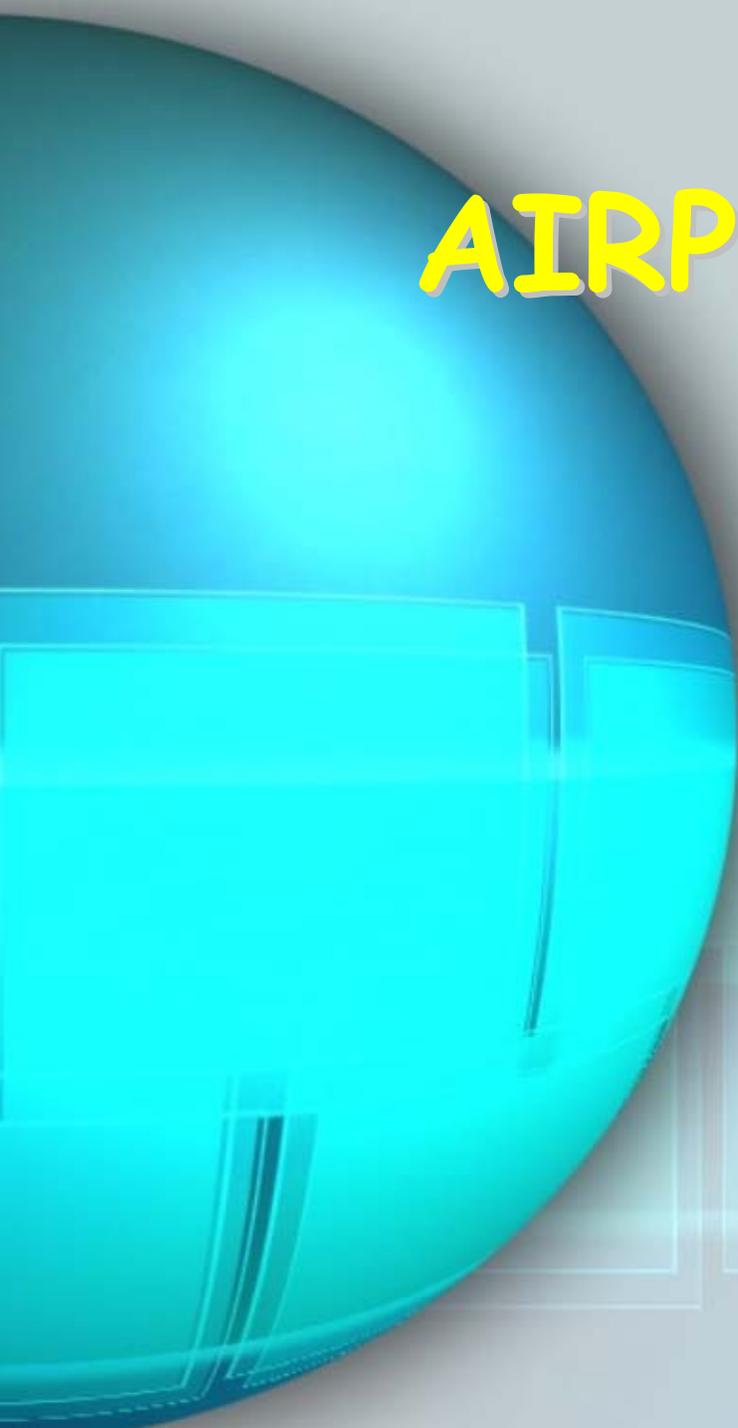


SALT LAKE CITY DEPARTMENT OF AIRPORTS

Cost Effective
Clean Air Commitment

SALT LAKE CITY INTERNATIONAL AIRPORT

- Large Hub Airport
- 24th Nationally in Passengers
 - 11,000,000 begin/end in SLC
 - 19,000,000 total



AIRPORT FLEET

380 Vehicles

- 141 Light duty
- 239 Heavy duty
 - * 45 Snow Removal and 21 towed brooms
 - * 16 Parking Shuttle Buses

