



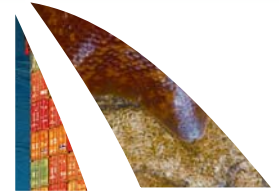
Port of Long Beach Green Port Environmental Policy and Air Quality Programs

Presentation by
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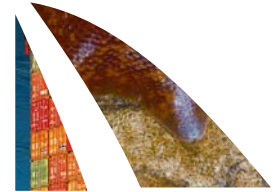
Framework for Board Environmental Policies

- Policies
- Goals
- Metrics
- Programs
- Incentives
- Legislative Proposals
- Periodic Reporting



Adopted Policies

- **Protect the Community From Harmful Effects of Port Operations**
- **Distinguish Port as Leader in Environmental Stewardship and Compliance**
- **Promote Sustainability**
- **Employ Best Available Technology to Minimize Environmental Impact**
- **Engage and Educate the Community**



Environmental Policies

- Protect the community from harmful side effects of Port operations
- Distinguish Port as leader in environmental stewardship and compliance
- Promote sustainability
- Employ best available technology to minimize environmental impacts
- Engage and educate the community



AIR



**Goal/Metric/
Programs**

WATER



**Goal/Metric/
Programs**

WILDLIFE



**Goal/Metric/
Programs**

SOIL/ SEDIMENT



**Goal/Metric/
Programs**

SUSTAINABILITY



**Goal/Metric/
Programs**

COMMUNITY ENGAGEMENT



**Goal/Metric/
Programs**

AIR

Goal: Reduce Air Emissions From Port Activities

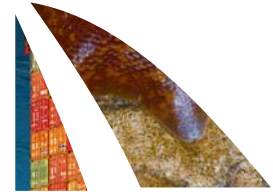
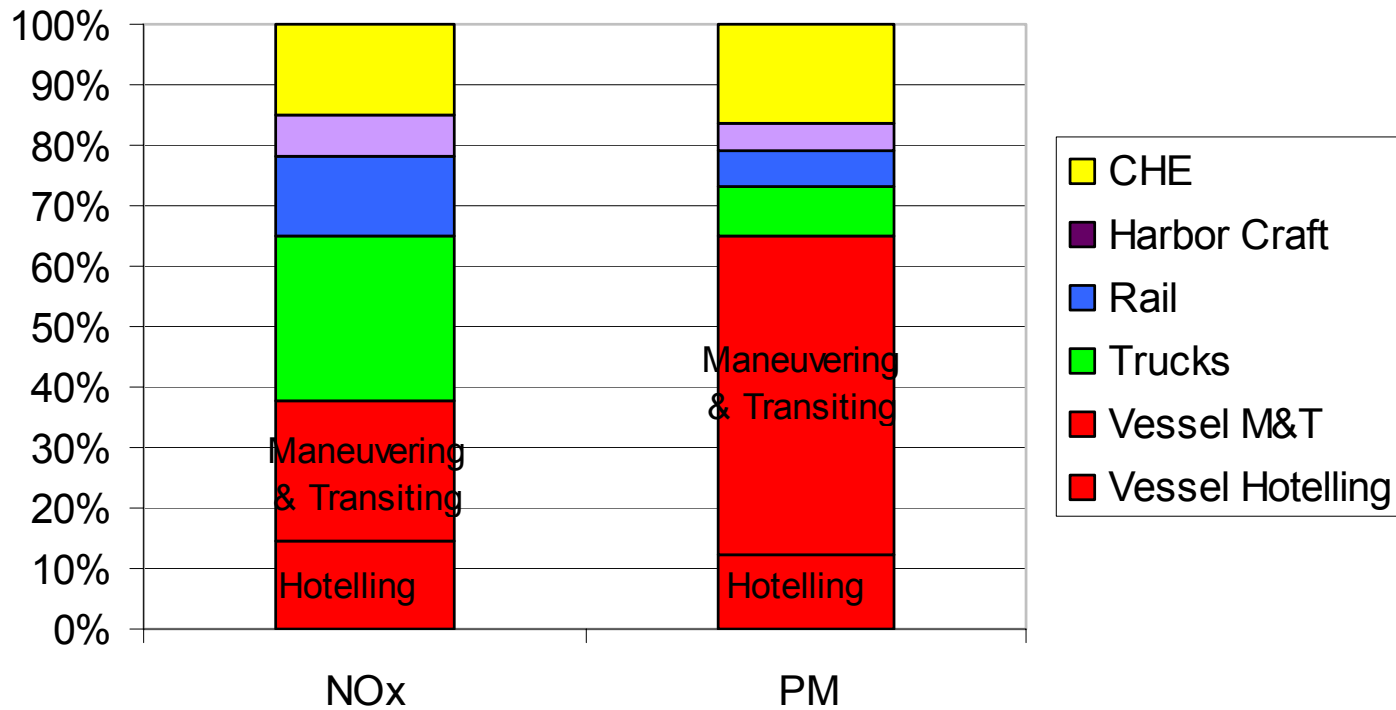
Metric: Emissions per ton of cargo handled

Programs:

