Why Focus on Ports?

• Compelling public health need
  – Concentrated emissions
  – Urban high population density settings that are often also EJ areas
  – Located in virtually every state that borders ocean, lake or major internal seaway

• Freight Movement Emissions are increasing nationally
  – A small annual percent growth translates into significant new port activity

• Increasing community pressure/interest
  – Potential for conflict, long litigation
  – Communities want to be more involved in the planning & decision process

• Need for better quantification/inventories for decision-making

• Need for dedicated sustainable funding

June 8, 2016 U.S. Environmental Protection Agency
Global freight will more than quadruple by 2050
(by a factor of 4.3)
EPA’s Ports Initiative Background

- **National Conversation With Port Stakeholders**
  - Webinar Listening Sessions
    - Sept 24, 2013 - Promoting Port Stakeholder Success
    - Jan 14, 2014 - Goods Movement and Ports: Collaborative Solutions & Community Impacts
    - Mar 4, 2014 - Advancing Sustainable Solutions

- Port Stakeholders Summit—April 8, 2014

- Formed Ports Initiative Workgroup under Mobile Source FACA (MSTRS/CAAAC) – May 2014
MSTRS Ports Initiative Workgroup Charge

• EPA asked MSTRS for recommendations on:
  – Development of EPA-led voluntary environmental port initiative
  – How to effectively measure AQ and GHG performance of ports

• The workgroup should consider:
  – Past MSTRS and other recommendations
  – Existing port environmental improvement programs
  – Ports in the context of the broader transportation supply chain
  – Information from EPA’s Assessments as available
MSTRS Port Workgroup Status

- Workgroup includes ports and port associations, shipping lines, environmental organizations, manufacturers, retailers, transportation providers and state government
- Workgroup is in the process of finalizing recommendations
  - Presentation to MSTRS on June 16
  - Presentation to CAAAC at Fall meeting
- Many areas of consensus, but perspectives differ on:
  - What good looks like (inventory types, community engagement practices, appropriate emissions reductions goals, measures for different ports)
  - How voluntary program can ensure accountability, continued progress at ports
Supportive Materials

- Community-Port Capacity Building Tools
- Macro Assessment
- Port-Specific Assessment with Port Everglades
- Diesel Emission Reduction Program
- Collaboration with Regions and other EPA offices
- Federal Coordination through Committee on Marine Transportation Systems
Near-port Community Capacity Building

- Pilot tools/resource materials promoting port/community decision-making
  - Ports Primer for Communities
    - Characterizes port sector – overview of planning & operations, environmental & community health impacts
  - Community Action Roadmap
    - Companion for Ports Primer – Step by Step guide preparing community to engage with port and local/regional stakeholders
  - Environmental Justice Primer for Ports
- Post for Public Comment and Solicit Interest for Pilot Locations to Test Tools – June 2016
- Announce Pilots - Fall 2016
Macro Port Assessment

• Purpose:
  – **Update our understanding** of future national port-related emissions for criteria, air toxics, and climate pollutants
  – **Assess the effectiveness of** technological and operational emission reduction **strategies** across ports with different emissions profiles
  – **Inform national policy** discussion for port initiatives

• Status:
  – Draft final report under development
  – Target release in **summer 2016**
Macro Design

- Estimate 2011 baseline emissions for PM$_{2.5}$, NOx, VOC, SO$_2$, CO$_2$, BC, and air toxics

- Estimate business-as-usual (BAU) inventories for 2020, 2030, and 2050 (CO$_2$ only)

- Subtract emission reductions from BAU inventories under 2 scenarios:
  - **Scenario A**: Enhanced fleet turnover with existing technologies and operational improvements
  - **Scenario B**: More aggressive suite of strategies than Scenario A
<table>
<thead>
<tr>
<th>Sector</th>
<th>Strategy</th>
<th>Specific Equipment</th>
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</thead>
<tbody>
<tr>
<td>Drayage Trucks</td>
<td>Enhanced Fleet Turnover</td>
<td>On-road Trucks</td>
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<td>Operational Improvements</td>
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<td>Rail</td>
<td>Enhanced Fleet Turnover</td>
<td>Line Haulers, Switchers</td>
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<td>Operational Improvements</td>
<td>Line Haulers</td>
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<td>Cargo Handling Equipment</td>
<td>Enhanced Fleet Turnover</td>
<td>Yard Trucks, RTG Cranes, Container Handlers</td>
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<td>Harbor Craft</td>
<td>Enhanced Fleet Turnover</td>
<td>Tugs, Ferries</td>
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<tr>
<td>Sector</td>
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<td>OGV</td>
<td>Fuel Changes (lower sulfur levels, LNG)</td>
<td>Propulsion &amp; Auxiliary Engines</td>
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<td>Shore Power</td>
<td>Frequent Callers Only (&gt;5 calls for passenger, &gt;6 calls for container &amp; reefer)</td>
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<td></td>
<td>Stack Bonnets</td>
<td>Non-frequent Callers Only (container &amp; tanker)</td>
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<td>Reduced Hotelling</td>
<td>Container</td>
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</table>
Drayage Strategy Results

$NO_X$ Emissions (tons/year)

- BAU
- Scenario A
- Scenario B

U.S. Environmental Protection Agency
Background on Port-specific Assessment

- EPA’s Office of Transportation and Air Quality issued a call for interest:

  **U.S. EPA is Seeking to Partner with a Seaport to Assess Port-Related Emissions Reduction Strategies**

  The objective of this opportunity is to refine and demonstrate quantitative methodologies that ports, their stakeholders, researchers and others could use to assess the potential for future criteria pollutant and greenhouse gas (GHG) emissions reductions under various technology and operational implementation scenarios.

