



SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN

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NEDC Partners Meeting
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Mobile Pollution Sources at Ports



Clean Air Action Plan Challenges

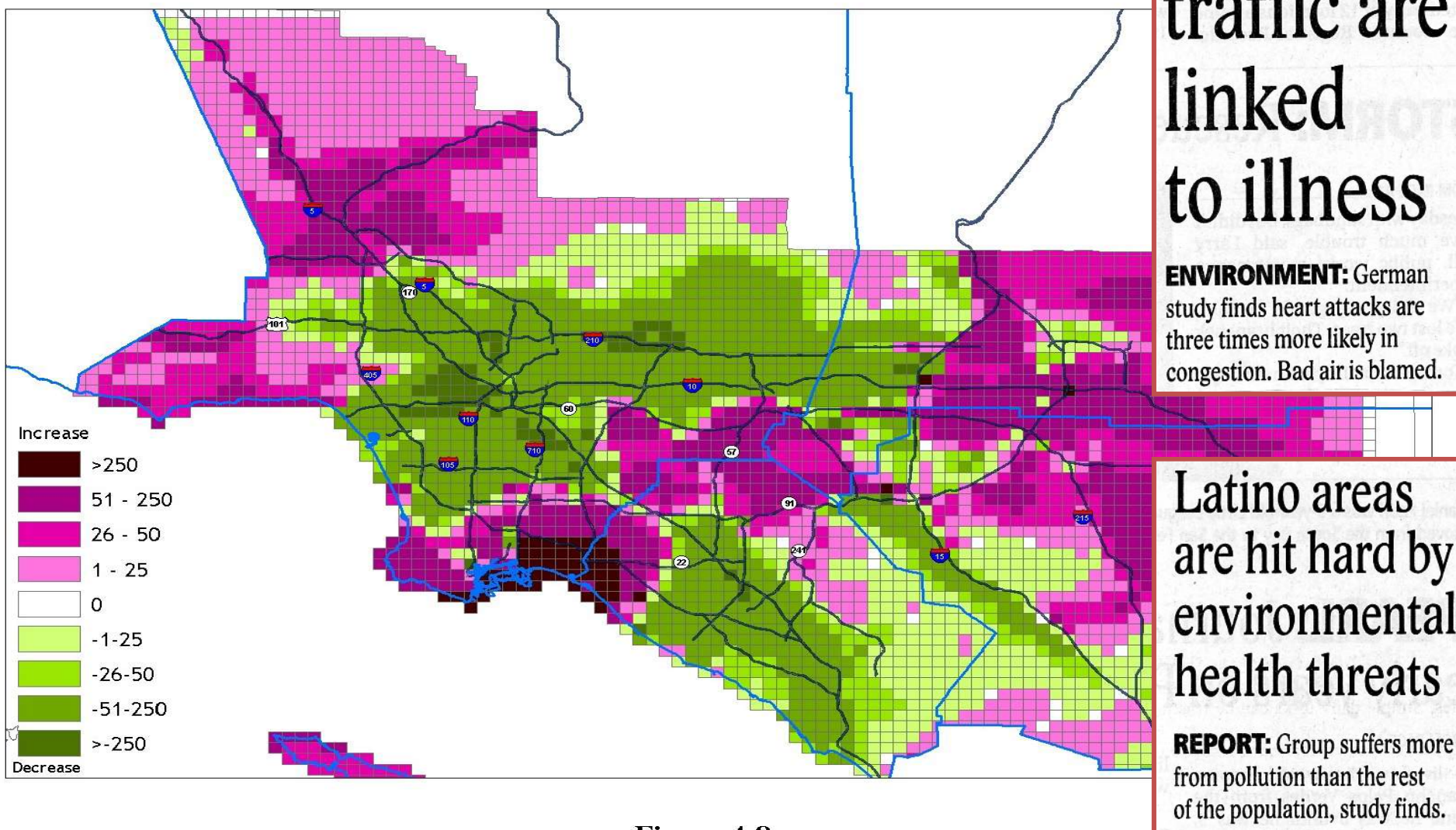


Figure 4-8

Change in CAMx RTRAC Simulated Air Toxics Risk (per million) from the 1998-99 to 2005
(using back-cast 1998 emissions and 1998-99 MM5 generated meteorological data fields)



