

Clean Air Action Plan Update



Port of
LONG BEACH
The Green Port

Carter Atkins
May 18, 2011

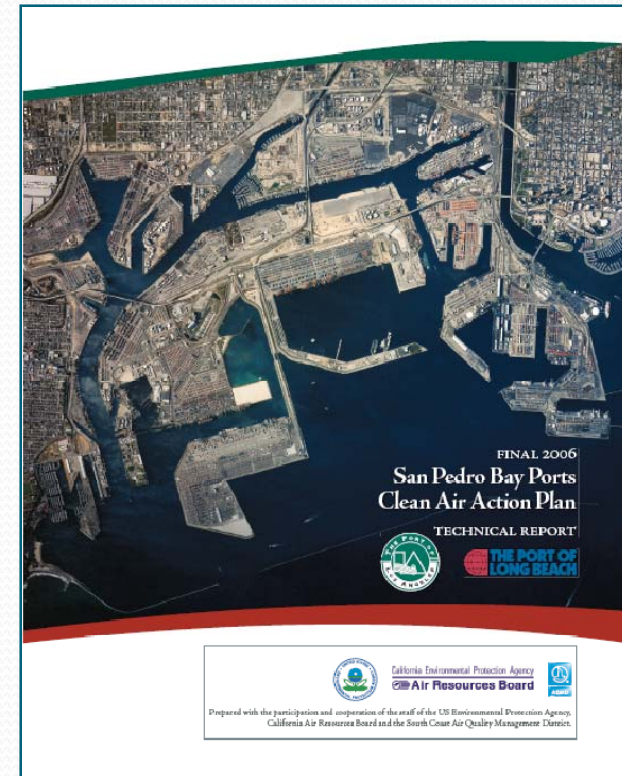
Presentation Outline

- CAAP Background
 - Accomplishments to Date
- Updates to the CAAP
 - San Pedro Bay Standards
 - Measures
 - Emissions Benefits



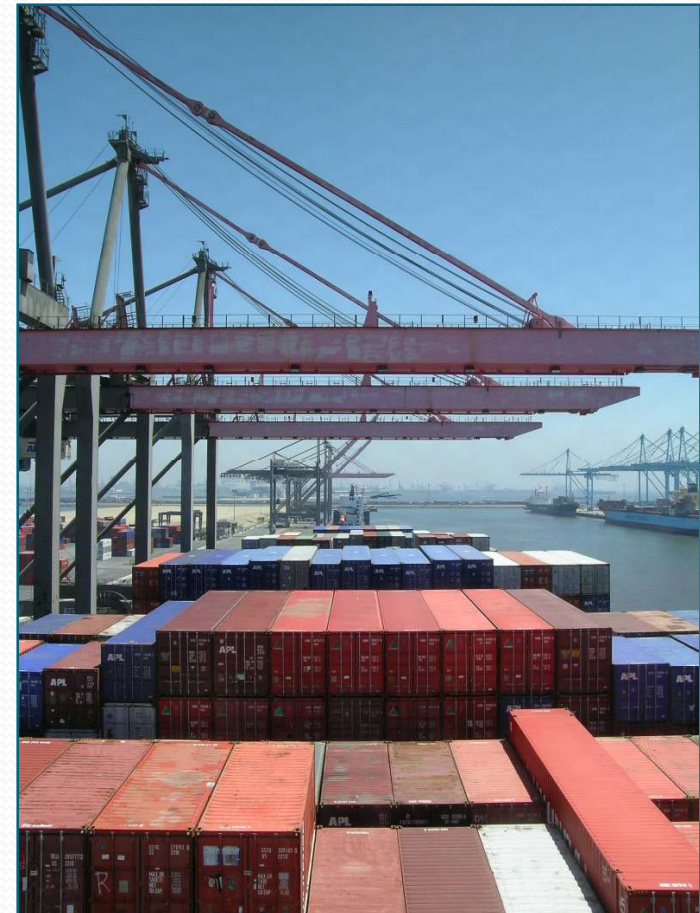
What is the Clean Air Action Plan?

