AAPA American Association of Port Authorities

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

PORT OF BALTIMORE 1706

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

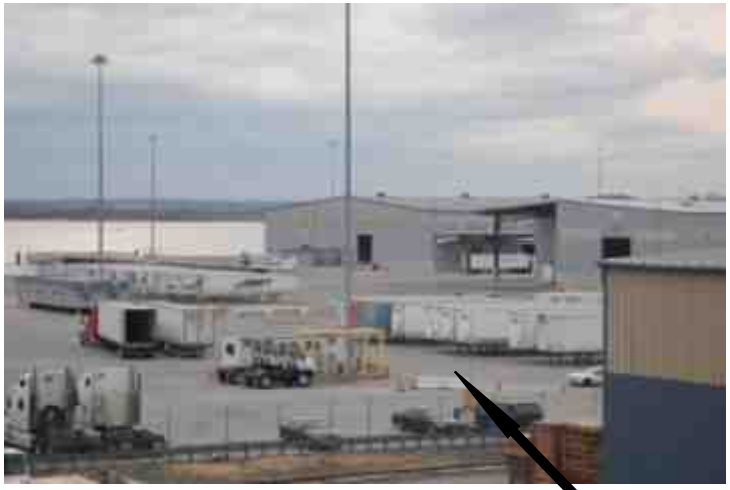
Domino Sugar

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

PORTS AMERICA
GLOBAL REACH. LOCAL RESULTS.

