



Alliance of the Ports of Canada, the Caribbean,
Latin America and the United States

Harbors, Navigation & Environment Seminar
and
GreenPort Americas 2010

PORT of BALTIMORE
GreenPort Initiatives



Green Port Initiatives



- Context for decision making ???
- Whether developing environmental initiatives or defining sustainability, the outcomes must respond to the drivers that matter most.
- These drivers will vary among seaports.

Drivers such as ...

Chesapeake Bay



- Iconic for.....
 - environmental challenges that arise from growing population density;
 - what it provides (or doesn't provide) as a resource;
 - the efforts to restore it; and
 - the outcomes that restoration efforts can achieve.

Leads the Port of Baltimore to a focus on water



- Nutrient loading
- Loss of SAV
- Sedimentation / erosion
- Invasive aquatic species
- Land subsidence and sea level rise
- Competing uses of the resource



Drivers such as ...

- Political leadership
- Budget constraints
- Local perceptions
- Environmental community
- Business sensitivities, and more
- Should influence how any particular seaport defines its priorities.



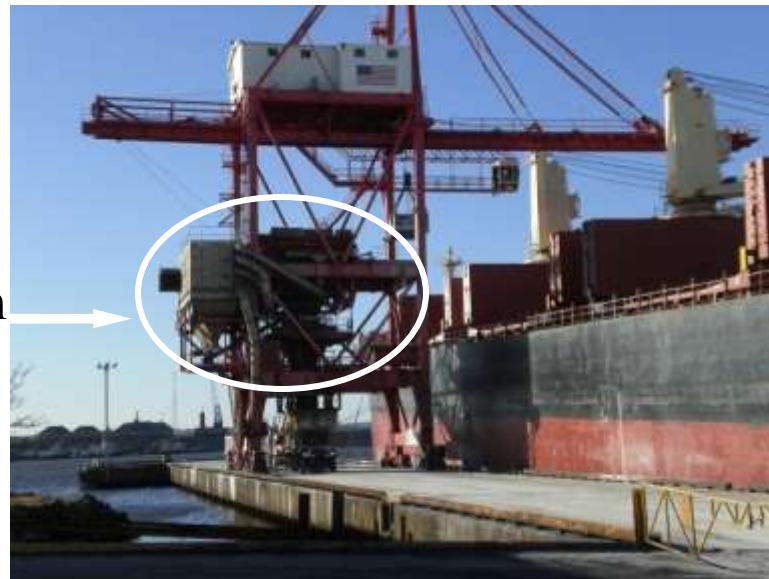
Green Port Initiatives



- Engaging the broader Port community through the Baltimore Port Alliance.
- Identified what we were collectively doing for the environment.
- Compiled a list; crafted a communications strategy.

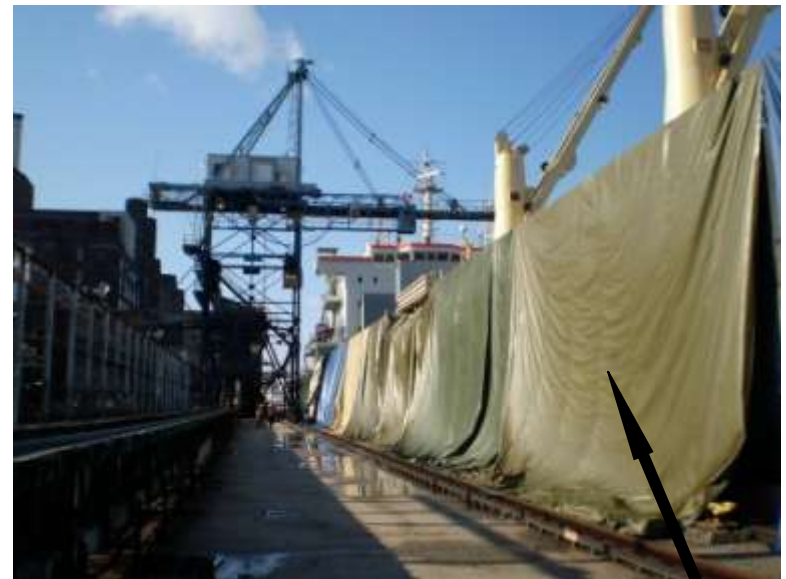


Reducing Dust Emissions



Dust vacuum system

Rukert Terminals



Domino Sugar

Ship-side tarping prevents raw sugar spillage



Reducing Air Emissions with Electrified Cranes



**Maryland Port
Administration**



Domino Sugar



Rukert Terminals



Zero Emission Yard Transportation



Wallenius Wilhelmsen Logistics



Reducing Emissions by Decreasing Truck Wait/Idle Times



Seagirt Marine Terminal Gate



**BALTERM
Trailer
Drop Lot**



Dundalk Marine Terminal Gate



OCR (Optical Character Recognition) system at Seagirt Marine Terminal.