- Joint plan for POLA & POLB
- To reduce air quality impacts from port-related mobile sources over the next five years
- Developed in cooperation with USEPA, CARB, AQMD



Clean Air Action Plan Principles

- Minimize health risk
- Contribute “fair share” reductions in mass emissions
- Set consistent standards
- Allow port development to continue



Accomplishments

- CAAP Adopted in November 2006
- Clean Truck Program (HDV1)
 - Established in 2007
 - Compliance schedule phase-in
 - Clean trucks: 77% POLB, 84% POLA (Feb 2010)
- LNG on-road truck fueling station constructed and operational since early 2009 (HDV2)

Accomplishments (cont.)

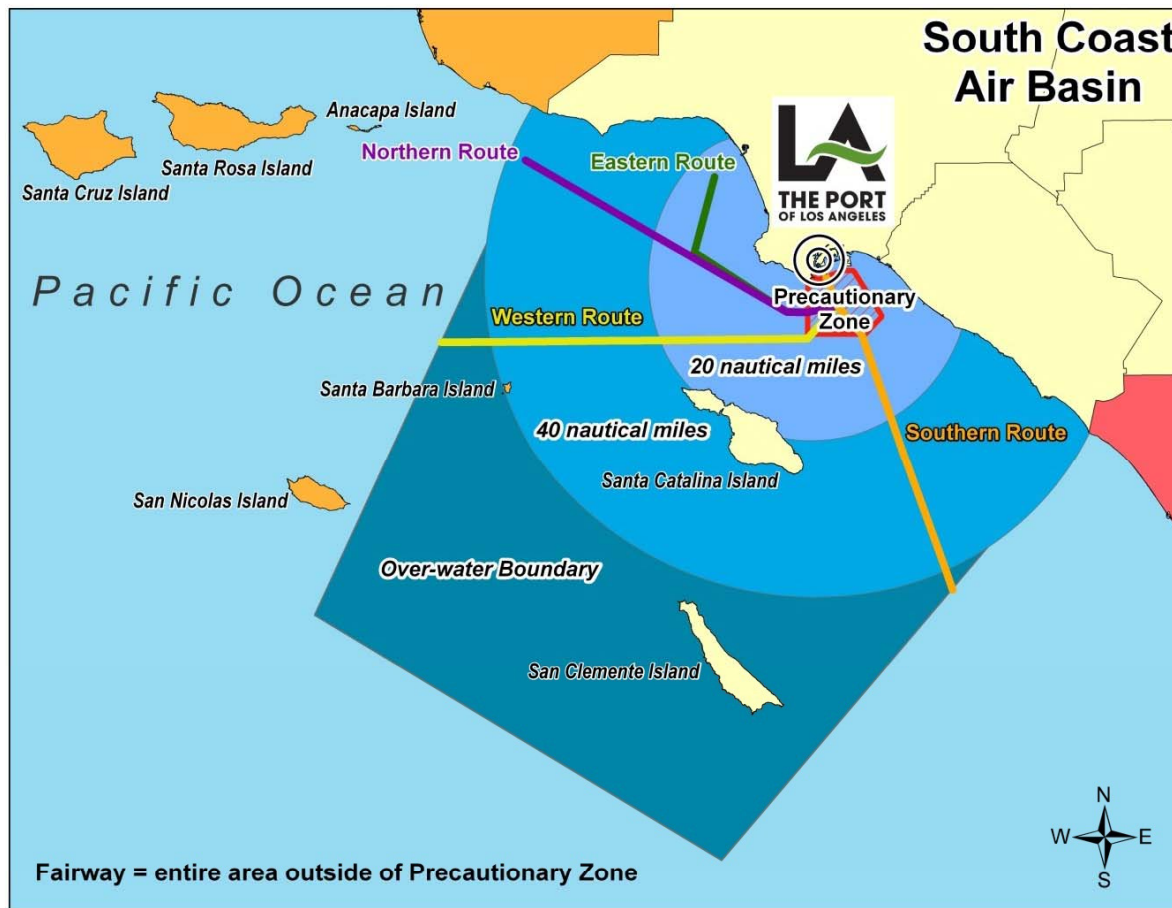
- Technology Advancement Program (TAP)
 - Established in March 2007
 - As of early-2010, ports have provided \$5.4 million in funding



Accomplishments (cont.)