Clean Air Action Plan

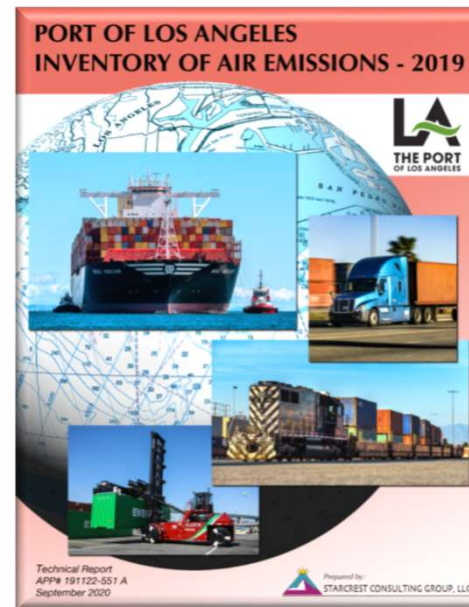
- Goals
 - Minimize Health Risk from Port Operations
 - Contribute “fair share” to reducing regional mass emissions
 - Enable Port development
 - Set consistent source-specific standards
- Update in 2010
 - Health Risk Reduction Standard
 - Reduce population-weighted cancer risk of port-related diesel particulate matter (DPM) by 85% by 2020 (compared to 2005 baseline)
 - Emission Reductions Standard
 - Reduce NOx emissions by 22% by 2014 and 59% by 2023
 - Reduce SOx emissions by 93% by 2014 (and 2023)
 - Reduce DPM emissions by 72% by 2014 and 77% by 2023
- 2nd Update release in November 2017
 - New GHG, zero emission goals





