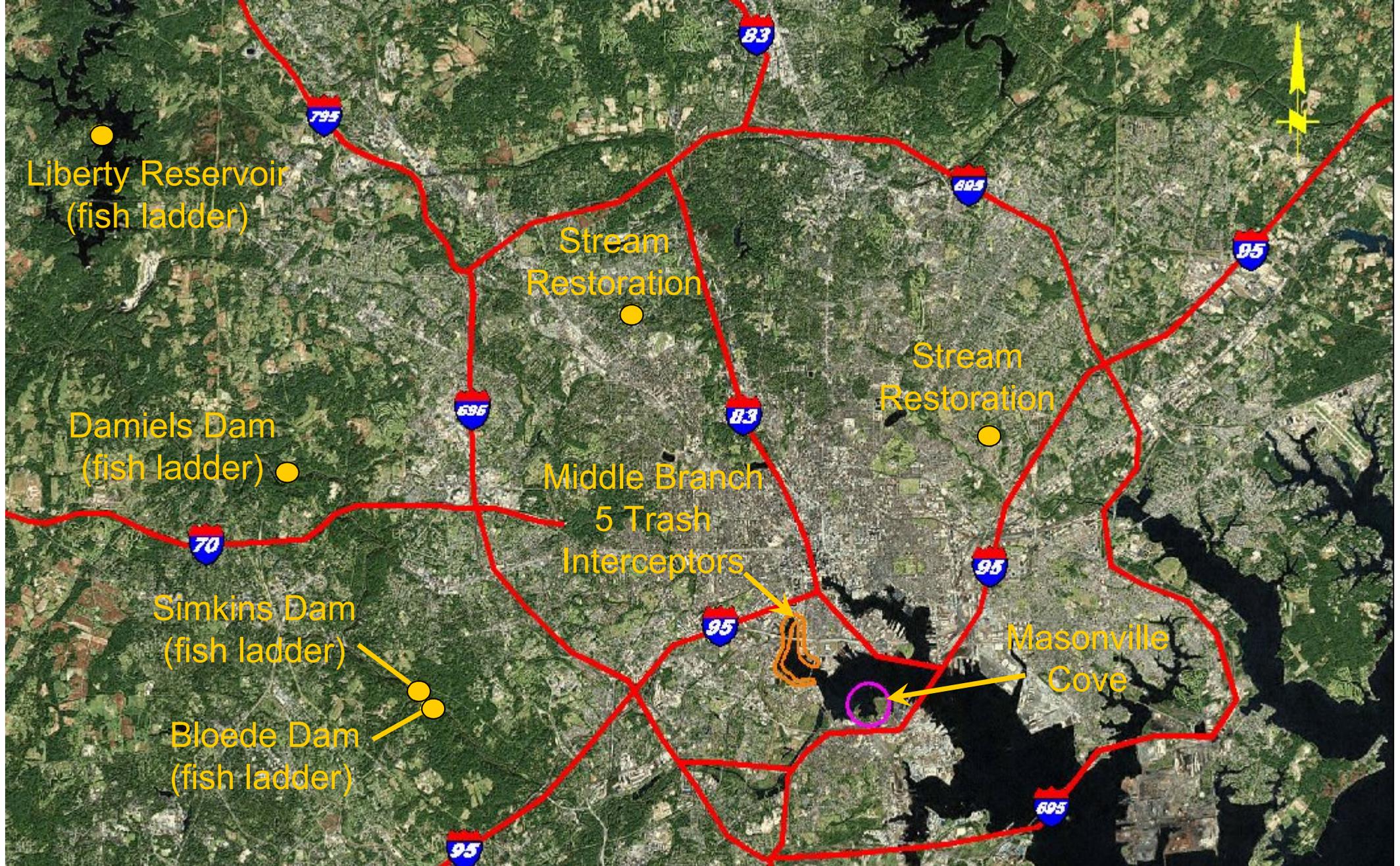


Education Center Project Goals

- Provide a focal point for the Masonville Cove Restoration
- Provide a Community Resource
 - Environmental Education Center
 - Community Meeting Room
 - Programs for Community Youth
- Demonstrate “Green Building” Techniques

Design Features

- “Near Zero Net Energy” Building
- Ground Source (Geothermal) HVAC System
- Solar Energy Generation for Thermal and Electric Energy
- Emphasis on the Building Envelope:
 - Insulation and Air Sealing
 - Passive Solar Maximization
- Fresh Air Energy Recovery
- Maximizes Siting & Placement Benefits
- Minimize Stormwater Runoff
- Local, Recycled and Recyclable Materials
- Extremely Productive Building with Minimal Energy Input



