

# **Northeast Diesel Collaborative**

Partnerships to Reduce Diesel  
Emissions in the Northeast

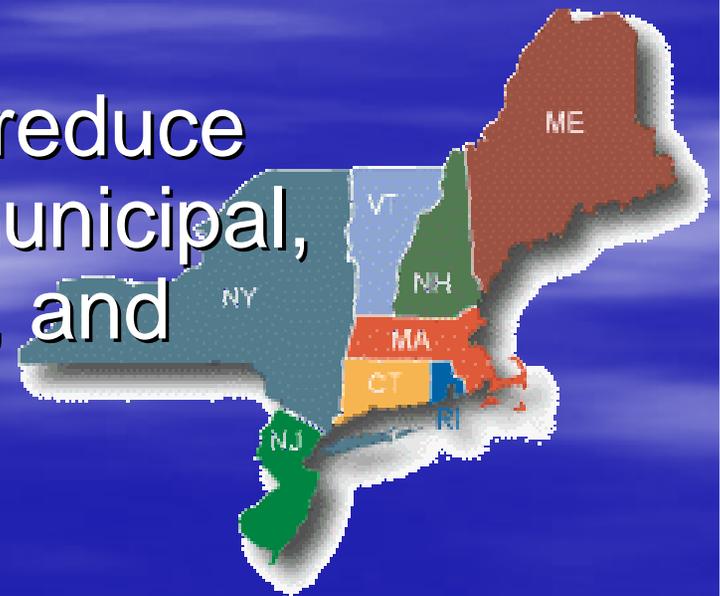
New England Railroad Club  
January 26, 2006

# Northeast Diesel Collaborative

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*Established by NESCAUM, EPA, and the  
eight northeastern states to:*

- Expand and develop regional partnerships to reduce diesel emissions and protect public health
- Build on success to further reduce emissions in key sectors: municipal, construction, transit, freight, and ports/authorities
- Leverage new funding



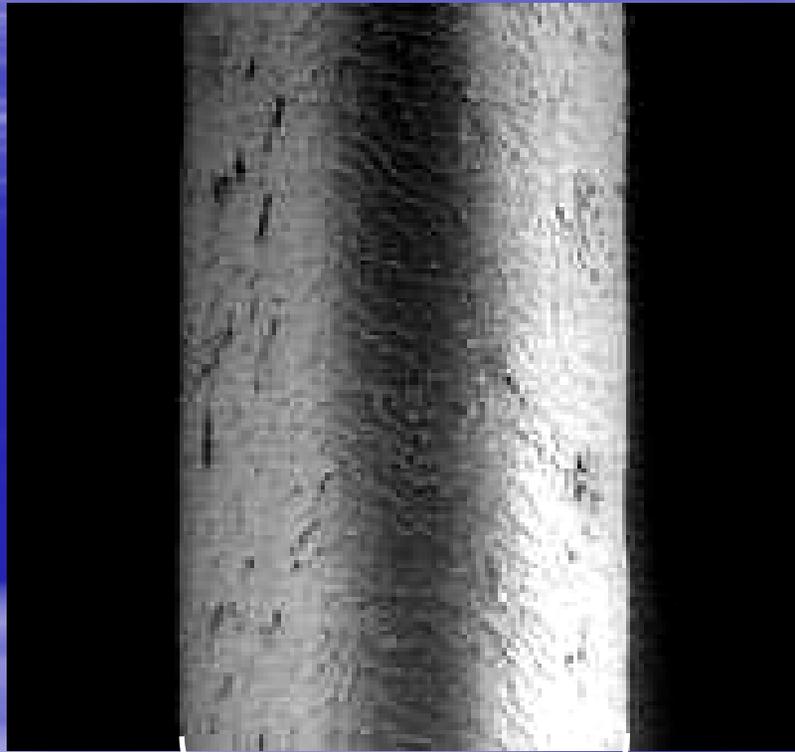
# Why Focus on Diesel Emissions?