- Port Everglades submitted a letter to EPA and was selected in 2014
Overview of Assessment

• EPA and Port Everglades will work together to develop:
  – Future year emission inventories for 2020, 2030, and 2050
  – Emission reduction strategy scenarios for:
    • Trucks
    • Locomotives
    • Cargo handling equipment
    • Harbor craft
    • Ocean-going vessels
  – Emissions analysis of road, rail, and/or marine corridors

• This work will also inform future data and methods, lessons learned, and practical examples to share with other ports and stakeholders to support sustainable development
$80M in DERA Grant Funds Awarded to Ports

- $80 million in grants awarded to projects focused entirely on ports
  - Includes $9.2M awarded for 2013 & 2014 DERA Port RFPs
- Another $68M in grants awarded to projects that involve ports
Examples of DERA Funds at Ports

- 2013: $750k awarded to Virginia Port Authority to replace Tier 1 shuttle carriers with Tier 4 hybrids

- 2014: $550k awarded to MARAMA to assist in replacement of 19 drayage trucks in DE and VA

- 2015: $1M awarded to PANYNJ to assist in replacement of 26 drayage trucks serving the Port of New York and New Jersey
Transportation in U.S.:
• Over 1/4 total GHG emissions;
• About 2/3 petroleum-based fuel use.

In Transport Sector:
• Freight accounts for over 25% of all fuel consumed and GHGs emitted.
• Freight is fastest growing source of transport GHGs.

2014 Data - Inventory of U.S. Greenhouse Gas Emissions and Sinks (EPA 2016)
Changing Needs of Industry

- **Customer and Consumer awareness**
  - Demanding corporate citizenship and accountability

- **Investor, Lender and Insurer requirements**
  - Assessing climate risk and business opportunities

- **Rising and volatile energy prices**
  - Fuel and driver wages are largest cost centers for truck carriers: 64% of operating costs (2013)

- **Globalization of supply chains**
  - Increasing global opportunities and global competition
  - Other countries’ carbon reporting requirements

ATRI: An Analysis of the Operational Costs of Trucking: A 2012 Update
SmartWay Snapshot

• Since 2004, SmartWay has grown to about 3,000 partners with broad freight industry support in U.S. and Canada
  ▪ Top 100 U.S. truck carriers
  ▪ All Class 1 rail lines
  ▪ Fortune 500 shippers from key economic sectors
  ▪ Major logistics firms

• Since 2004, SmartWay Partners saved:
  ▪ 72.8 million metric tons of CO₂
  ▪ 1,458,000 tons NOx and 59,000 tons PM
  ▪ 170.3 million barrels of oil and 7.2 billion gallons of fuel
  ▪ $24.9 billion dollars in fuel costs

• Equivalent to eliminating annual energy use in over 6 million homes
Partner Spotlights

SmartWay Helps Tyson Foods Drive Out Miles, Tackle Greenhouse Gas Emissions

Company Message

"We're serious about our responsibility to the environment, so we joined the SmartWay Transport Partnership. The framework enabled us to evaluate, measure and reduce the environmental impact of our transportation operations in a more comprehensive and specific way. SmartWay has helped us reduce fuel usage and emissions, and improve our operational efficiency." - Kevin J. Iggi, SVP and Chief E

Why Tyson Foods joined SmartWay

Tyson Foods has been a long-time supporter of SmartWay's transportation sustainability efforts. In early 2003, the company was one of the first to adopt the SmartWay program and it has continued to use it to accurately measure and improve its fuel consumption.

Partner Profile: Penske Logistics

The SmartWay to Logistics Management

Company Message

"Penske Logistics is committed to improving our performance and ensuring that our customers achieve their sustainability goals. Our commitment to SmartWay is central to our approach to logistics and transportation. We believe that it is not only the best practice, but it is also the right thing to do." - Rod Seabrook, President, Penske Logistics

Why Penske Logistics joined SmartWay

Penske Logistics always strives to be a leader in sustainability. By joining SmartWay, we have the opportunity to further enhance our environmental performance and contribute to the broader goal of reducing greenhouse gas emissions.

Stanley Black & Decker Uses SmartWay Tools to Reduce Freight Footprint

Company Message

"Our success in reducing energy demand and greenhouse gas emissions associated with our SmartWay efforts has allowed us to apply the same productivity gains to reducing Scope 3 emissions from vehicles that transport our finished goods and our employees. Our SmartWay Transport Partnership is the best thing we've done in terms of reducing our carbon footprint." - Debora Paterson, Vice President, Environment, Health, and Safety, Stanley Black & Decker

Why Stanley Black & Decker Joined SmartWay

"The opportunity to reduce our environmental impact is a priority for us. We are committed to making SmartWay part of our overall sustainability strategy. By joining, we can help reduce our carbon footprint and improve our operational efficiency." - Debora Paterson, Vice President, Environment, Health, and Safety, Stanley Black & Decker
For more information:

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