- Cold Ironing/Shore side Electrification
- Smoke Stack Emission Control Program
- Vessel Speed Reduction
- Green Flag
- Vessel Retrofit Program
- Clean Cargo Handling Equipment
- Locomotive Replacement
- Truck Fleet Modernization
- Infrastructure and other strategies

Scope of the Problem

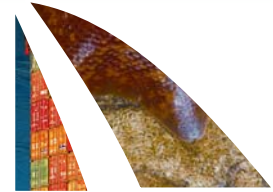
Total Emissions by Category (2002)



Policy Implementation

- Leasing Policy Modifications

- Reporting to Board and City Council on Regular Basis



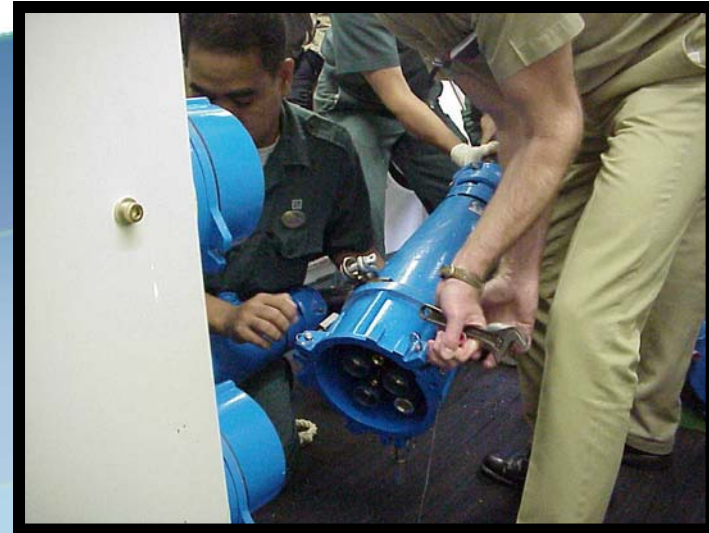
POLB Shore Side Electrical Power

- Aimed at Hotelling emissions
- Voluntary program
- POLB shore side improvements
- BP retrofit vessels
- Minimum of 120 calls over 10 years
- BP responsible for all Operational costs



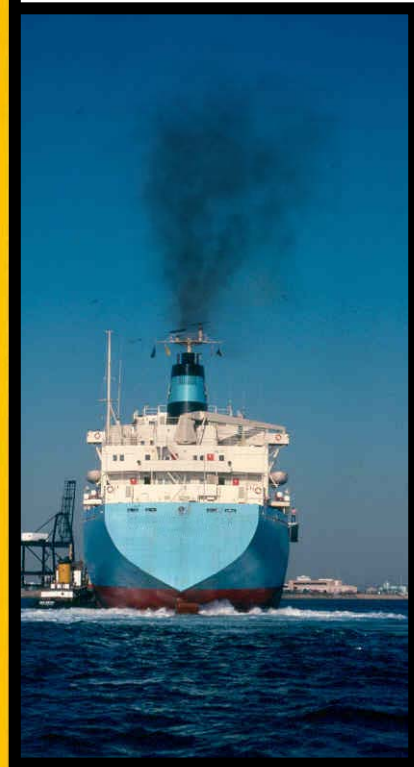
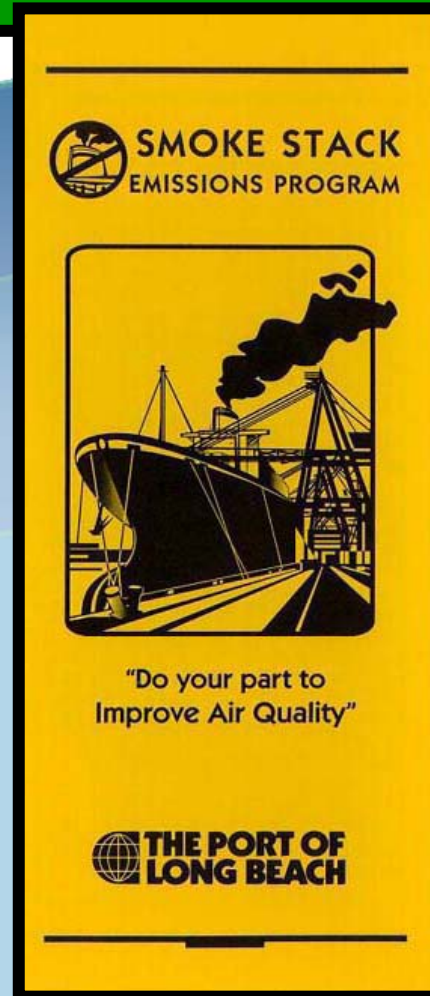
Shore Side Power Challenges

- Power Availability
- Electrical Infrastructure
- Wharf Improvements
- Vessel Retrofits
- Existing Leases



