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

BALTERM Trailer Drop Lot

Seagirt Marine Terminal Gate

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

Maryland Port Administration

Yard Hustler

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

McAllister Towing and Moran 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

Wallenius Wilhelmsen Logistics

MD Port Administration

C. Steinweg
Stormwater Management
Directing and Filtering Roof Runoff

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

Moran Z-Drive/ASD

McAllister Z-Drive/ASD

MD Pilots High Efficiency Propellers

Moran Kort Nozzle
Best Environmental Practices at Vehicle Processing Center Carwash Facilities
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
• 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 assists with initiatives at schools.
Creating Terrestrial Habitat

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

Ports America

AMPORTS
EPA Compliance Assistance Workshop Series
BPA Environmental Committee
Stream Clean Up
BPA Environmental Committee
Community Clean Up

[Image of group photo]

[Image of construction equipment]
Education and Community Outreach
Maritime Industries Academy
Baltimore City High School
Education and Community Outreach
Ballast Water Treatment Testing
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
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**
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  – Tonnage and Jobs
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  - Regulatory Community
    - MPA Customers and Tenants
    - Private Port Community
  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.