

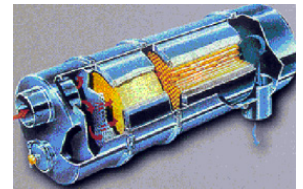
# FLEET MANAGER SOLUTIONS



## EMISSION CONTROL EQUIPMENT

### Diesel Particulate Filters (DPFs)

- Cost: \$5,000-\$9,000
- Benefits: reduces particulate matter by 60-90%
- DPFs need to be cleaned every 100,000 miles
- Lasts 7-15 years, most have a warranty of three years
- Must be used with ULSD fuel on engines built after 1994



### Diesel Oxidation Catalyst

- Cost: \$1,000-\$2,500
- Benefits: Reduces PM emissions by 20-30%
- Does not require special maintenance
- Lasts 7-15 years
- Can be used with regular diesel fuel, but most effective with ULSD



### Closed Crank Case Filter

- Cost: \$500-\$1000
- Benefits: eliminates 90%+ of in-cabin crank case emissions of fine particulate matter pollution
- Filter needs to be changed at every oil change or after 500 hours of operation (whichever is first)
- Lasts 5 years

## CLEANER ALTERNATIVE FUELS

### Ultra Low Sulfur Diesel

- Reduces PM by 10% with no other emission control equipment
- Will replace current diesel fuel in June 2006
- ULSD only allows 15 parts per million of pollution-causing sulfur compared to 500 ppm with regular diesel
- Can be used in new or old diesel engines with no cleaning of tank
- ULSD is available in Ohio
- Incremental cost is \$.10-.25 cents more per gallon, projected to level off at .04 cents per gallon by mid 2006

### Biodiesel

- B20 Reduces PM by 10%, B100 reduces PM by 40%
- B20 (20% pure Biodiesel/80% conventional diesel) can be used in any conventional diesel engine
- Typically \$.10 to .20 more per gallon than diesel
- No extra maintenance required
- Most tailpipe emissions reduced compared with conventional diesel with the exception of a slight increase of NOx
- Federal tax incentive may now cover the incremental cost

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# CLEANER ALTERNATIVE FUELS *(continued)*

## Compressed Natural Gas

- Reduces PM by 70-90% if using catalyst technology to reduce ultra fine PM
- Used only with new CNG Engines
- Costs \$30,000 more than a diesel bus (cost of fuel is 2/3 lower than diesel)
- Low maintenance compared with gasoline operated vehicles

## IDLING REDUCTION

### Anti-Idling Policy

Anti-Idling is a simple and cost-effective way to reduce emissions and protect student's health (as well as your own). Below are easy steps you can take to develop and implement an anti-idling policy:

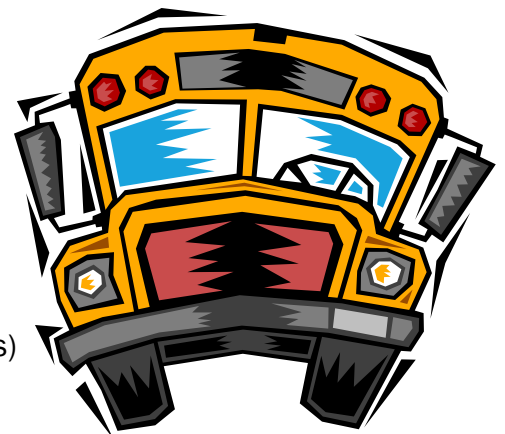
- Reduce idling by turning off engines stopped for more than a few minutes-saves money and lives
- Replace older buses with new, low-emission buses
- Position buses at school so tail pipes are not blowing directly towards another bus
- Position buses away from the school air intake vents
- Reward drivers for adhering to the policy
- Having a formal anti-idling policy can aid in securing funding

### Heaters

- Accelerates and maintains window defrosting and defogging
- Reduces emissions and eliminates idling
- Stops white smoke
- Extends the life of the engine
- Substantial fuel cost savings by reducing idling time
- Roughly \$1,000.00 to purchase
- Cut down on warm up time by preheating the engine

### Engine Plug-ins

- Reduces idling time by warming engine over night
- Saves fuel cost
- Reduces harmful emissions
- One person can plug in several buses
- Saved fuel translates into higher utility bill (weigh options)



Diesel emissions have been linked to asthma, lung and heart disease, cancer, and breathing ailments.