



**National Clean Diesel Campaign**



**WEST COAST COLLABORATIVE**  
Public-private partnership to reduce diesel emissions



## National Clean Diesel Campaign

**CLEANPORTSUSA**  
SVC

**Gay MacGregor**  
**U.S. Environmental Protection Agency**

*Office of Transportation and Air Quality*



## National Clean Diesel Campaign

- Reducing emissions from diesel engines is one of the most important air quality challenges facing the country
- Even with more stringent standards set to take effect in the next decade, over the next 20 years millions of in-use engines will continue to emit large amounts of pollution





# NCDC: Two Components

## Dual Role for Federal Government:

### Regulator

- Regulations for new engines

### • Convener

- Technology Exists to address diesel emissions
  - Retrofit, Replacement, Idling reduction, smart operations, etc.
- Authority varies for in-use engines
- Leadership - a national dialogue that results in voluntary action
  - Identify incentives/barriers and funding opportunities

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# Regulatory Strategy for NEW diesels

Diesel engines in all mobile source applications--

- *Regulations adopted; now focused on implementation:*



**Heavy-duty trucks & buses**



**Nonroad machines**



**Light-duty vehicles**

- *Rulemakings underway for:*



**Locomotives**



**Marine vessels**



**Ocean-going ships**

- **Current Regulations**
  - Very large public health and environmental benefits will result:
    - By 2030, PM reduced by ~250,000 tons/year, NOx by ~4 million tons/year
    - Annual benefits expected to exceed \$150 billion versus costs of approximately \$7 billion
- **15 ppm sulfur cap gets immediate PM and SOx reductions from existing fleet of diesels**
  - Highway (mid 2006)
  - Nonroad (500 ppm in 2007, 15 ppm in 2010)
  - Locomotive and marine (500 ppm in 2007, 15 ppm in 2012)

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## Locomotive & Marine Diesels Rulemaking

- Published Advance Notice in May 2004
- Targeting high-efficiency aftertreatment
  - Patterned after highway and nonroad programs
  - L&M fuel will be at 500 ppm in 2007, 15 ppm in 2012
  - Large pool of 15 ppm fuel (highway/nonroad) earlier
- Considering new standards as early as 2011
- PM-filter based standard is high environmental priority
- Possibly phase in NOx aftertreatment similar to highway/nonroad approach
- Looking to address existing locomotives too (at remanufacture)

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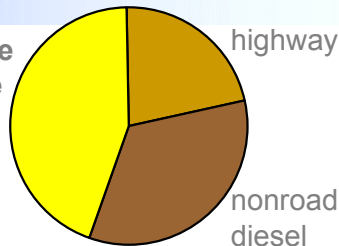


## Diesel PM<sub>2.5</sub>

### Mobile Source Inventories in 2030

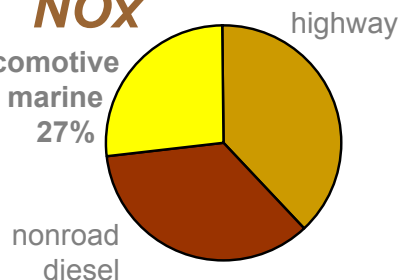
- Potential reductions on the order of:
  - ~25,000 tons/yr of PM
  - ~900,000 tons/yr of NOx
- Compares to nonroad rule reductions of:
  - ~129,000 tons/yr of PM
  - 738,000 tons/yr of NOx