PORT OF BALTIMORE 1706

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

Maryland Port Administration

Yard Hustler

Rubber Tire Gantry Crane

Dump Truck

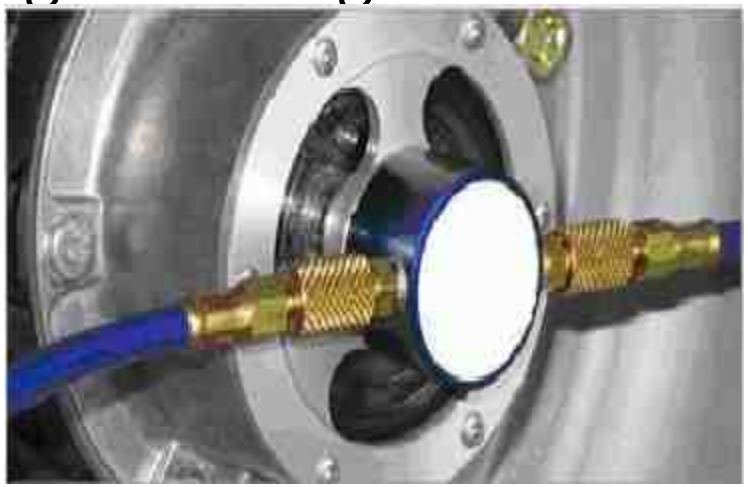
Yard Hustler

Stake Body Truck

Maryland Motor Truck Association

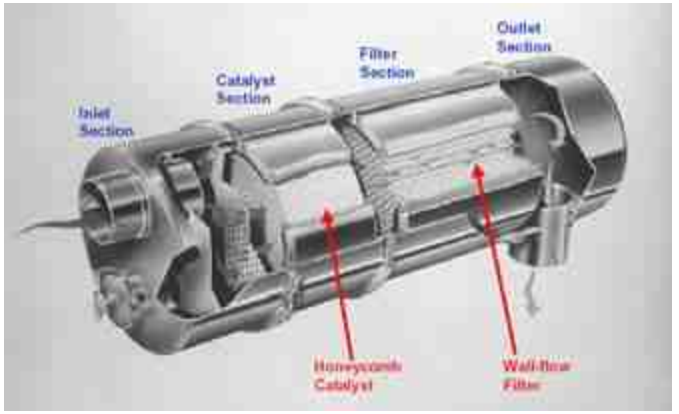
In-transit fuel saving technologies

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

McAllister Towing and Moran Towing

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

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

Maryland Port Administration

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

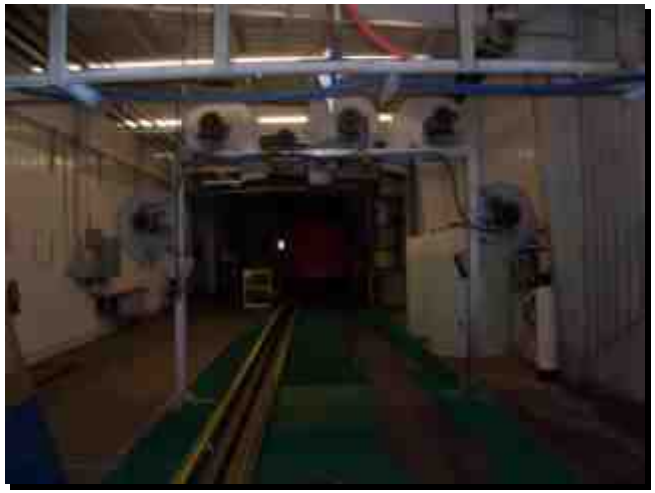
Best Environmental Practices at Vehicle Processing Center

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

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



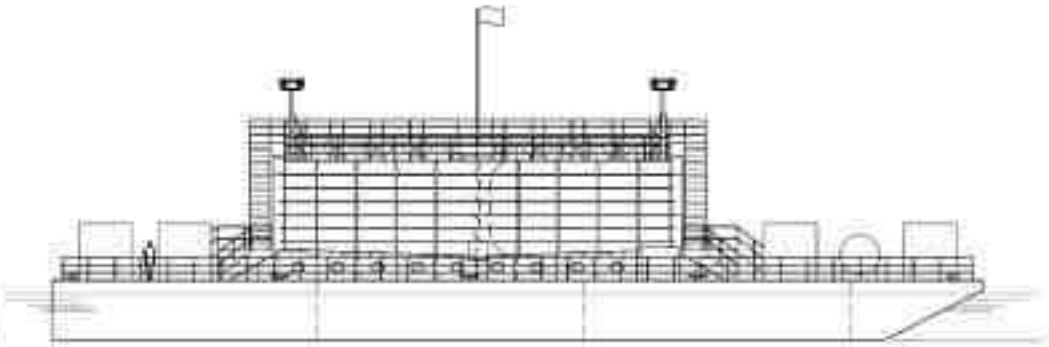









Ballast Water Treatment Testing



Maritime Environmental Resource Center

www.maritime-enviro.org

MERC Structure and Function

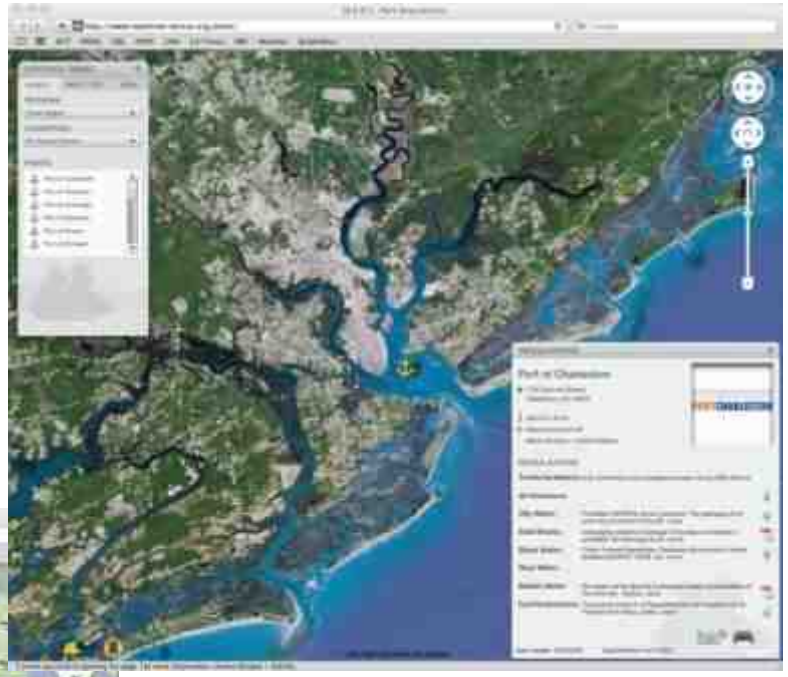
Focus

- **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**

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

The Helen Delich Bentley

Port of Baltimore


Dredging Channels


Planting at Masonville


Oyster Replenishment


Wildlife Habitat


Clean Diesel Technologies


Stormwater 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

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**

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 allow or deny us a “social license to operate”

  - 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 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.

July 21, 2009

duration: 18:55

DVD