Port Air Quality Improvement Strategies

Rick Cameron
Director of Environmental Planning
What is the Clean Air Action Plan?

- Joint plan by POLA & POLB
- To significantly reduce air pollution from port-related mobile sources
- Developed in cooperation with USEPA, CARB, AQMD
Clean Air Action Plan Principles

- Minimize health risk
- Reduce “fair share” of air emissions
- Set consistent standards
- Allow port development to continue
POLB 2010 Diesel Particulate Matter Emissions

- Ships, 64%
- Harbor Craft, 13%
- Trucks, 8%
- Locomotives, 8%
- Terminal Equipment, 7%

POLB 2010 Diesel Particulate Matter Emissions
Clean Trucks Program

2012  - Deadline for port trucks to meet 2007 model year standards

100%  - Current percentage of trips made with “clean” trucks

90%   - Percentage of pollution reduced from trucks

2     - Number of years ahead of schedule
Vessel Speed Reduction

12 knots – Reducing speed to 12 knots on arrival and departure prevents significant pollution

90% - Goal for voluntary participation in the program to 20 or 40 nm

25% - Dockage discount for participation to 40 nm

96% - Current participation to 20 nm

83% - Current participation to 40 nm
At-Berth Emission Reduction

100% - Shore-power goal for container terminals, cruise ship terminals and selected crude terminals

2014 – Container berths to be equipped with shorepower

Seeking alternative control technologies
Cleaner Vessel Fuels

2008 - Port incentive to use of ≤0.2% sulfur fuels

2009 - Use of ≤0.5% sulfur fuels for all vessel engines within 24 nm

2014 - Use ≤0.1% sulfur fuel within 24 nm

2015 - Use ≤0.1% sulfur fuel within 200 nm

> 80% - Reduction in vessel particulate matter emissions
Cleaner Vessels

Encourage deployment of the newest, cleanest ships to our ports

Demonstrate, verify and deploy clean technologies on the existing vessel fleet
Cargo Handling Equipment

2007 - New purchases must meet cleaner standards

2010 – 2014 - Replacement requirements for existing equipment
Switcher Locomotives

2008 - PHL upgraded fleet to Tier 2 engines
2011 - Upgraded to Tier 3-Plus
95% - Reduction of DPM
72% - Reduction of NOx
Technology Advancement

2007 - Formalized program and Advisory Committee established

$3 million per year available for demonstration projects

28 projects, including zero emissions, hybrid, alternative fuel and retrofit technologies

2011 – Ports release “Roadmap to Zero Emissions”
Reduced Air Pollution (2005 to 2010)

Greenhouse Gas Emissions Down 18%

Nitrogen Oxides Down 46%  2023 Goals
Sulfur Oxides Down 73%  59%
Diesel Particulates Down 72%  93%
Reduce Cancer Risk by 85%

59%
93%
77%
How are CAAP Strategies Sustainable?

Environmental Responsibility:
• Reduced air pollution (habitat receptors)
• Reduced water pollution (fallout to surface water)

Social/Community Responsibility:
• Reduced air pollution (human receptors)
• Incentives for more on-rail cargo transport

Financial Responsibility:
• Grants and loans for clean trucks and technologies
• Low cost emission reduction alternatives (e.g., VSR)