locomotive & marine  
45%



## NOx

Locomotive & marine  
27%



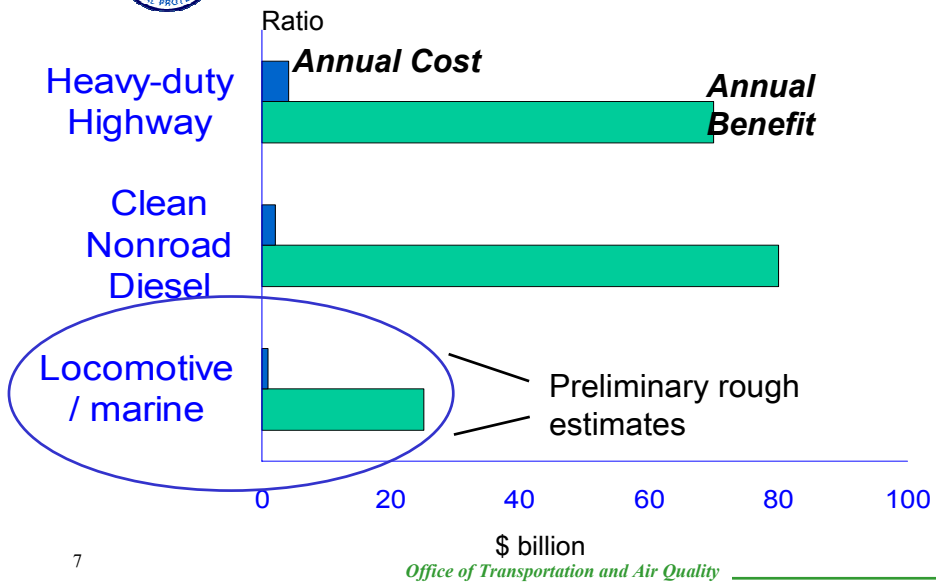
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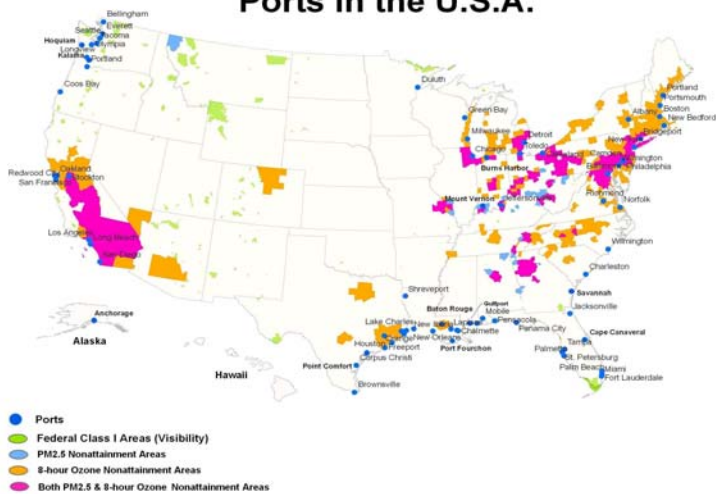
### Potential Health Benefits

Are a Sizeable Fraction of Recent Historic Programs, with a Comparably Large Benefit-Cost Ratio



### Ports located in Nonattainment Areas

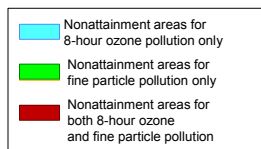
#### Ports in the U.S.A.



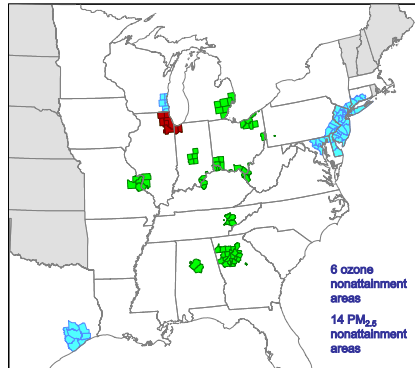


## Future Nonattainment for Ports

Even after regulations take effect and new engines are phased in, coastal areas will still struggle to meet the Ozone and PM Standards – Projections in 2015



Projected Nonattainment Areas\* in 2015 after Reductions from Existing Clean Air Act Programs



\*Although tallies include all nonattainment areas in the eastern U.S., maps show only limited States. Nonattainment areas in Los Angeles would also be projected. Four current O<sub>3</sub> nonattainment areas in New England are not pictured.



## Voluntary Approaches to the “Legacy” Diesel Engines

Objective: By 2014 reduce emissions from the over 11 million engines in use

Sectors:

- Marine Ports
- Construction
- School buses
- Freight
- Agriculture

Where are the opportunities? How do we provide incentives for voluntary action?