- Vessel Speed Reduction (OGV1)
 - Incentive programs expanded to 40nm from Point Fermin
 - 2010 Compliance:
 - POLB: 96% to 20 nm, 77% to 40 nm
 - POLA: 91% to 20 nm, 63% to 40 nm
- Vessel Engine Fuels (OGV3 & 4)
 - Port Fuel Incentive Program (7/08 – 6/09)
 - CARB vessel fuel rule effective 7/09

Vessel Speed Reduction



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Accomplishments (cont.)

- Shorepower (OGV2)
 - POLA
 - 3 container berths completed
 - 2 cruise
 - 13 container berths to be completed by (January 1, 2014)
 - POLB
 - 1 container berth completed
 - 1 liquid bulk berth completed
 - 1 dry bulk terminal completed
- Remaining Cruise & Containers Terminals by 2014

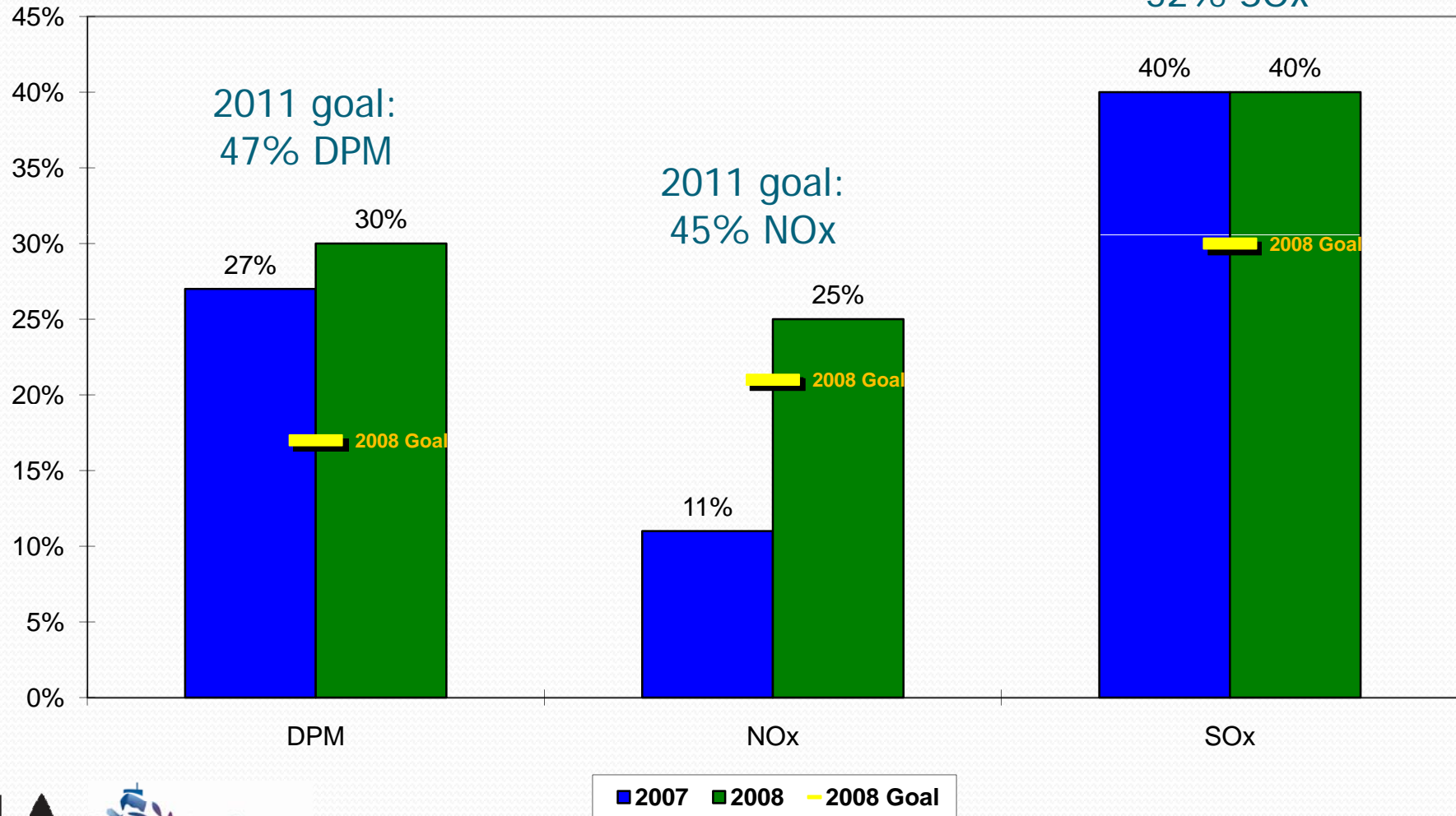
Accomplishments (cont.)