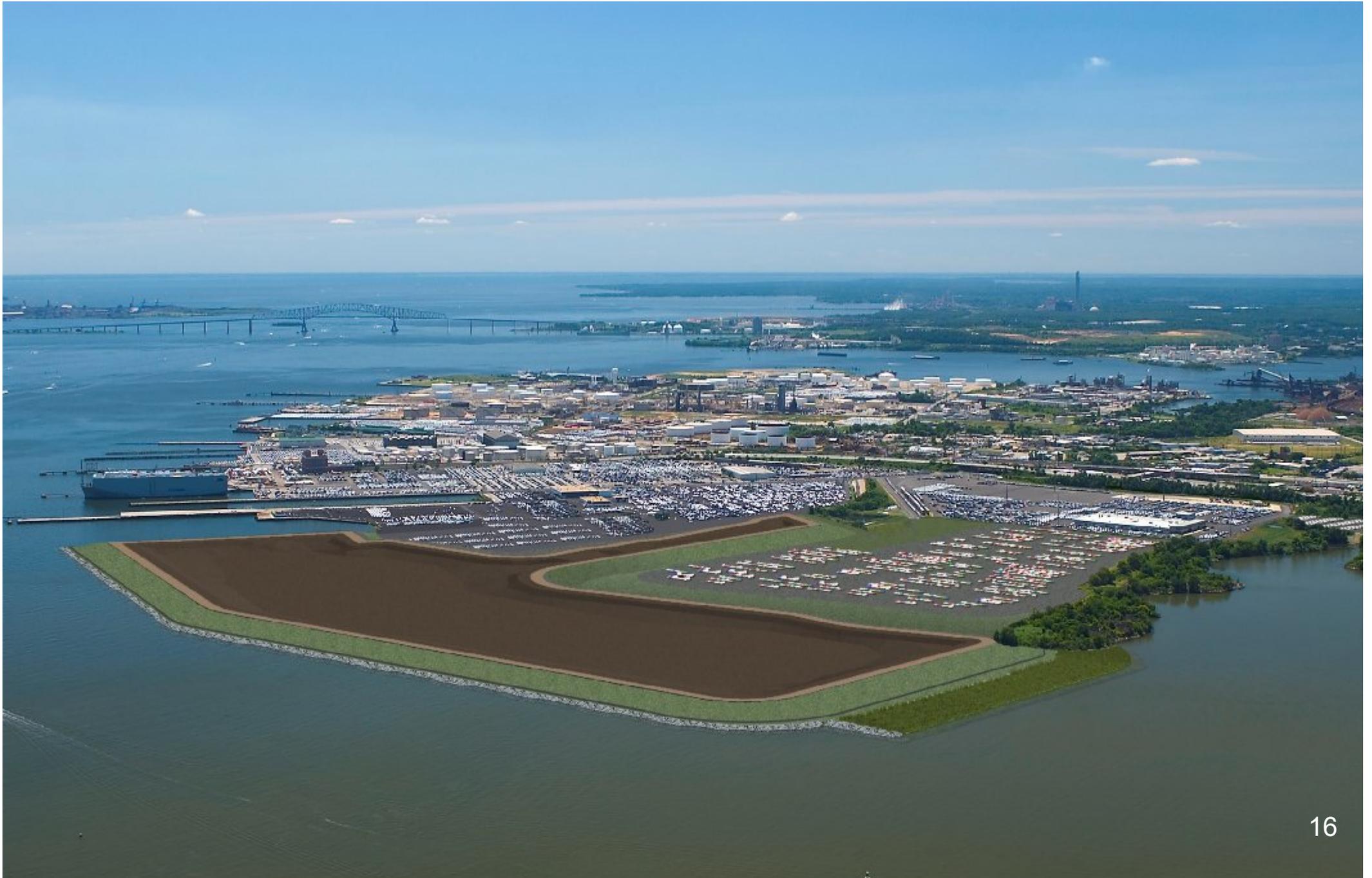
Masonville Mitigation and Enhancement

Masonville Community Benefits

- Urban environmental education experience for hundreds of students
- Habitat restoration projects for community volunteers
- Protection of Cove through a conservation easement held by Shores of Baltimore Land Trust (community-based)
- Community revitalization:
 - Reconnects Brooklyn and Curtis Bay residents to shoreline
 - Educational Center showcases green building technologies, provides environmental education classroom and community meeting space
 - Unique urban migratory bird sanctuary
 - Pedestrian friendly traffic improvements
 - Gwynns Falls Trail extended into Cove natural area
 - Passive recreation
 - Community stewardship



Dredged Material Placement Site



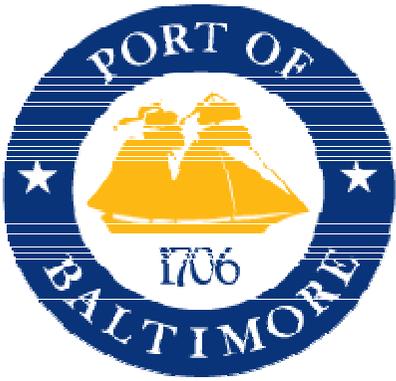
Proposed, Future Terminal





Sustainability

- Masonville illustrates the outcome of a sustainability model.
 - Engaged stakeholders in an entirely different way.
 - Blank-sheet / Hands-off principle.
 - True empowerment of external stakeholders.
 - **Neutral party engaged on behalf of external stakeholders.**
- “Masonville is a national model for how to engage stakeholders” source: U.S. EPA



Sustainability

- Its not the project that matters.
- What matters is that seaports have an effective process for dealing with increasingly complex issues.
- Sends an important signal to investors...
...that investment will be productive.

What best suits our industry ?

- A written plan ...
- ...or flexible and adaptable thinkers in the management structure of seaports.



Comments and Questions

Rick Sheckells

(410) 917-9779 (cell)

rsheckells@marylandports.com