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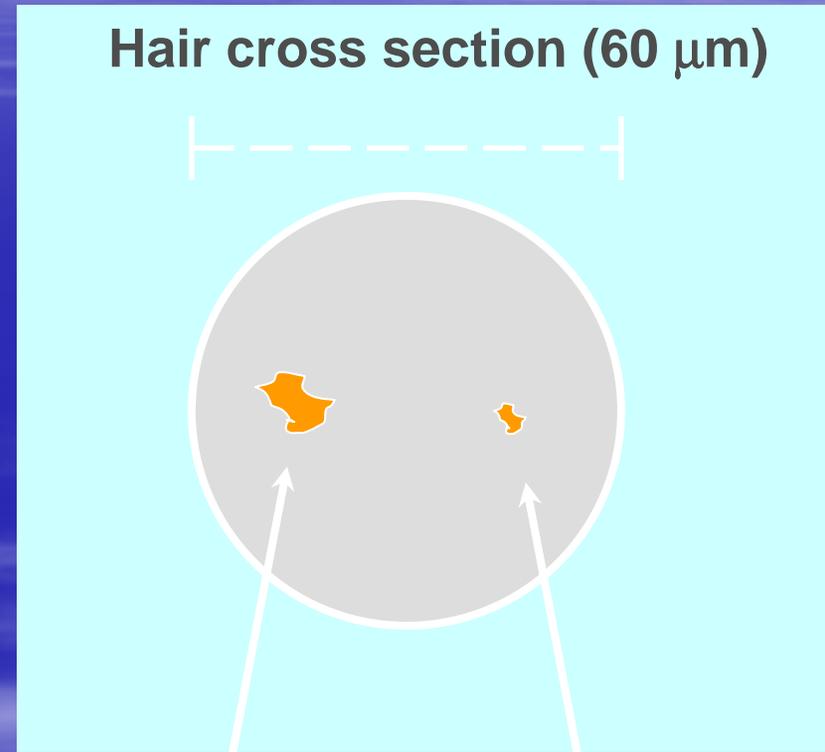
- Diesel exhaust contains fine particles that EPA has classified as a likely human carcinogen and that can aggravate asthma, cause lung damage, and lead to premature death
- All six New England states have childhood asthma rates above 10%; areas of NYC near 15%
- 25 counties in CT, NJ, and NY do not meet the standard for fine particles; other urban areas barely meet the standard

# Fine Particles

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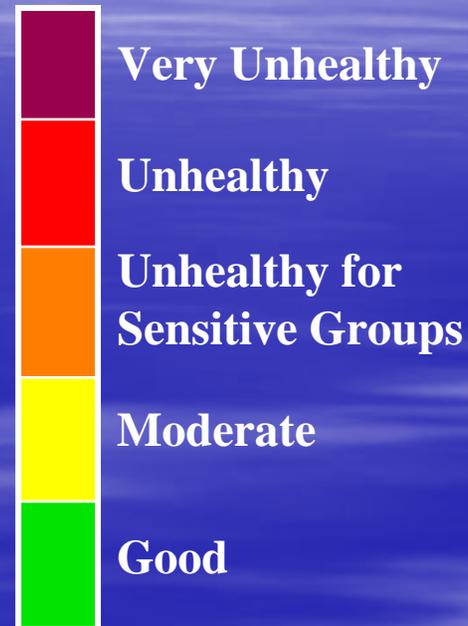
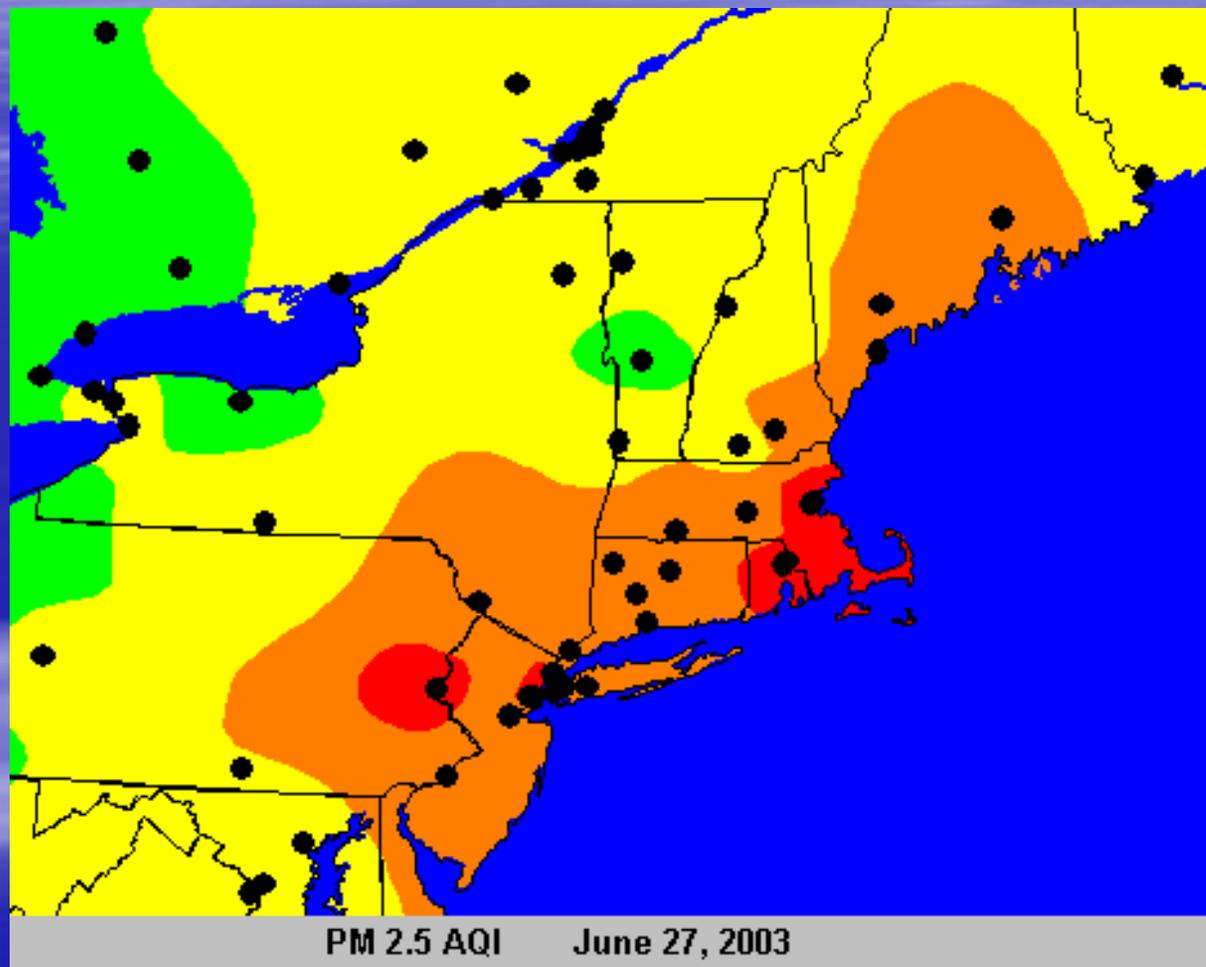
**Human Hair**  
(60  $\mu\text{m}$  diameter)