95% Availability

Alternative Fuel Vehicle Commitment

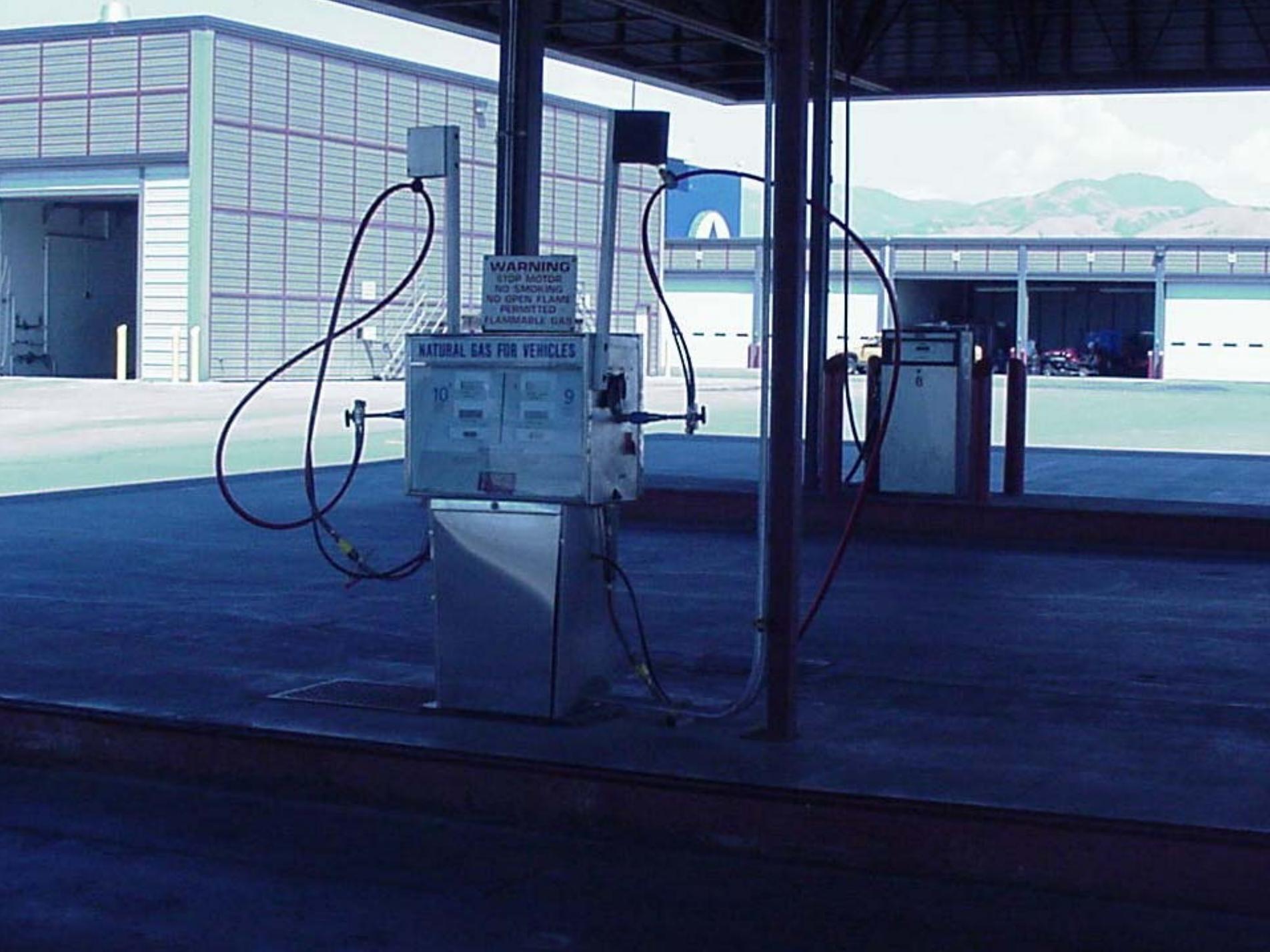
- 73 total Airport Fleet AFVs
- 20% of the total Airport Fleet runs on compressed natural gas (CNG)
- 52% of light duty vehicles CNG
- All $\frac{3}{4}$ ton and smaller vehicles to CNG
- 100% of parking shuttle buses (16) CNG

Airport Leadership AFV Commitment

"It is the policy of the Salt Lake City Department of Airports to reduce vehicle emissions through the use of alternative fuels. The Airport's alternative fuel of choice is natural gas.

...all Airport vehicles of $\frac{3}{4}$ ton and smaller will be converted to natural gas use."

