



# Diesel Particulate Filters Grants, Retrofits, & 2010 Engine Standards

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# Topics

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- 1) Georgia School Bus Retrofit Program
  - a) What and Why?
  - b) Commitment to Retrofit Program
- 2) Funding Sources for Retrofits
  - a) CMAQ (Congestion Mitigation & Air Quality)
  - b) DERA (Diesel Emission Reduction Act)
- 3) 2010 Standards



# What is the Georgia School Bus Retrofit Program

- Voluntary Program to equip school buses with emission control devices to reduce Particulate Matter (smoke)
  - Diesel Particulate Filters
  - Diesel Oxidation Catalysts
  - Partial Flow Through Filters
  - Crank Case Filters
- Retrofit can also include:
  - Use of Cleaner Fuels
  - Engine Repower
  - Engine Rebuild
  - School Bus Replacement





# School Bus Retrofit Program

- 14 Georgia School Systems have retrofitted all or a portion of their fleet
  - Bartow Clayton Houston
  - Bibb Coweta Monroe
  - City of Atlanta DeKalb Muscogee
  - City of Marietta Floyd Newton
  - Clarke Henry
- Total of 982 buses have been retrofitted
- Funding Sources
  - EPA's Clean School Bus USA
  - Toyota's Clean Buses For Kids
  - Georgia Pacific SEP





# Why Retrofit School Buses

- Diesel contains 41 chemicals identified by the State of California as toxic air contaminants
- Over 90% of particulates are less than 1 micrometer in size
  - Decreased lung function
  - Enters blood stream and exacerbate heart conditions
- Children are more susceptible to health effect of diesel exhaust exhaust
  - Lung development
  - Narrower airways
  - Faster metabolism
- Effects on children
  - Decreased lung function
  - Increased risk of bronchitis and asthma



# School Bus Studies



- California Air Resources Board
  - Characterizing The Range of Children’s Pollutant Exposure During School Bus Commutes
  - <http://www.arb.ca.gov/research/schoolbus/schoolbus.htm>
- Environment and Human Health
  - Children’s Exposure to Diesel Exhaust on School Buses
  - [www.ehhi.org](http://www.ehhi.org)
- Southern Alliance For Clean Energy
  - A Safer Ride To School: How to Clean Up School Buses and Protect Our Children’s Health
  - <http://www.cleanenergy.org/resources/reports/SACE%20Diesel%20Report%20FINAL.pdf>
- Union of Concerned Scientist
  - Rolling Smokestacks: Cleaning Up America’s Trucks and Buses
  - [www.ucsusa.org](http://www.ucsusa.org)



# Commitment to Retrofit Program

- EPD is committed to assisting school systems in retrofitting school buses in Georgia
  - Funding Resources
  - Technical Guidance
  - Contact Information
- Focus on 2006 Model Year Engines and Older
  - Many 2004 – 2006 engines equipped with DOCs
    - Only maintains current PM standards – does not reduce particulates overall
    - Use of EGR in '04 – '06 engines increases particulates – DOCs are used to get PM back to standard (set in 1994)
    - Installing DPFs or Partial Flow Through filters will reduce PM
  - Usually do not retrofit buses used as spares or retired within 4 years



# Funding Sources for Retrofits

- Current and Near Future Funding Sources:
  - Supplemental Environmental Projects (SEPs)
    - Administered by EPD – Part of enforcement actions
    - Use anywhere in the state, normally in close proximity to the environmental violation
    - Current, Georgia Pacific – Approx. \$480K not obligated
  - Congestion Mitigation and Air Quality (CMAQ)
    - Administered through the Georgia Department of Transportation
    - Can only be used in nonattainment counties (sometimes in contiguous counties)
  - Diesel Emission Reduction Act
    - Administered by the U.S. Environmental Protection Agency and Diesel Collaboratives (i.e. Southeast Diesel Collaborative)



# Current CMAQ Retrofit Projects

## • School Bus Retrofit Project

- \$2 Million in federal funds: 2005 & 2006 FY
- Each project would require 20% match
  - Cash match
  - In-Kind
  - GRTA has provided \$40K in cash match
  - 2009 Appropriations Bill DOT Budget Line item 46.1.4
    - \$250,000 in matching funds
    - Governor has 40 days in which to act and has line item veto power
    - Becomes effective on July 1, 2008

## • General Retrofit Project

- \$3.35 million available from FY 2005 & 2006
- Retrofit any public fleet
- Requires 20% match



## 2007 PM<sub>2.5</sub> CMAQ Solicitation

- EPD submitted project for \$11.2 million in retrofits to be spread over FYs 2009 – 2012
  - No match is required for FY 2009 funds ~ \$5.4 million
  - 20% match will required for FYs 2010 – 2012
- Announcement of final project selection expected in June



# National Clean Diesel Program

(a.k.a. DERA)

\$49.2 Million for 2008

## National

\$34.4 Million (70%)



National Clean Diesel  
Funding Assistance Program \$27.6 M

Southeast Diesel Collaborative \$3.6  
million

Clean Diesel Emerging Technologies Program ~\$3.4 M

National Clean Diesel Finance Program ~\$3.4 M

EPD is working on a retrofit project for  
SEDC funds

School Systems can apply directly for  
National Funding Assistance

Applications are due by June 12th

## State

\$14.8 Million (30%)



State Clean Diesel Grant Program \$14.8 M

State Base  
\$9.8 million

Matching Bonus  
\$5 million

Each State will get \$196,000 if all apply  
Each state will receive another 50% if can  
match \$196K dollar for dollar

EPD has submitted intent to apply

Will use funds to retrofit school buses  
outside of nonattainment counties



# School Bus Retrofit Program

- Voluntary Program
- Appreciation to all of the school systems that have volunteered to retrofit their buses
- Must continue to have volunteers in order to keep the program voluntary
- EPD is discussing the establishment of annual retrofit goals
  - If goals are met, the program remains voluntary
  - If goals are not met, retrofits become mandatory



# Heavy Duty Engine Standards

## Beginning with 2007 Model Year

	2006	2007	2008	2009	2010	2011	2012
PM		100% at 0.01 g/hp-hr					
NOx		50% at 0.20 g/hp-hr			100% at 0.20 g/hp-hr		
Fuel		80% at 15 ppm maximum sulfur (under temporary compliance option)			100% at 15 ppm		

- Met 2007 PM Standards
- Reduced NOx to 1.2 g/bhp-hr (meeting 50% of 0.2 std)
- Manufacturers must meet 0.2 g/bhp-hr standard in 2010
- Manufacturers expect to meet standards with non-urea based catalyst systems



# Additional Information

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