

An aerial photograph of the Seattle skyline and waterfront. The city's skyscrapers are visible in the background, with snow-capped mountains behind them. The Space Needle is prominent on the left. In the foreground, a large container ship with a red hull and a black superstructure is sailing on the water, leaving a white wake. The sky is clear and blue.

# Port of Seattle: The Green Gateway

**Sustainable Shipping 2010**

**Sarah Flagg  
Seaport Air Quality Program Manager  
Port of Seattle**

# Sea, Land, and Sky



# Striking the Balance

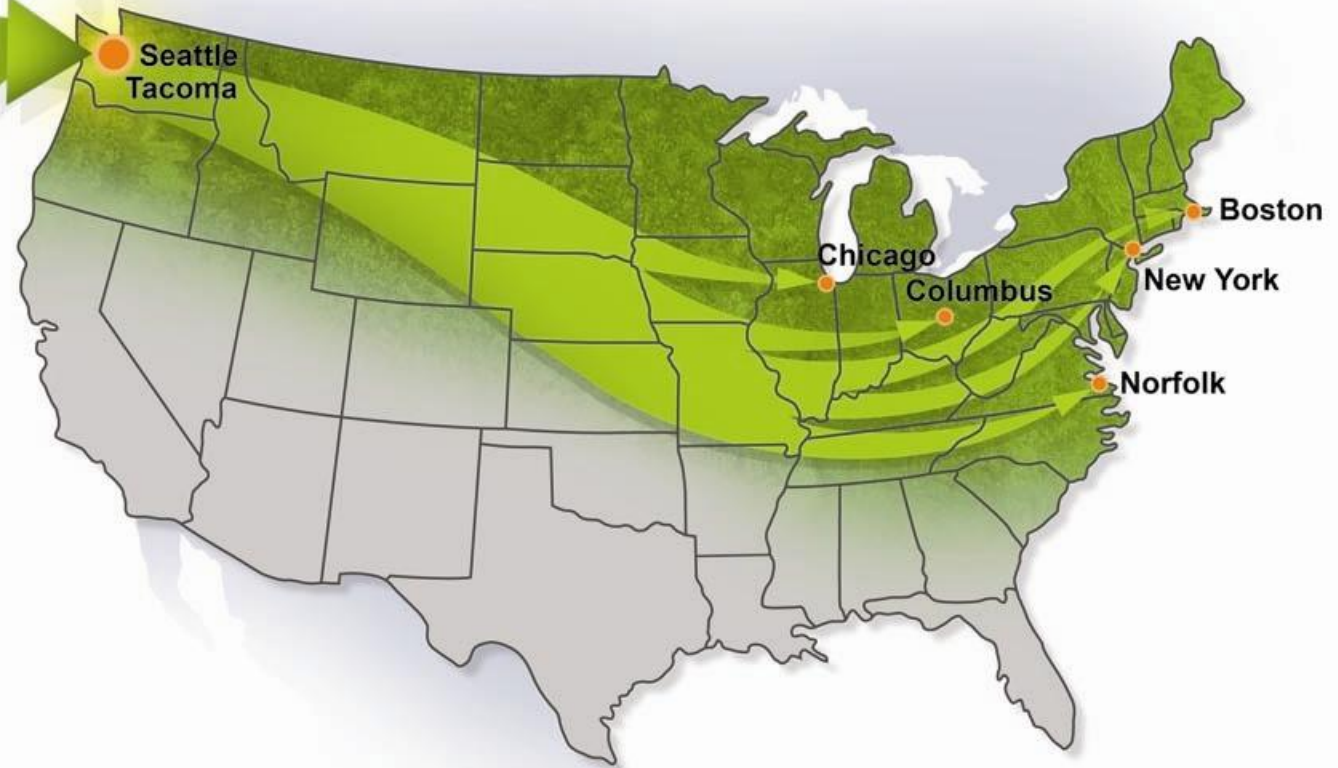
## Environment and Port Competitiveness

- CEO Tay Yoshitani's goal to be the "cleanest, greenest and most energy efficient port in the U.S."
- Legacy of industrial use
- Importance of goods movement
- Impacts on public health and the environment
- Seeking to create a level playing field
- Environmental stewardship as the Port's competitive edge

