OUTLINE

- Recap from AAPA Board
  - MOU
  - Membership

- GHG & Air Pollutants Workgroup

- GreenTech
  June 5 – 7, 2019
  Cleveland, Ohio
Five years ago we agreed to:

- Advance the environmental sustainability of port and terminal operators
- Exchange memberships
- Establish a productive working relationship
- AAPA encourages its members’ participation in the Green Marine environmental program
MoU’s impact

Port participation in the Green Marine program:

Fall 2013: 21 ports

March 2019: 44 ports

Canadian ports
U.S. ports
PORTS

- Alabama State Port Authority
- Albany Port District Commission
- Bécancour Waterfront Industrial Park
- Belledune Port Authority
- Canaveral Port Authority
- Duluth Seaway Port Authority
- Greater Victoria Harbour Authority
- Halifax Port Authority
- Hamilton Port Authority
- Montréal Port Authority
- Nanaimo Port Authority
- Northwest Seaport Alliance
- Oshawa Port Authority
- Port Alberni Port Authority
- Port Charlottetown
- Port Everglades
- Port Milwaukee
- Port of Anacortes
- Port of Cleveland
- Port of Corpus Christi
- Port of Everett
- Port of Gulfport (MSPA)
- Port of Hueneme
- Ports of Indiana – Burns Harbor, Jeffersonville, and Mount Vernon
- Port of Monroe
- Port of New Orleans
- Port of Olympia
- Port of San Diego
- Port of Seattle
- Port of Stockton
- Port of Valleyfield
- Prince Rupert Port Authority
- Québec Port Authority
- Saguenay Port Authority
- Saint John Port Authority, NB
- Sept-Îles Port Authority
- St. John’s Port Authority, NL
- Thunder Bay Port Authority
- Toronto Port Authority
- Trois-Rivières Port Authority
- Vancouver Fraser Port Authority
- Windsor Port Authority
PROGRAM SCOPE

PERFORMANCE INDICATORS

- Shipowners
- Ports and seaway
- Terminals and shipyards

- Aquatic invasive species
- Cargo residues
- Community impacts
- Dry bulk handling and storage
- Environmental leadership
- Garbage and waste management
- Greenhouse gas emissions
- Oily water
- NOx
- SOx • PM
- Pollutant air emissions NOx
- Pollutant air emissions SOx & PM
- Prevention of spills and leakages
- Underwater noise
PERFORMANCE INDICATOR

1. Monitoring of regulations
2. Best practices
3. Integrated management systems & quantified impacts
4. Advanced technologies and/or reduction targets
5. Excellence and leadership
Greenhouse Gas & Air Pollutants Workgroup

Mandate

Green Marine’s strategic plan and 3-year action plan

– Dates back to 2014
– From the Board of Directors and the three advisory committees

Incorporate quantitative measures
Greenhouse Gas & Air Pollutants Workgroup Composition

Ports
- New Orleans
- Northwest Seaport Alliance
- Prince Rupert
- Vancouver, BC
- Quebec

Terminals
- Transmountain (Westridge)
- Ceres

Associations
- AAPA
- Assoc of Canadian PAs (ACPA)
- Environmental Defense Fund (EDF)
- Environment Canada
- SNC-Lavalin
- Climate Smart Business
- US EPA - special observer
Greenhouse Gas & Air Pollutants Workgroup Background

- Workgroup was formed in 2016
- **Phase 1 (2017 program):** Include port-wide emissions inventory in GHG performance indicator / Review measures at level 2
- **Phase 2 (2018+ program):** Work towards emissions reduction targets and quantitative metrics
Greenhouse Gas & Air Pollutants Workgroup

Takeaways from Phase 2 meetings

How to incorporate targets and metrics for landside participants?

April, 2017
  • Flexibility
  • Control versus Influence

March, 2017) not yet agreement on long term goal of common target. Proceed with information gathering. Look for whether there is any comparability or shared metrics across participants.

March, 2018) review of data/info request letter.

Nov, 2018) 144 Survey Monkey invites went out
Survey Results – Responses, Emissions, Metrics

• Q2) 54 participants responded (57% response rate)
  o Split equally between ports and terminals, plus the seaway and shipyard
• Q4) 34 track GHG
• Q7) 23 track an efficiency metric

“emissions / cargo”

• Emissions: CO2e, GHG, total
• Cargo: tonne, tons, metric tons, TEU, product, throughput, shipped, handled

Also by equipment:
• Type
• hours of operation,
• # km driven on electric/hybrid vehicles
• Total Terminal Moves
Survey Results - Targets

• Q2) 54 participants responded (57% response rate)
• Q4) 34 track GHG
• Q7) 23 track an efficiency metric “emissions / cargo”
• Q8) 12 have set a quantitative target or targets
• Q9) What are your quantitative targets?
  o Both efficiency (intensity) and absolute
  o Mostly only GHG
  o Some have both near and far term targets
  o Consistently stated as a %age reduction from a Baseline to a Target year
  o Range of Annualized average targets: 0.7~11.7%
  o Most common (8): ~1%
    o Split equally between both ports and terminals
Survey Results - Measures

Q11) Please select projects/programs implemented

<table>
<thead>
<tr>
<th>Project/Program</th>
<th>Number of Participants selected &quot;Yes&quot;</th>
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<tbody>
<tr>
<td>Financial incentive program</td>
<td>2</td>
</tr>
<tr>
<td>Recognition program</td>
<td>6</td>
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<tr>
<td>Truck congestion relief</td>
<td>8</td>
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<tr>
<td>Voluntary Speed Reduction</td>
<td>8</td>
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<tr>
<td>Hybrid or Electrified equipment</td>
<td>9</td>
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<tr>
<td>Shore power</td>
<td>8</td>
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<tr>
<td>Other</td>
<td>20</td>
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</table>
What’s Next?
2019 – 2021 Action Plan

Maintenance
• Invasive Species
• SOx&PM
• Greenhouse Gas
• Spill Prevention (stormwater)

Growth
• Ship Recycling
• Community Relations
• Aquatic Ecosystems
12th ANNUAL CONFERENCE

GreenTech 2019:
Cleveland, Ohio
June 5 – 7, 2019

2008 → Montreal
2009 → Toronto
2010 → Montreal
2011 → Chicago
2012 → Quebec city
2013 → Vancouver
2014 → Saint-John
2015 → Seattle
2016 → Quebec city
2017 → Fort Lauderdale
2018 → Vancouver
Program almost completed: 9 sessions, 30+ speakers confirmed
Certification ceremony at the Rock & Roll Hall of Fame
Lake Erie cruise tour on the Nautica Queen
Key sessions themes:
  • GHGs
  • Community building
  • Digitalization and big data
  • Blue economy
  • Electrification
  • Clean waterways
  • Human factor in sustainability
8 exhibitors so far
Thank you SPONSORS!
Call for posters: deadline April 15
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GREEN MARINE IS...

A voluntary certification program to reduce environmental footprint of marine operations by

- exceeding regulatory compliance
- promoting a culture of continuous improvement

A benchmarking tool to measure performance
A partnership initiative involving stakeholders