## Cost-Effective Reduction Strategies Exist Today

### •Technology Strategies

- Refuel
- Retrofit
- Repair/Rebuild
- Repower
- Replace

### •Operational Strategies

- Idle Reduction
- Improved Port Efficiency
- Use of On-shore Power
- Considering Air Quality Impacts of Security Changes
- 11 -Contract or Lease Specs for terminals and construction



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## Terminal and Port Operational Strategies



Chassis Pools



Terminal Appointments



Alternative Terminal Design



Intermodal Operations



## Truck Technologies



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## Federal Advisory Work Group - Clean Ports USA



- **Work Group – April 2004**
- **Draft Report Recommends**
  - Grants, Loans, Rebates
  - Tax incentives
  - Contract/Lease Requirements
  - Recognition/Awards
  - Regulatory Credits – SIP, Conformity – Guidance due soon
  - Streamline Technology Verification – Underway
  - Better Inventories - Underway
- **Clean Ports USA - Voluntary program to encourage reductions in diesel emissions at ports**

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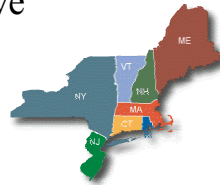
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## EPA Regional Initiatives

- Many localized, regional approaches have been established:
  - West Coast Diesel Collaborative
  - Northeast Diesel Collaborative
  - Mid-West Clean Diesel Initiative
  - Mid-Atlantic Diesel Collaborative
  - Blue Skies Collaborative



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## EPA's role

### Headquarters Role

- Facilitate National/International Dialogue – raise issues to public agenda
- Provide high-quality, verifiable data on emissions reduction options, program results and tools for evaluating options
- Facilitate information exchange and program evaluation
- Seed funding through loans and grants
- Work with national partners and key Regional collaboratives: West Coast, Northeast and Midwest

### Regional Role

- Develop long-term relationships with key port authority environmental managers
- Manage specific projects and grants
- Work with state and local agencies to promote diesel emission reductions

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## Future Federal Funding: Overview

### – **FY06 budget**

- \$5 Million for National Clean Diesel Campaign
  - RFP for West Coast closes 3-23-06
- \$7 Million for Clean School Bus USA



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### – **Transportation SAFETEA- LU**

- CMAQ \$ for nonroad retrofit (over \$8 billion available)
  - Makes the construction equipment retrofits eligible for trust fund
  - Funding available now from MPOs

### – **Energy Policy Act 2005**

- Diesel Emission Reduction Act (DERA) \$1 Billion over 5 years
  - Authorization, still needs appropriation
  - Provisions for state programs

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## For more information....



**National Clean Diesel Campaign**

[www.epa.gov/cleandiesel](http://www.epa.gov/cleandiesel)

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## Energy Policy Act Provisions

### • **Diesel Emission Reduction Act (DERA)**

- \$1 Billion over 5 years
- Expect to fund 150-200 projects
- 70% of the funds EPA Grants and Loans
- 20% of the funds to establish State grant/loan programs
- An optional 10% of the funds can be used to increase state allocations for states that match federal funds

### • **Fleet Modernization**

- \$100 M over 3 years (focus on ports)

### • **Idle Reduction**

- \$140M over 3 years for idle reduction



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## Energy Policy Act (cont'd)

### **Amendments to the Biomass Research and Development Act of 2000**

- Authorizes \$200 million for 10 years (FY 2006-2015) to develop technologies and processes necessary for abundant commercial production of biobased fuels at prices competitive with fossil fuels and a diversity of sustainable domestic sources of biomass for conversion to biobased fuels and biobased products.
- **Advanced Biofuel Technologies Program**
  - Authorizes EPA to spend \$110 million/year for 5 years (2005 to 2009) on biofuels technology development.
  - Priority shall be given to projects that enhance geographic diversity of alternative fuels and utilize feedstocks that represent 10% or less of ethanol or biodiesel fuel production in the US during the previous fiscal year.

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## Opportunities Available Now

- **EPA's programs are in place to help communities clean up diesel engines**
  - Through these programs the Agency has gained expertise and is working with states and locals to develop and implement program strategies
  
- **Now is the time to target the existing fleet**
  - Cost effective strategies exist today
  - Cleaner fuels are being deployed throughout the country
  - Broad stakeholder support
  - States and tribes putting plans in place to achieve PM and Ozone attainment goals or regional haze
  - Funding opportunities exist at state and federal level