



SunLine



**SunLine Transit Agency's
Alternate Fuels Experience**

presented to
DOE Energy 2002 Conference

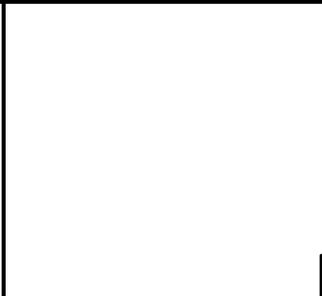


SunLine *Today's Model For Tomorrow's World*





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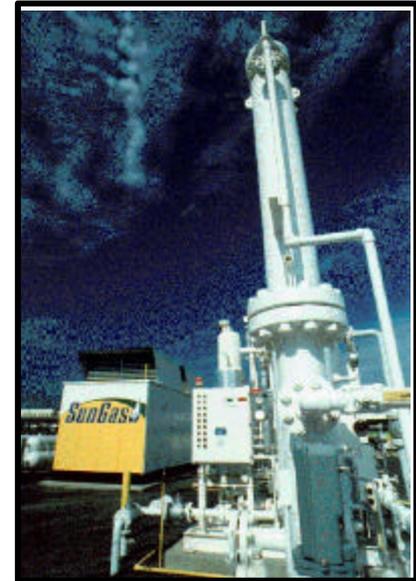


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SUCSESSES: Fleets Now Running on Alternate Fuels



FLEET COMPOSITION

◆ Buses

- 34 Orion 40-foot, CNG
- 7 Thomas 40-foot, CNG
- 5 EIDorado 29-foot, CNG
- 1 1985 Gillig 40-foot bus (Bookmobile), CNG
- 1 1982 Gillig 40-foot, diesel (Riverside County Communications Unit)
- 2 Nova 40-foot, Hythane
- 4 Tractor trailers (SunLink), LNG
- 3 SVMC* 22-foot trolleys, electric