# THE GREEN GATEWAY

**Puget Sound**

Asia



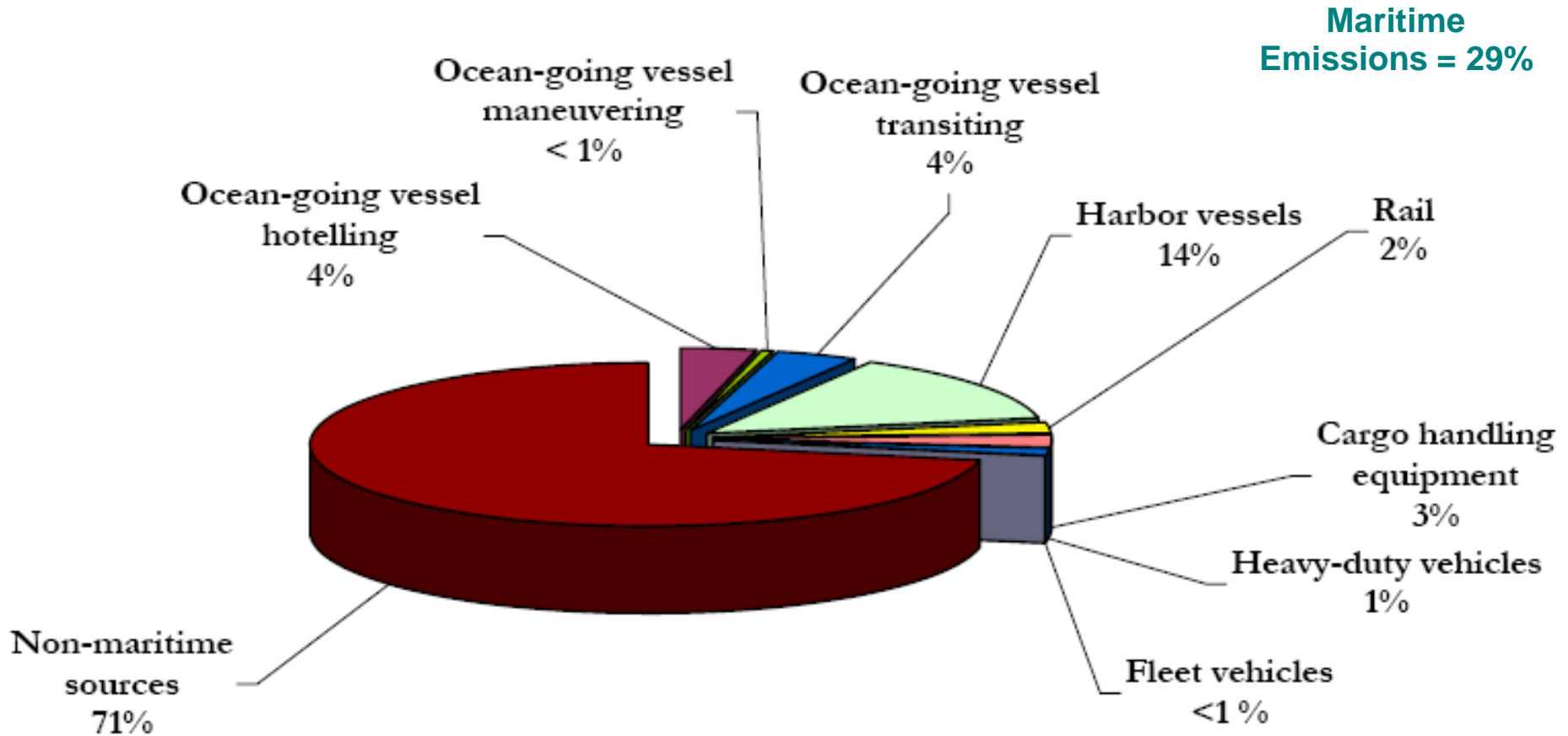


- Collaborative approach
- Pollutants of concern:
  - Diesel particulate matter
  - Greenhouse gases
- Reduce impacts on public health and environment while maintaining a vibrant seaport