**PM10**  
(10  $\mu\text{m}$ )

**PM2.5**  
(2.5  $\mu\text{m}$ )

# Unhealthy Levels of Fine Particles Occur across New England



# A Collaborative to Build on Success

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Northeast has served as both laboratory and proving ground for clean diesel innovation over the past ten years



# Building on Success: Innovation

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- Country's first major construction retrofit: Central Artery (Big Dig), Boston
- First retrofit of tower crane: 7 World Trade Center Reconstruction, NYC
- First truck stop electrification: Hunts Point Market, NYC
- First use of SCR on marine vessel: Staten Island Ferry
- First locomotive retrofit with DOC: MBTA Commuter Rail, MA

# Building on Success: Sectors

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- Municipal
  - 4,000 school buses equipped with emission controls; retrofit & idle reduction programs in every NE state
  - NYC Sanitation Department retrofitting 250 vehicles
- Construction
  - 200 vehicles retrofitted at the Big Dig
  - 200 vehicles retrofitted at I-95 Q Bridge project, CT
  - Contract requirements in city, state construction projects
- Transit
  - Nearly 5,000 buses in major cities (New York, Boston, Providence, Stamford) use filters and ULSD
  - Every ferry fleet in New York harbor is being retrofitted
  - MBTA commuter rail is fueling with LSD and testing DOC on locomotive

# Building on Success: Sectors

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- Freight
  - Installed 30 electric/HVAC/cable-ready bays at largest produce market in the U.S.
  - Electrified 238 truck bays at 5 truck stops along NY Thruway, NJ Turnpike
  - Installed 158 DOCs and 30 DPFs on Mack Trucks
  - Installed auxiliary power units on 30 switchyard locomotives in MA & CT to reduce idling
- Ports/Authorities
  - Retrofitting 36 yard and tractor vehicles at Conley Container Terminal, Boston
  - At LaGuardia, Delta Air Lines is replacing entire fleet of diesel- and gas-powered ground support equipment with electric equipment and rapid battery-charging infrastructure

# Locomotive Emissions

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- Concern about employee, passenger, and community exposure to both PM and air toxics
- One two-stroke locomotive engine produces
  - PM emissions = 250-500 school buses
  - NOx emissions = 70-150 school buses
- MY 2007 school buses will be 90% cleaner than buses on the road today; locomotives will be contributing a larger share of diesel pollution, especially in urban areas

# Emission Control Strategies

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- **Reduce** idling using new technologies
- **Refuel** with LSD, ULSD, biodiesel, emulsified fuel, oxygenated diesel
- **Rebuild** older engines to new emissions standards
- **Repower** by replacing older engines with ones meeting Tier 2 (2005+) standards
- **Retrofit** with emission control technologies

# Business Benefits

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- Significant reductions in emissions and noise, which enhance community relations
- Significant reductions in fuel consumption; for instance, anti-idling technologies may:
  - Save 30-300 gallons of fuel per day
  - Save \$15,000-\$120,000 on fuel per year
  - Pay for themselves in 3-20 months



# Working with the Collaborative

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- Reducing diesel emissions is a top priority for the Northeast states, EPA Regions 1 and 2, and existing local partnerships (Greater Boston Breathes Better, Clean Air Communities, New England Asthma Regional Council)
- Private industry plays a vital role in Collaborative:
  - Partner in developing regional initiatives to reduce emissions
  - Partner on projects demonstrating new technology
  - Partner on outreach to industry on best practices, strategies, new technologies for reducing diesel emissions
- With a strategic regional approach, Collaborative can leverage both public and private funding and focus on areas with the greatest impact on public health

# Northeast Diesel Collaborative

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