- Port switcher locomotives upgraded in 2008 to Tier 2 and Tier 3 gensets (RL1)
- Significant upgrades of harbor craft and cargo handling equipment (HC1, CHE1)



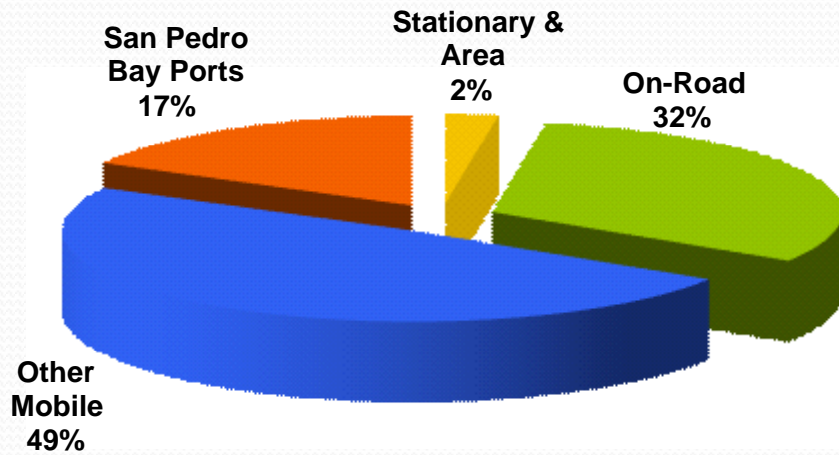
Progress Toward Achieving Original CAAP Goals