- Reduced outbound truck processing time more than 50%
- Average truck transaction reduced from 2 minutes to 45 seconds
- Reduction of 13000 hours of idling time per year
- Annual Diesel Fuel Savings between 10400 – 13000 gallons
- Annual Emission savings of 2.06 Tons of Nox & .0559 Tons of PM



Reducing Emissions with Cleaner Cargo Handling Equipment



**Propane Fork Lifts
MD Port Administration**



**Electric Fork Lifts
C. Steinweg**



**Propane Fork Lifts
Rukert Marine Terminals**



Fork Lift Batteries



Reducing Emissions with Diesel Oxidation Catalysts



Yard Hustler

**Maryland Port
Administration**



Dump Truck



**Rubber Tire
Gantry Crane**



Yard Hustler



Stake Body Truck



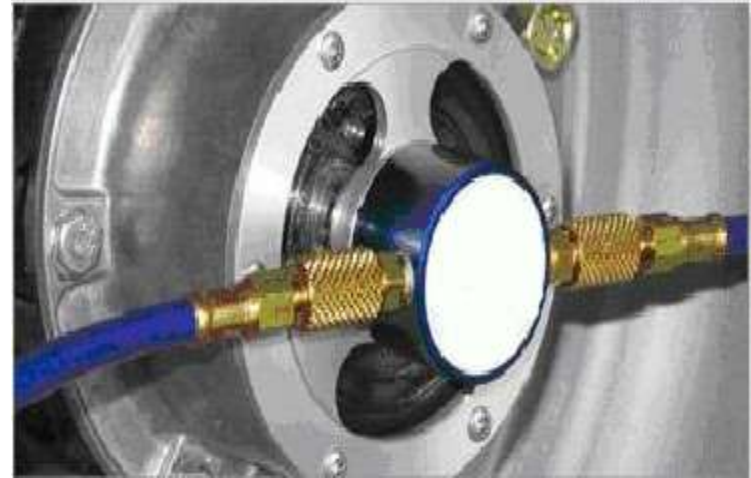
Maryland Motor Truck Association



In-transit fuel saving technologies



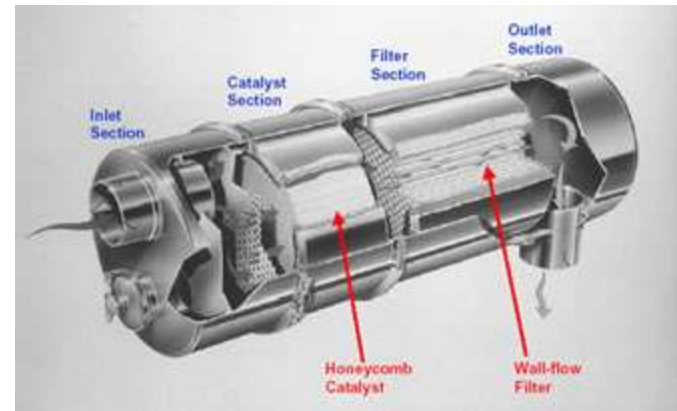
Trailer Aerodynamics



Automatic Tire Inflation



Single Wide Tires



Diesel Oxidation Catalyst



Maryland Motor Truck Association



“Green” Truck Initiatives



DID YOU KNOW?

TRUCKS IN THE PORT OF BALTIMORE

Daily truck trips to public and private terminals, 4700

Percent of freight delivered to/from the Port by truck, over 90%

Most inbound truck trips originate in Maryland

Most outbound truck trips are longer distance along the I 95 corridor (PA, VA, NY, NJ, NH)

Trucks are primarily moving to/from shipper locations, warehouse and factories

TRUCKING HAS A STAKE IN “GOING GREEN”

Idled trucks cost the trucking industry \$7.8 billion/243 million hours in 2004

For Maryland trucking, that’s about \$160 million per year

Unpredictability of pickup or delivery can increase load cost by 50% - 250%

EXAMPLES OF “GREEN TRUCK” PRACTICES

Lightweight Equipment

New Equipment – eg. 3 Year Cycle

Speed Restrictions:

- National speed limit of 65 mph
- Speed Governors

Control Idle Time:

- Automatic Shutdown
- Better Routing Of Lanes

Eliminate Empty Miles

EPA’s Smartway – The “Energy Star” brand for the trucking industry





Low-Sulfur Fuel Used in Harbor Vessels



Maryland Pilots



McAllister Towing



Moran Towing



Vane Brothers



Low-Sulfur Fuel Used in Harbor Vessels



US Coast Guard



Dann Marine



Baltimore City Fire Department



Harbor Vessels

Environmental Best Practices



Cold Ironing – vessels are connected to shore power while at dock

McAllister Towing and Moran Towing



Harbor Vessels

Environmental Best Practices



McAllister Towing

**Eco-Tips injectors –
reduces fuel
consumption by 3%,
reduces smoke
emissions by 75%, and
reduces particulate
matter by 44%**