SLCDA Policy Manual Order No. 10.07.100



WARNING
STOP MOTOR
NO SMOKING
NO OPEN FLAME
PERMITTED
FLAMMABLE GAS

NATURAL GAS FOR VEHICLES

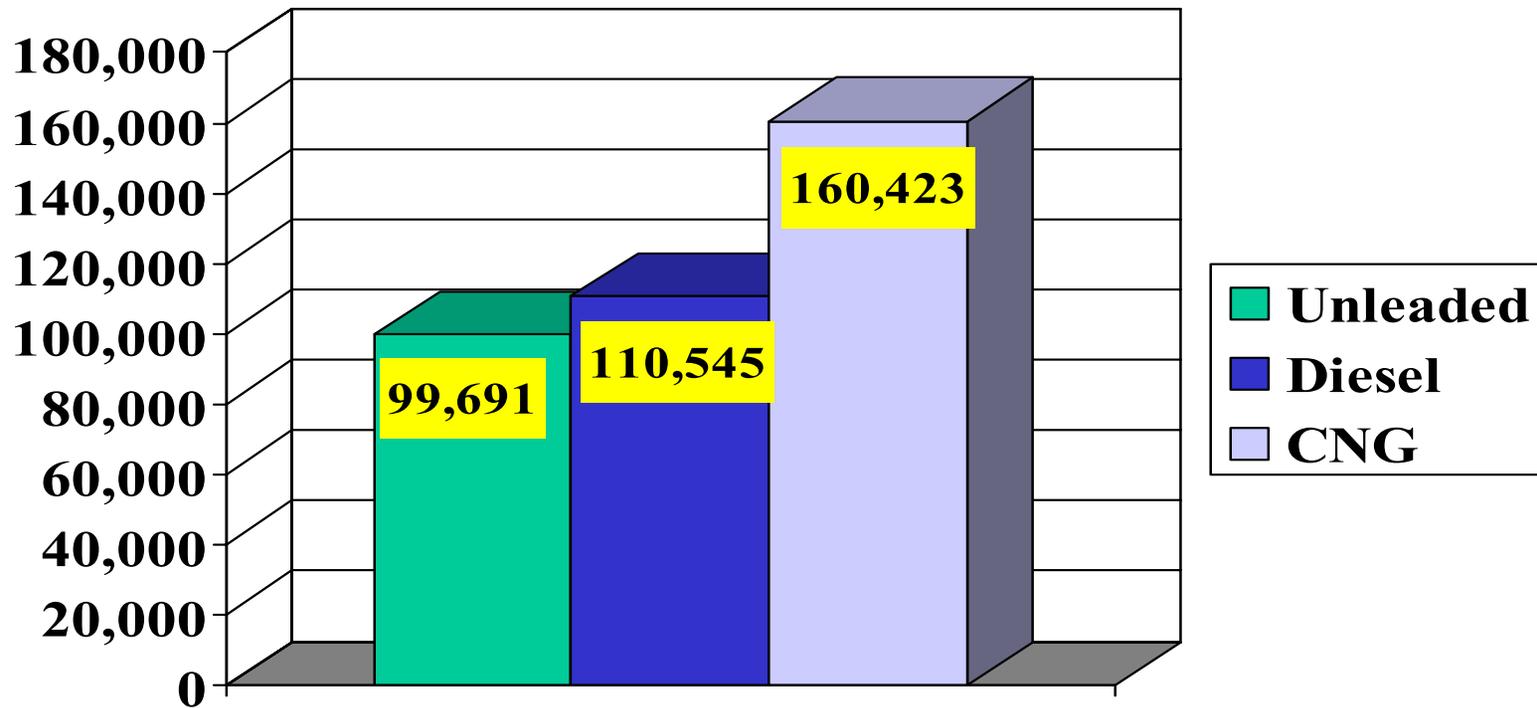
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6