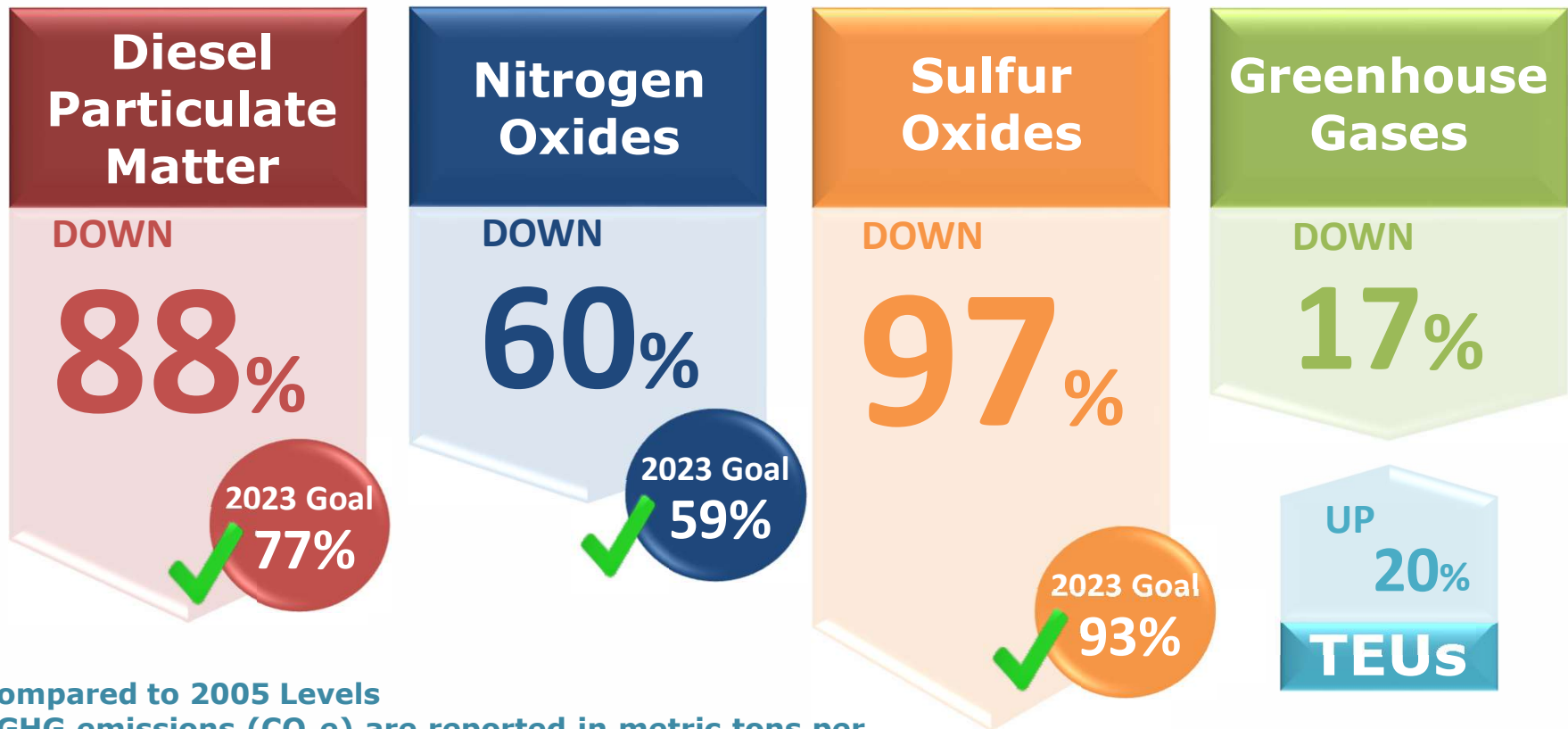
Annual Emissions Inventories

- Annual activity-based
 - 2001, 2005 – 2019
- Source categories
 - Ships, harbor craft, cargo handling equipment, trucks, locomotives
- Pollutants
 - PM • PM₁₀ • PM_{2.5} • DPM • NO_x • SO_x • HC • CO
- Greenhouse gases
 - CO₂ • CH₄ • N₂O • CO_{2e}
- Annually coordinated with & reviewed by CARB, SCAQMD, & EPA





SPBP 2019 Air Emissions Reductions



*Compared to 2005 Levels

**GHG emissions (CO₂e) are reported in metric tons per year; all other pollutants are shown in tons per year.

Ocean-Going Vessels



- Increase vessel speed reduction compliance within 40 nautical miles
- Use at-berth emission reduction technologies
- Incentivize energy efficiency upgrades and clean technologies
- Develop a Clean Ship Program to transition the oldest, most polluting ships out of the fleet

Heavy-Duty Trucks



- Advance the Clean Trucks Program and transition to zero-emission trucks by 2035
- Adopt a reservation system at terminals to improve trucks turn times

Terminal Equipment



- Transition to zero emissions terminal equipment by 2030
- Limit idling



Additional 2017 CAAP Update Highlights

- **Expand use of on-dock rail**
- **Accelerate deployment of cleaner harbor craft engines**
- **Encourage improvements in freight efficiencies**
- **Develop Green Terminal Recognition Program**
- **Ensure energy infrastructure is available to support use of cleaner technologies**



CAAP Community Engagement Process

Public Comment and Over 70 Stakeholder Meetings
2015 - 2017

Final CAAP 2017
Joint Board Meeting
11/2/17





Recurring Comment Themes

stakeholder process

carbon footprint

accountability

interim milestones

emission reductions

infrastructure

costs

zero-emissions

CLIMATE CHANGE

workforce

community health

economic competitiveness

near-zero emissions

funding

feasibility assessments

POLA Grant-Funded Technology Demos - Update

Green Omni-Terminal Project

CARB \$14.5 Million

STATUS UPDATE:

- 4 electric yard tractors
- 2 electric Class 8 trucks
- ShoreKat land-based at-berth emissions control system
- Solar rooftop array with microgrid controls and battery storage
- 3 electric forklifts

Shore to Store Project

CARB \$41 Million

Various Partners off-Port Property

- 10 H₂-electric Class 8 trucks
- 2 heavy duty H₂ fueling stations
- 2 electric yard tractors with charging infrastructure (Port of Hueneme)
- 2 Zero-emission forklifts

AID Project

CEC \$7.8 Million

WBCT (China Shipping)

- 10 battery-electric yard tractors
- 12 Wireless charging stations
- Peak-shaving storage system

Advanced CHE Demonstrations

CEC \$10.3 Million

Everport

- 20 RNG yard tractors
- 5 electric yard tractors, standard chargers
- 3 electric yard tractors, advanced charging system
- 2 electric top handlers



POLB Grant-Funded Demonstrations - Overview