# Puget Sound Maritime Air Emissions Inventory

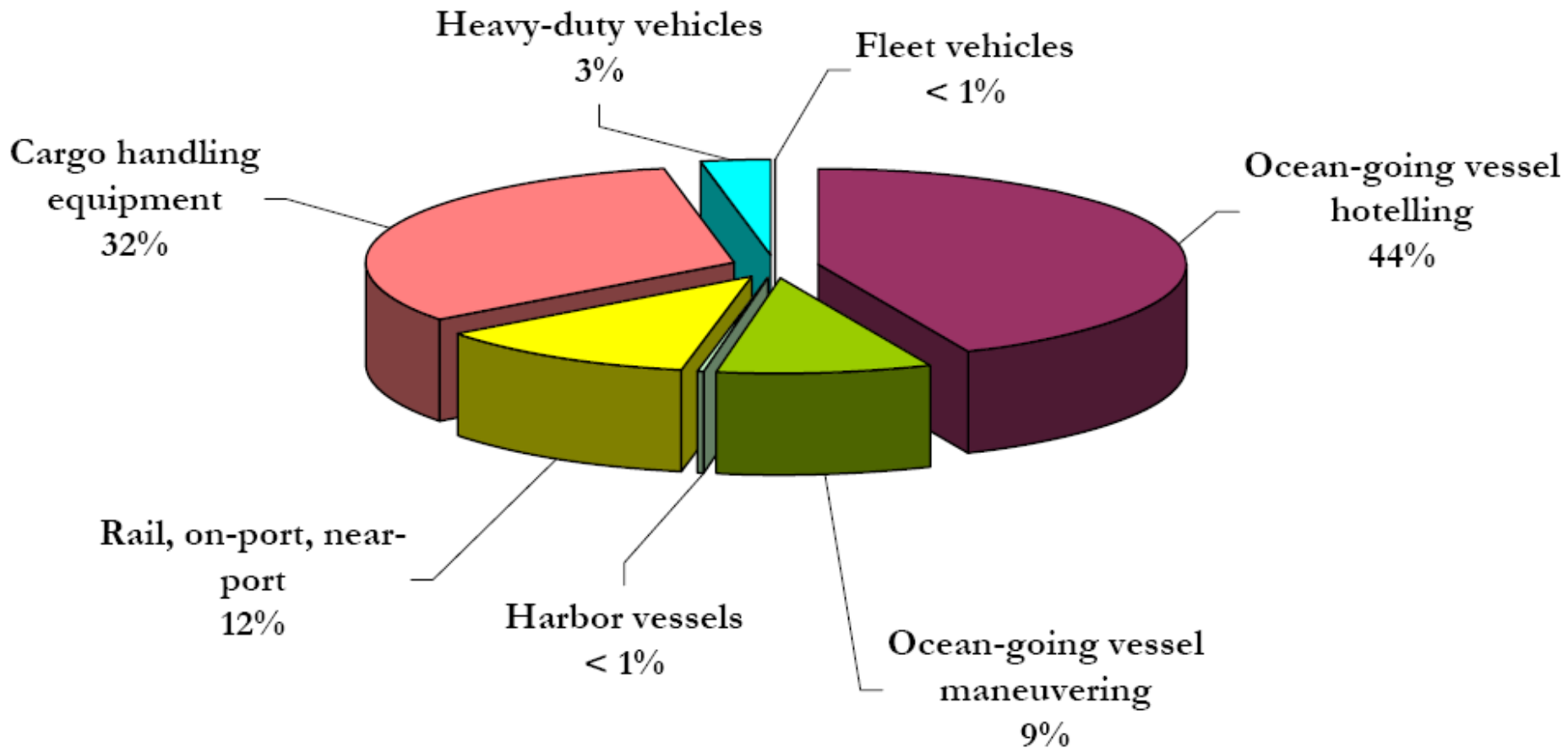
- 2005 activity-based inventory
- First to include greenhouse gases
- Coordinated with similar effort in Canada

# Diesel Particulate Matter Puget Sound Clean Air Agency Region



Source: 2005 Puget Sound Maritime Air Emissions Inventory

# Diesel Particulate Matter Port of Seattle Seaport



Source: 2005 Puget Sound Maritime Air Emissions Inventory





# Northwest Ports Clean Air Strategy

Port of Seattle  
Port of Tacoma  
Vancouver Port Authority

December 2007

# Port of Seattle



PORT METRO  
vancouver



Environment  
Canada

Environnement  
Canada

# Ocean-Going Vessels

- Shore power for Princess Cruises and Holland America Line vessels
- At-Berth Clean Fuels Vessel Incentive Program
  - \$2,250 incentive for use of 0.5% sulfur fuel in auxiliary engines
  - 11 Participating Lines
  - 2010: 329 vessels YTD
  - 2009: 236 vessels



# Cargo-Handling Equipment

- 68% of all CHE at have Level 1 or Level 2 exhaust retrofits
- 100% of CHE used ultra low sulfur diesel fuel and/or biodiesel blends



# Rail and Harbor Vessels



- Harbor Vessels
  - Focus on cleaner fuels and engines
- Rail:
  - Encourage SmartWay participation
  - BNSF North SIG Yard Electrification
  - Louis Dreyfus switcher engine anti-idling



# Clean Truck Program

- Mandatory
  - 1/1/2011 all trucks must have MY 1994 or newer engines
  - Lease amendments with MTOs
  - Drayage Truck Registry



- ScRAPs
  - \$5,000 incentive to scrap pre-1994 trucks
  - 217 trucks removed and recycled

# Goods Movement

- Carbon Footprint Study for the Asia to North America Intermodal Trade
  - Origin ports of Hong Kong, Shanghai, Singapore
  - U.S. gateway ports of Seattle, Oakland, Los Angeles/Long Beach, Houston, Savannah, Norfolk, New York/New Jersey
  - Destination Cities of Memphis, Columbus, Chicago
- Analysis determined tons carbon dioxide equivalent (CO<sub>2</sub>e) per TEU
- Independent review

# Challenges and Opportunities

- No one-size-fits-all solutions
- Funding shortfalls
- Inconsistent requirements and programs
- Differing stakeholder needs
- Implementation of the North American ECA
- Carbon regulations and energy conservation



# Port of Seattle

Where a Sustainable World is Headed

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