2011 goal:
52% SOx

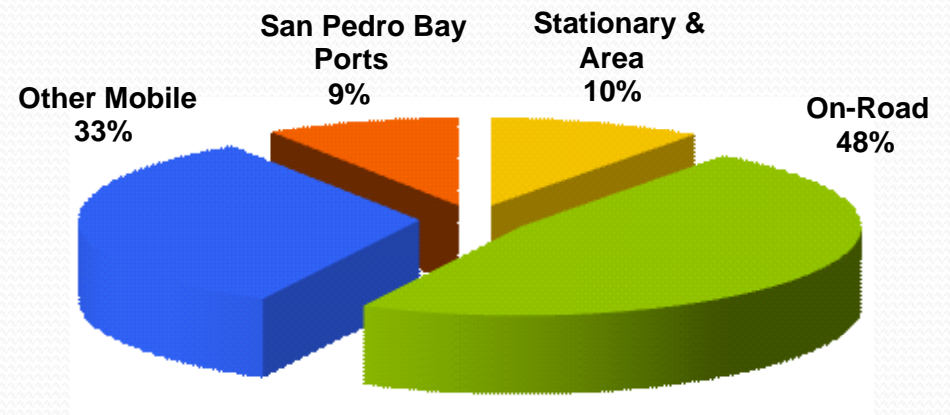


2008 Port Contribution to the SCAB

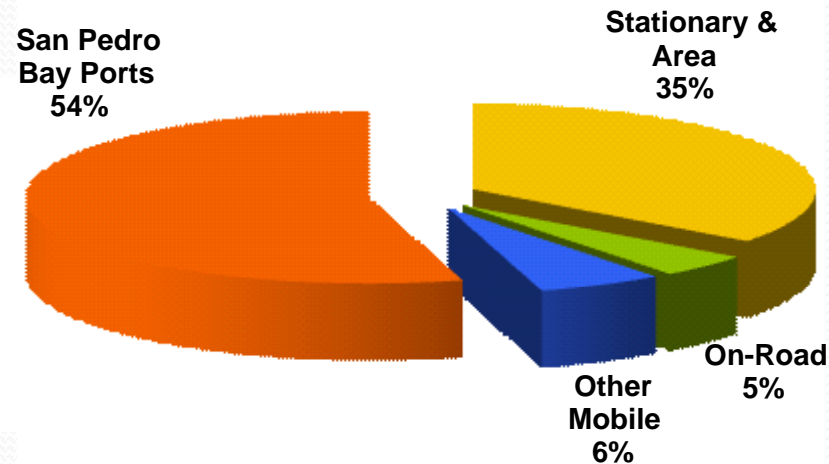
DPM



NOx



SOx



Updates to the CAAP

- CAAP is a “living” document:
 - Review existing measures
 - Evaluate new measures and technologies
 - Incorporate new regulations
 - Incorporate new information

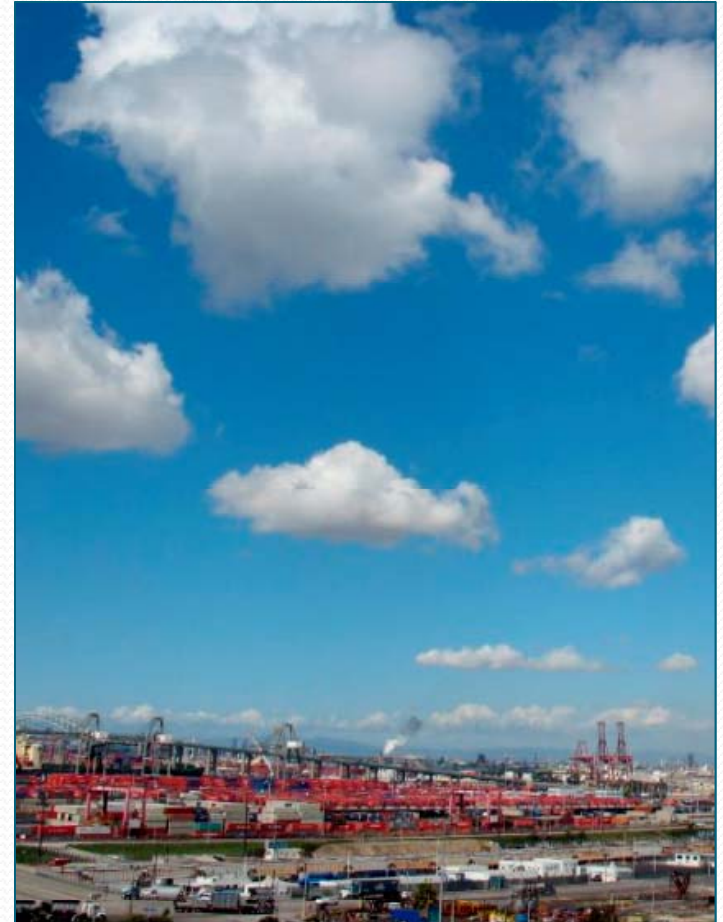
CAAP Update Highlights

- Development of San Pedro Bay Standards
 - Emissions Reduction Standards
 - Health Risk Reduction Standard
- Update measure implementation



San Pedro Bay Standards

- Provide long-term goals for cumulative port-related operations
 - Reduction in “fair-share” of emissions to enable the region to attain the 2014 and 2023 ambient air quality standards
 - Expeditious reduction in health risk from port-related mobile sources



Emissions Forecasting

- Developed an agreed upon methodology and results extensively reviewed with the TWG
- Utilized the ports' latest cargo forecast (2007)
- Included port CAAP commitments and currently adopted regulations as of July 2008
- Forecasted emissions to 2014 and 2023 and compared to 2005 baseline