SLCDA Fleet 2002 Fuel Use

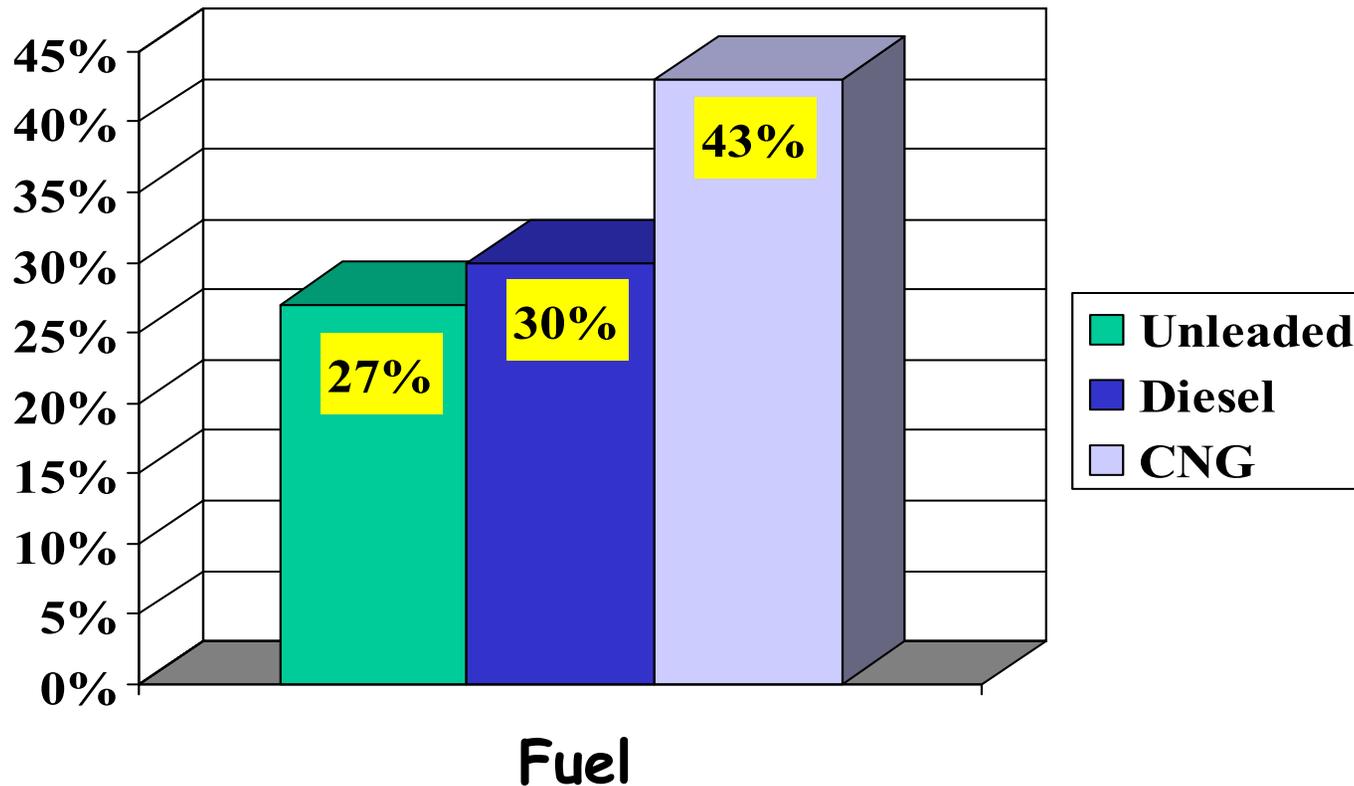
2002 SLCDA Fleet Fuel Consumption



Total Fuel 370,659 gallons

SLCDA Fleet 2002 Fuel Use

2002 SLCDA Fleet Fuel Consumption



Yearly CNG Fuel Related Savings

- Fuel \$50,000
- Oil Servicing \$10,000

Total for 2001 \$60,000

CNG Vehicle Conversion Problems



Bi-fuelers



Mechanic Certification



Dynamometer



Employee perceptions

On-Airport CNG Fueling

- North Facility
 - fuel is in a secure area
 - shuttle bus travel/refuel time was excessive
- South Facility
 - easy access, not in a secure area
 - plumbed for airside access
 - plumbed for propane
 - accessible to Ground Transportation Providers and the General Public

CNG Fuel Use Requirements

- 70% minimum CNG use on bi-fuelers
- Airport Fuel Force System employed to enforce minimum CNG use