Reducing Emissions with Tier III Engines



Ports America Yard Hustlers



Reducing Emissions through Creative Technologies



**Wallenius Wilhelmsen Logistics
Rail King**



Severstal Sparrows Point

Reducing Emissions through Energy Efficiency Improvements



- Significant strides have been made through voluntary programs that improve energy efficiency and reduce greenhouse gas emissions
- Energy consumption has been reduced by 33% since 1990

Port of Baltimore's Voluntary Diesel Emission Reduction Program



- EPA Awarded \$3.5 Million to the Port of Baltimore under ARRA.
- Eligible equipment for application include
 - Harbor Craft
 - Locomotives
 - Dray-trucks
 - Cargo Handling Equipment
- Total lifetime emission reduction for NOx, PM, HC and CO is estimated at 1,515 tons.





Controlling Nutrient/Pollutant Runoff with Sweepers



Rukert Terminals



MD Port Administration



Wallenius Wilhelmsen Logistics



C. Steinweg



Stormwater Management

Directing and Filtering Roof Runoff



C. Steinweg



C. Steinweg



Stormwater management pond



Severstal Sparrows Point

Water Supply and Wastewater Treatment



- Humphreys Creek Wastewater Treatment Facility – centrally located to treat steel mill wastewater utilizing state-of-the-art drinking water treatment technology
- Stormwater from Edgemere and facility wastewater are treated



Harbor Vessels Propulsion Efficiencies = Fuel Savings



MD Pilot's Launch



**McAllister
Z-Drive/ASD**



**Moran
Z-Drive/ASD**



**MD Pilots
High Efficiency Propellers**



**Moran
Kort Nozzle**



Best Environmental Practices at Vehicle Processing Center Carwash Facilities



Wallenius Wilhelmsen Logistics



Wallenius Wilhelmsen Logistics

**Recycled
Wash Water
Tanks**



AMPORTS



AMPORTS



Recycling



**Wallenius Wilhelmsen Logistics
Paper Recycling**



**Wallenius Wilhelmsen Logistics
Metal Recycling**



**Wallenius Wilhelmsen Logistics
Cardboard bailing**



**McAllister Towing
Paper/can Recycling**



Recycling



**C. Steinweg
Recycled Cocoa Bean Bags**



**C. Steinweg
Recycled Cocoa Bean Bags Bailer**



**AMPORTS
Metal Recycling**



**AMPORTS
Oil/Antifreeze Recycling**



Severstal Sparrows Point Steel Recycling



- Scrap metal is used as a raw material feedstock in the manufacturing process, significantly reducing and even avoiding greenhouse gas emissions
- Steel produced at Severstal Sparrows Point consists of roughly 30% recycled steel scrap generated on-site and recovered from the local area

Maryland Port Administration Baltimore City School Greening Initiative



Schoolyard Greening at Franklin Square Elementary



Schoolyard before asphalt removal



Green schoolyard with newly planted trees and garden



Volunteers from the Home Depot Corporation working in the Franklin Square Community



Maryland Port Administration assists with initiatives at schools



Creating Terrestrial Habitat



Hart/Miller Island



Hart/Miller Island



Poplar Island



Poplar Island



**Ft. McHenry
Wetlands Restoration**



Creating Aquatic Habitat



**Poplar
Island
Restoration**





Creating Wetland Habitat



**Hart/Miller Island
South cell**



Swan Creek



Poplar Island



Swan Creek



**Hart/Miller Island
South cell**



**Ft. McHenry
Tidal Wetlands**



Above-ground Storage Tanks



Wallenius Wilhelmsen Logistics



Wallenius Wilhelmsen Logistics



Ports America



AMPORTS



EPA Compliance Assistance Workshop Series



BPA Environmental Committee Stream Clean Up





BPA Environmental Committee Community Clean Up





Education and Community Outreach Maritime Industries Academy Baltimore City High School