Emissions Forecasting Results

- 2014 reductions compared to 2005
 - 72% less DPM
 - 19% less NOx
 - 93% less Sox
- 2023 reductions compared to 2005
 - 75% less DPM
 - 18% less NOx
 - 92% less SOx

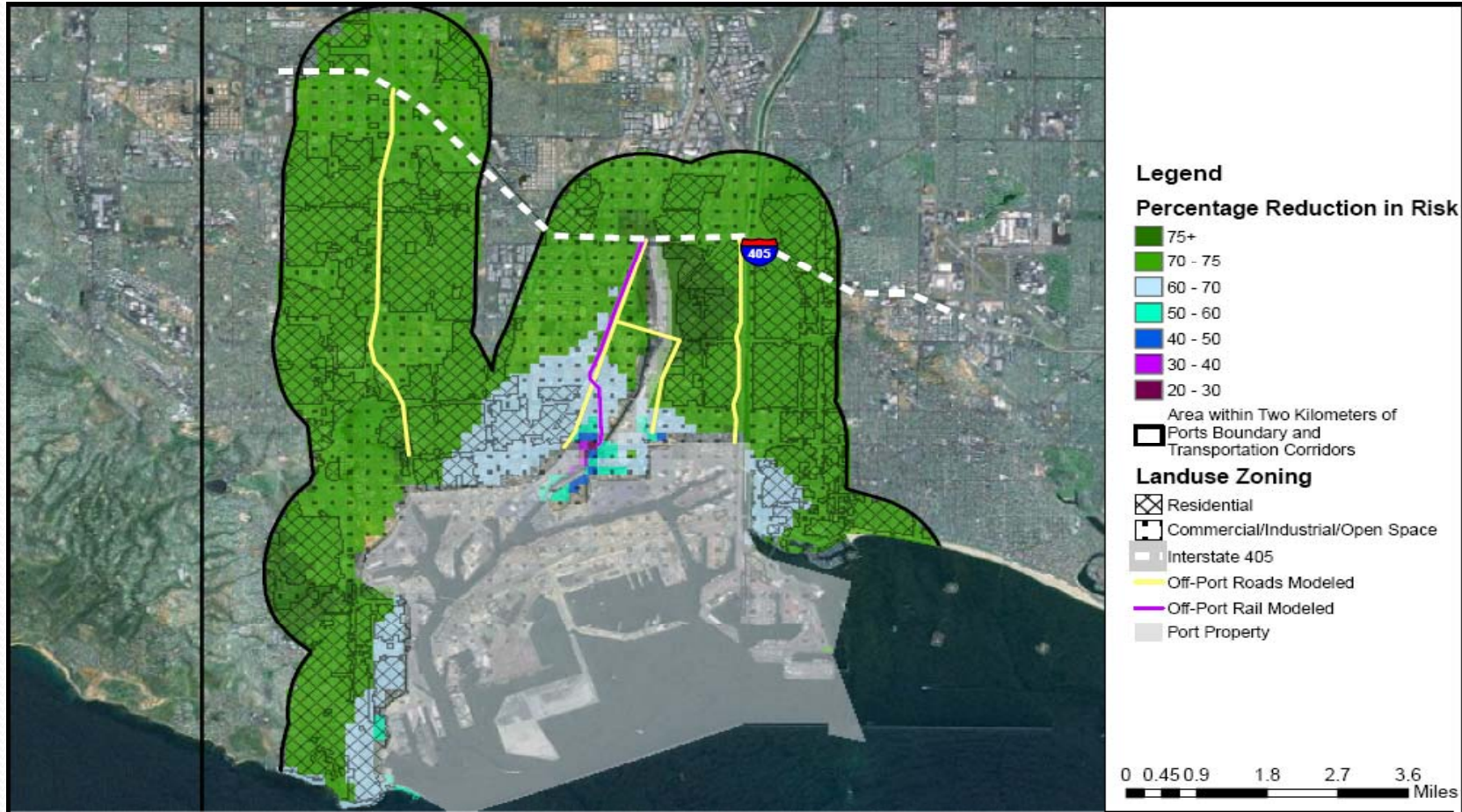
Health Risk Assessment

- Developed an agreed upon protocol with the TWG
 - Consistent with ARB Exposure Study Methodology completed for ports in 2006, with updates
- HRA based upon spatially allocated 2005 baseline and 2020 forecast DPM emissions
- Comparison of 2020 to 2005 baseline