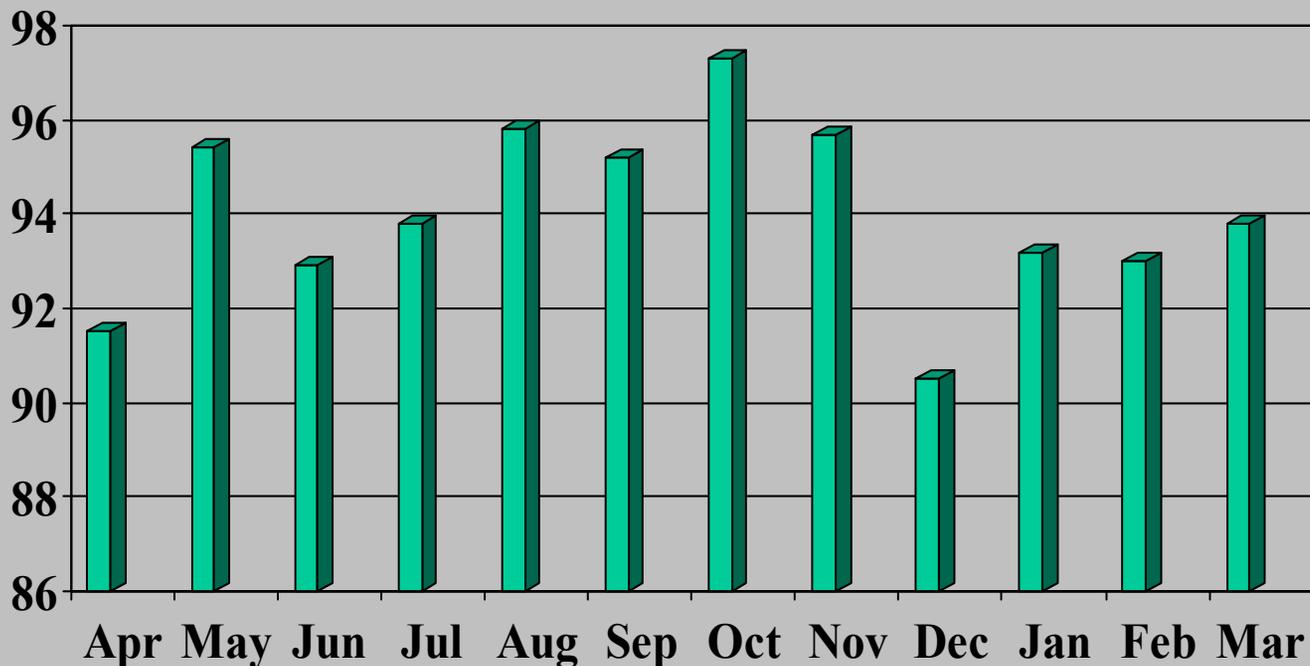


Shuttle Bus Engines

- Hercules vs. Cummins
- Partnership with Cummins
- In-house conversion to Cummins
- Test bed
- Availability

Shuttle Bus Availability

Percentage Bus Availability 4/00-3/01





CNG Related Emissions Avoidance

17,498 lbs. of airborne particulate
avoided with clean burning CNG

- 8.75 tons in 2001

Alternative Fuel Vehicle Upgrades

DOE Grant for Heavy Duty Vehicles

- 'Re-power' two bobtail dump trucks, \$55,000 per engine
- New CNG powered replacement garbage truck, \$60,000 incremental cost
- CNG powered ramp/street sweepers...