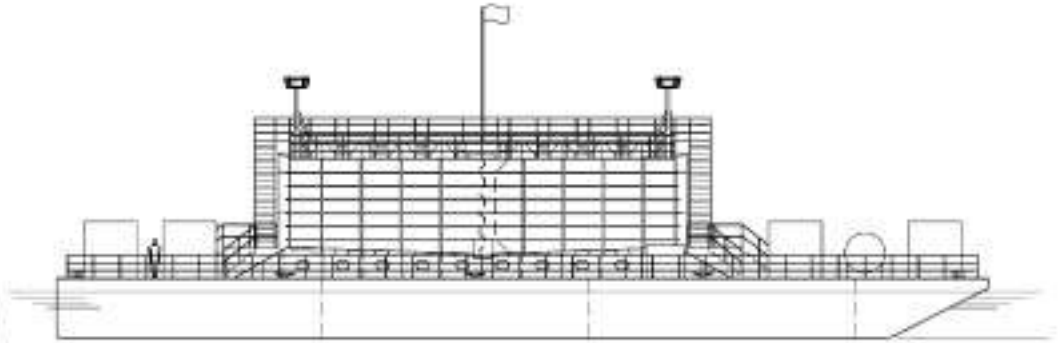




Education and Community Outreach



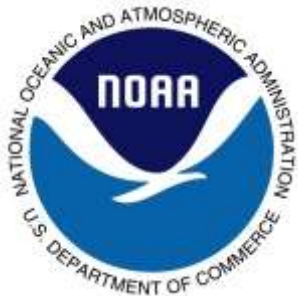
Ballast Water Treatment Testing



Maritime Environmental Resource Center



www.maritime-enviro.org



MERC Structure and Function

Focus

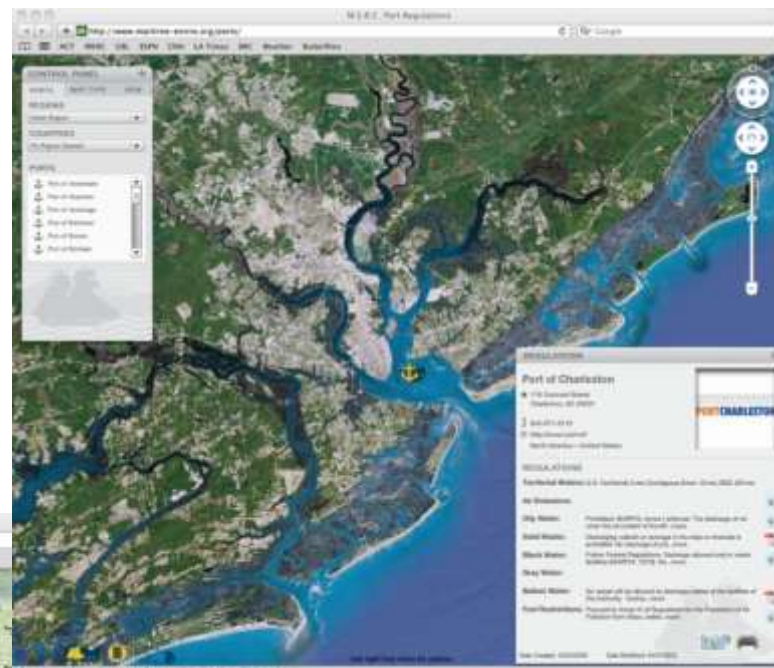
- **Mechanical and biological evaluations of ballast water treatment systems – laboratory, land-base and shipboard**
- **Economic assessments of ballast water regulations and management approaches**
- **Evaluations and supporting the development of other green ship technologies (e.g., ship biofouling and air emissions)**

Partners



MERC Port Discharge Database

- A resource for vessel operators, crew, and ports
- Up-to-date, searchable and map-based regulatory information
- Prevent unnecessary/unintentional infractions and environmental degradation



- Air Emissions
- Oily Water
- Solid Waste
- Black Water
- Grey Water
- Ballast water
- Fuel Restrictions



INSIDE: A Dredging Triumph | UPM's Paper Route | PWS's Innovative Design | Trucking Resources

The Helen Delich Bentley Port of Baltimore

MARCH 2016



Dredging Channels



Planting at Masonville



Oyster Replenishment



Wildlife Habitat



Clean Diesel Technologies



Wastewater Assessment

ENVIRONMENTAL ACHIEVEMENTS

The potential conflict among Port interests



- A cooler economy / and our resulting focus on the bottom line...

VS

- Meeting expectations of external stakeholders about environmental performance.

How are we measured?

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



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 - **Tonnage and Jobs**





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Those who allow or deny us a “social license to operate”

- Tonnage and Jobs



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Those who allow or deny us a “social license to operate”

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



Conclusion

- External stakeholders always matter.
- What we may consider mis-information and rhetoric.....they may consider the reality of our industry.
- Economic benefit, jobs, enhancements will never trump protection of human health and the natural environment.



Conclusion

- Not succeeding is not an option.
- No matter how well we think we plan and execute, our success may ultimately be measured by how well we engage external stakeholders – as our partners.
- If we achieve that, we have hopefully addressed the underlying issues, and empowered communities in the process.



The Sustainable Port

July 21, 2009

duration: 18:55

DVD