Health Risk Assessment Results



Health Risk Assessment Results



Proposed San Pedro Bay Standards

- Emissions Reduction Standards
 - By 2014, reduce emissions by:
 - 72% DPM
 - 22% NOx
 - 93% SOx
 - By 2023, reduce emissions by:
 - 77% DPM
 - 59% NOx
 - 92% SOx

Proposed San Pedro Bay Standards

- Health Risk Reduction Standard
 - By 2020, reduce the population-weighted residential cancer risk of port-related DPM emissions by 85%, in highly-impacted communities located proximate to port sources and throughout the residential areas in the port region

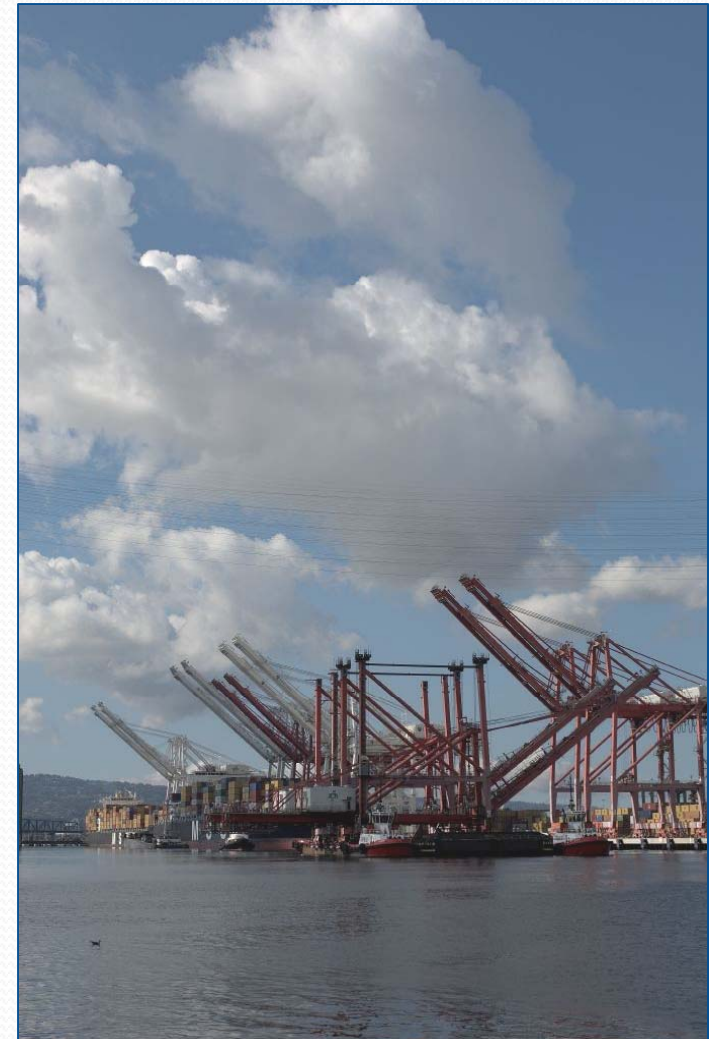


San Pedro Bay Standards Implementation

- The Standards will be achieved through:
 - Implementation of the strategies in the CAAP
 - In individual projects, all existing CAAP strategies and regulations will be included and any new and feasible measures beyond the CAAP
 - In updates to the CAAP, the ports will include new and feasible measures
 - Regulatory actions by the agencies to implement requirements to control specific source categories

New/Revised Measures in the CAAP

- Measure Enhancements
 - OGV5 – Cleaner OGV Engines
 - OGV6 – Vessel Technologies
 - RL2 – Class 1 Operations
 - RL3 – Near-dock Rail Yards
- All measures have been updated to reflect actual implementation & latest planning



Thank you

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