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SALT LAKE CITY

39558

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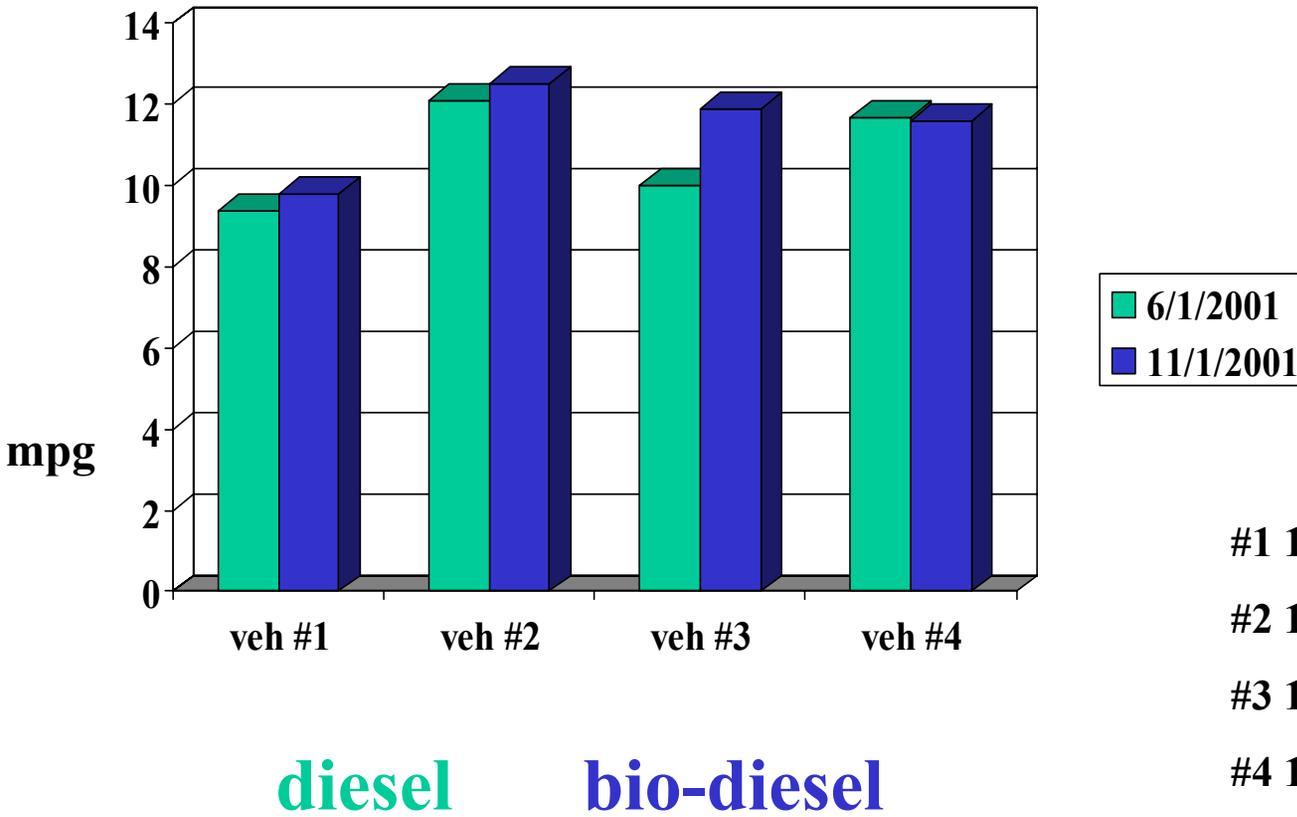