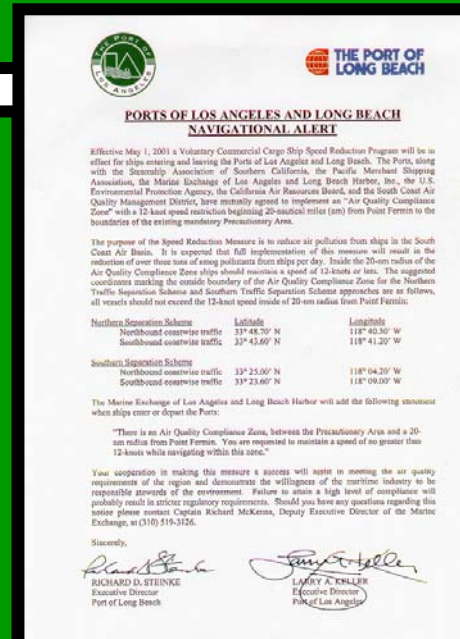
Smoke Stack Emission Reduction Program

- Particulates from smoke stack blows when engine started up
- Complaints/Damage from fallout
- Education/Outreach to vessel masters
- Training security personnel and AQMD reporting



Vessel Speed Reduction Program

- Goal reduce NOx from transiting vessels
- Voluntary-MOU with Ports, Regulatory, MAREX, PMSA, SASC
- Currently ~65% participation
- ~1.2 ton/day current reduction
- Incentives to Encourage

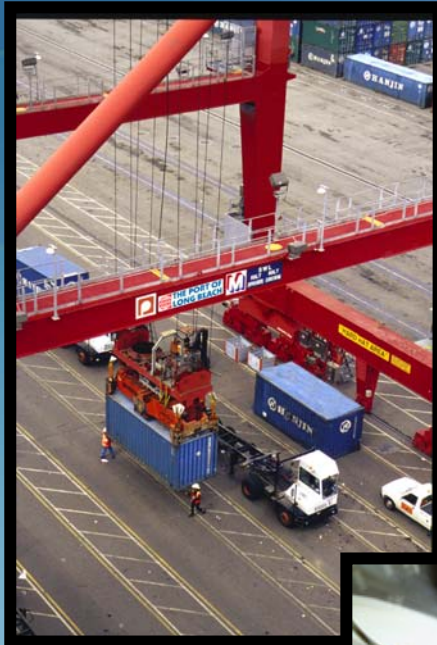


Vessel Retrofit Demonstration Project

- Retrofit demonstration project on existing vessel
- Maritime Working Group-CARB, EPA, Ports, Vessel operator
- Goal-NOx and PM reduction
- Fuel emulsification prior to injection



DOC installation on Cargo Handling Equipment & use of Alternative Fuel



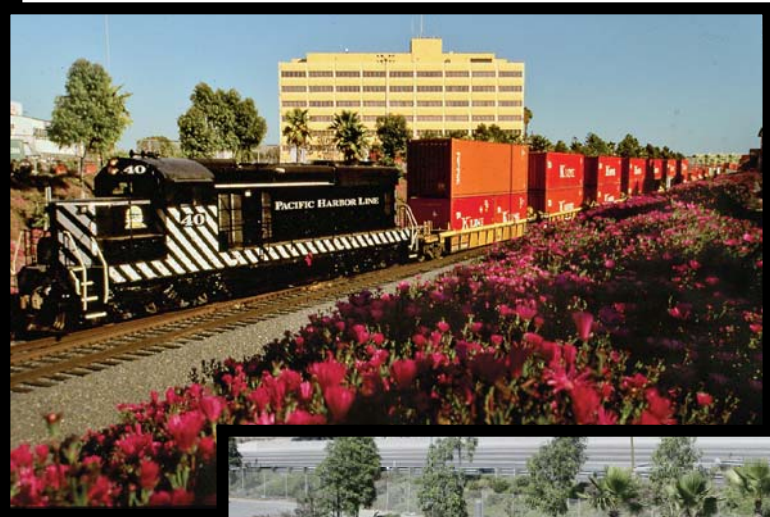
LNG Demonstration Project

- Cargo Handling Equipment alternative fuel evaluation
- Joint POLB, EPA, LBCT and SES funding
- Cutting edge for terminal application



Locomotive Fleet Replacement

- PHL operates locomotives in Ports
- New Agreement replaces all old locomotives with cleaner Tier II engines
- Includes "Green Goat" (hybrid) and LNG engines as part of fleet
- Future engine purchases equal to/or cleaner (e.g. Tier III)
- Run emulsified diesel and DOCs



Gateway Cities Fleet Modernization

- POLB and Cities teamed up
- Incentives average \$25,000 per truck
- Owner pays about one third of total truck cost
- Old truck engine and chassis are permanently destroyed
- Trucker saves about \$1700 per year in fuel costs
- Typical replacement truck emits about 50% less NOx and 85% less PM



Important Miscellaneous Air Related Efforts

- Emissions inventory of Port sources
- Grade separations (including Alameda Corridor) eliminate idling and reduce emissions
- On-dock railyard eliminates drayage trips
- Extended Gate Hours and Appointments
- Ratify Marpol Annex VI and request SECA

Other Strategies in Place

- Container cranes electrified
- Many LPG forklifts
- O₂ Diesel being used in selected pieces of equipment
- Electric dredges or dredges using emulsified diesel
- ULSD in construction equipment



**THE PORT OF
LONG BEACH**



Green Port
Long Beach