Bio-diesel

SLCDA Fleet Diesel vs Bio-diesel Mileage Comparisons



10.8 mpg average

+0.65 mpg increase

6% increase in mileage

#1 1996 Wrecker; 44,000 mi

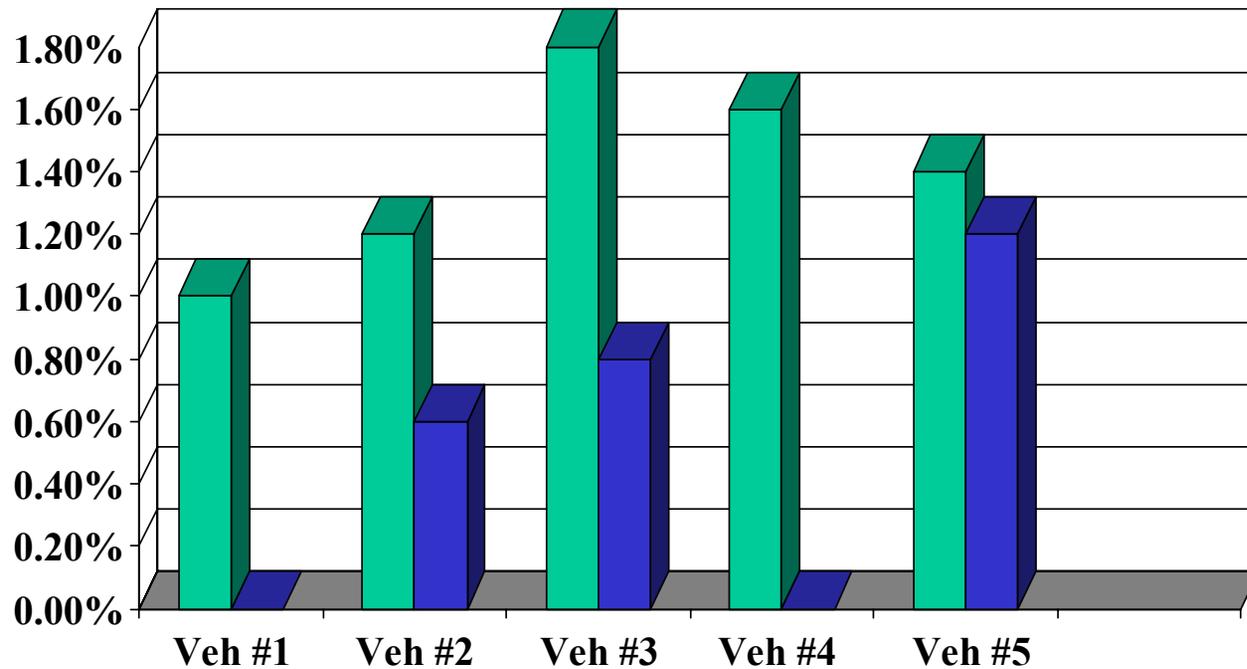
#2 1998 Suburban; 65,000 mi

#3 1999 Suburban; 62,000 mi

#4 1996 1 T Pickup; 77,000 mi

SLCDA Fleet Diesel vs Bio-diesel Stack Opacity Comparisons 30% hp @ 50 mph

30% Max Allowed



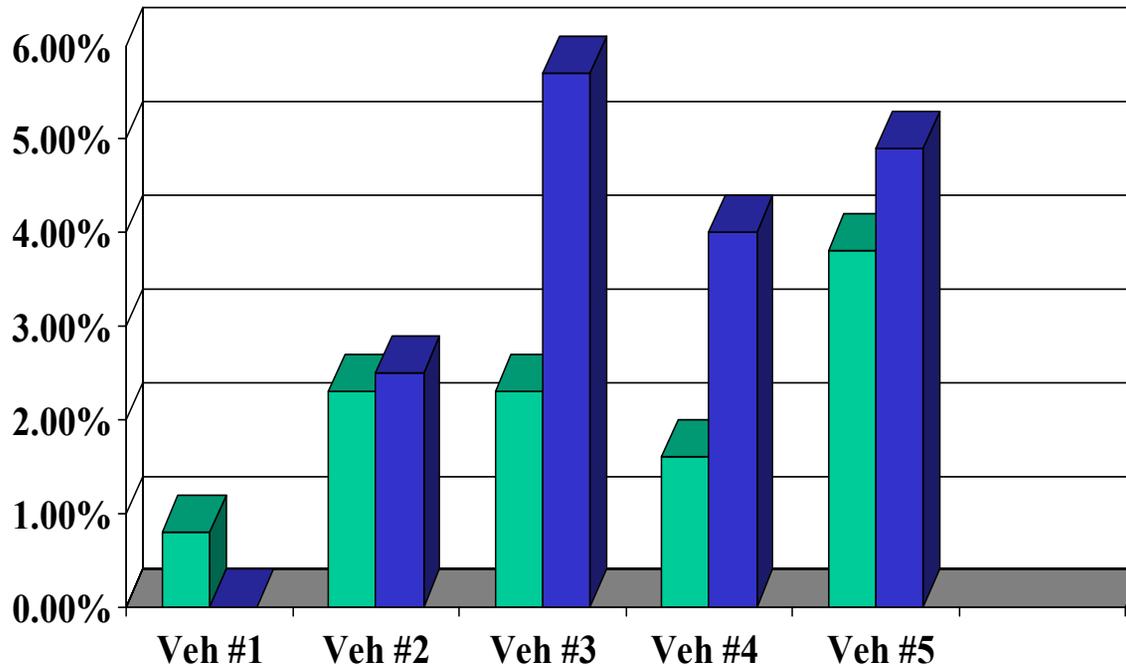
- #1 1996 Wrecker; 44,000 mi
- #2 1998 Suburban; 65,000 mi
- #3 1999 Suburban; 62,000 mi
- #4 1996 1 T Pickup; 77,000 mi
- #5 1997 Tahoe; 66,000 mi

6/1/2001

11/1/2001

SLCDA Fleet Diesel vs Bio-diesel Stack Opacity Comparisons 100% hp @ 50 mph

30% Max Allowed



- #1 1996 Wrecker; 44,000 mi
- #2 1998 Suburban; 65,000 mi
- #3 1999 Suburban; 62,000 mi
- #4 1996 1 T Pickup; 77,000 mi
- #5 1997 Tahoe; 66,000 mi

6/1/2001

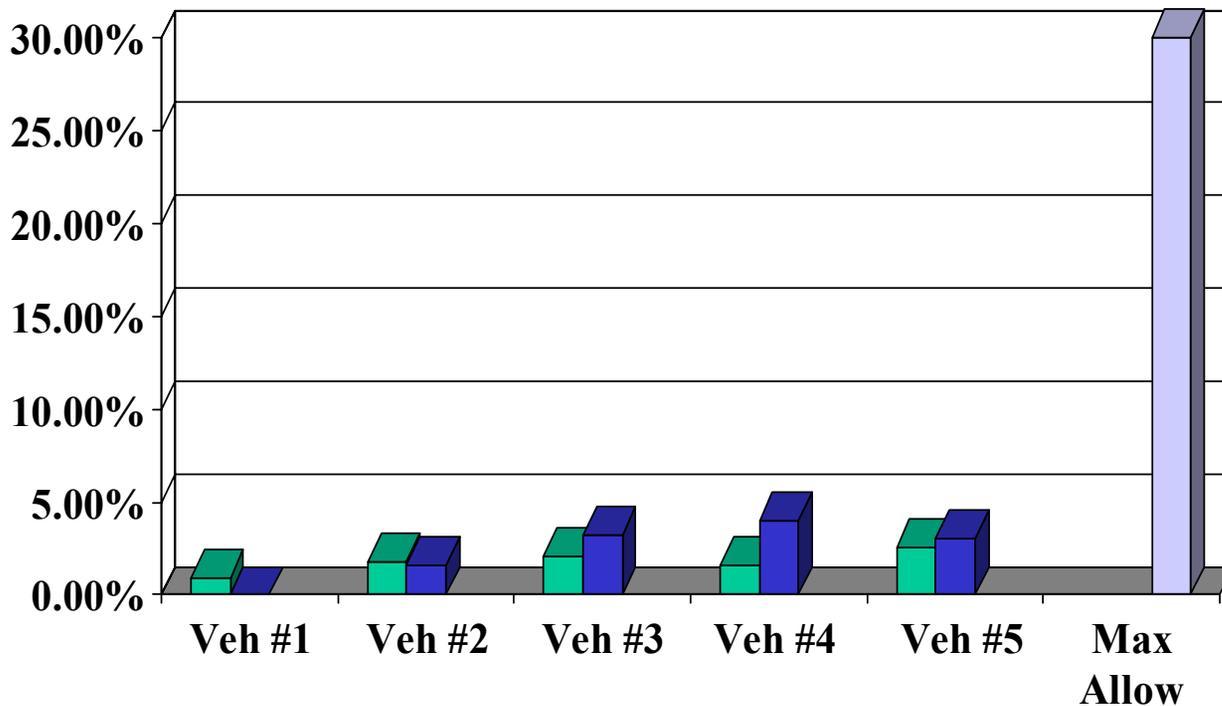
11/1/2001

SLCDA Fleet

Diesel vs Bio-diesel

Averaged Stack Opacity Comparisons

30% hp @ 50 mph and 100% hp @ 50 mph



- #1 1996 Suburban; 44,000 mi
- #2 1998 Suburban; 65,000 mi
- #3 1999 Suburban; 62,000 mi
- #4 1996 Pickup; 77,000 mi
- #5 1997 Tahoe; 66,000 mi

6/1/2001

11/1/2001

Stack Opacity Comparisons At 30% hp and 50 mph

	6/1/2001	11/1/2001
1996 GMC Wrecker	1.0%	0%
1998 Suburban	1.2%	0.6%
1999 Suburban	1.8%	0.8%
1996 Chevrolet 1 Ton Pickup	1.6%	0%
1997 Tahoe	1.4%	1.2%

Stack Opacity Comparisons At 100% hp and 50 mph

	6/1/2001	11/1/2001
1996 GMC Wrecker	0.8%	0%
1998 Suburban	2.3%	2.5%
1999 Suburban	2.3%	5.7%
1996 Chevrolet 1 Ton pickup	1.6%	4.0%
1997 Tahoe	3.8%	4.9%

SLCDA Fleet Diesel vs Bio-diesel Mileage Comparisons

	Diesel 6/1/2001	Bio-diesel 11/1/2001	Change in MPG
Vehicle #1	9.4	9.8	+0.4
Vehicle #2	12.1	12.5	+0.4
Vehicle #3	10.0	11.9	+1.9
Vehicle #4	11.7	11.6	-0.1

Just The Facts...

- ✓ *Cost Effective*
- ✓ *Dependable*
- ✓ *Energy Secure*
- ✓ *Fuel Plentiful & Available*
- ✓ *Good for the Environment*

Questions ?