◆ Paratransit Vehicles

- 9 Ford Cutaways, CNG
- 4 Dodge Vans, CNG
- 13 Ford Vans, CNG

◆ Misc Non Revenue

- 15 Light Duty, CNG
- 20 Medium Duty, CNG

* Specialty Vehicle Manufacturing Company





Three Year Comparison of Natural Gas and Diesel Transit Buses

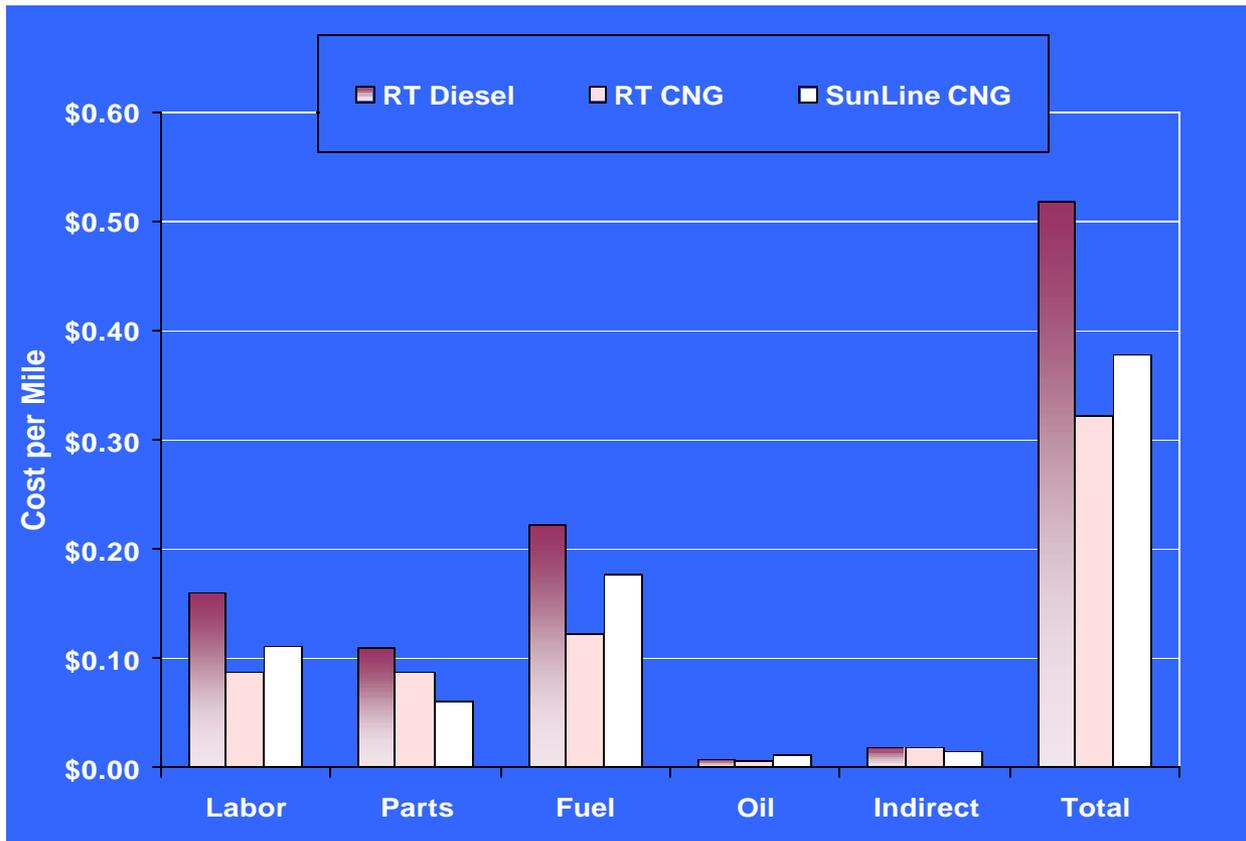
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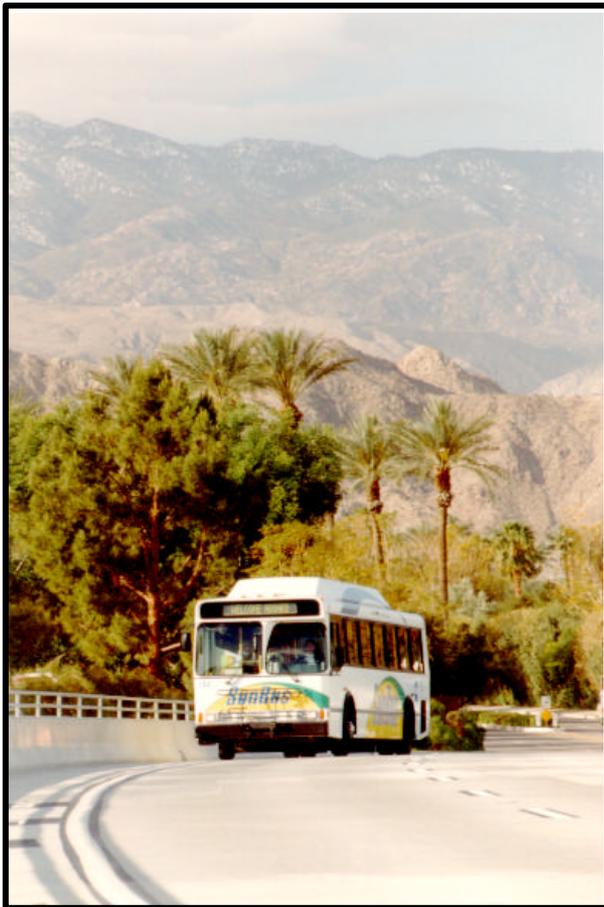
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FY 1997 CNG vs Diesel Cost Per Mile





† **TRANSIT INDUSTRY
ROAD CALL AVERAGE:
4,000 miles**

† **SUNLINE AVERAGE
AFTER SEVEN YEARS:
12,000 miles**



Payback of Incremental Costs

TABLE 6. PAYBACK OF INCREMENTAL COSTS

	Number of Buses	Incremental Cost per Bus	Savings per Year	per Mile	Payback* in Years	Miles per Bus
RT	136	\$ 50,000	\$1,122,900	\$ 0.197	6.1	253,807
SunLine	34	\$ 50,000	\$ 213,000	\$ 0.142	8.0	352,113

* FTA guideline for the planned replacement life of a bus is 12 years or 500,000 miles.



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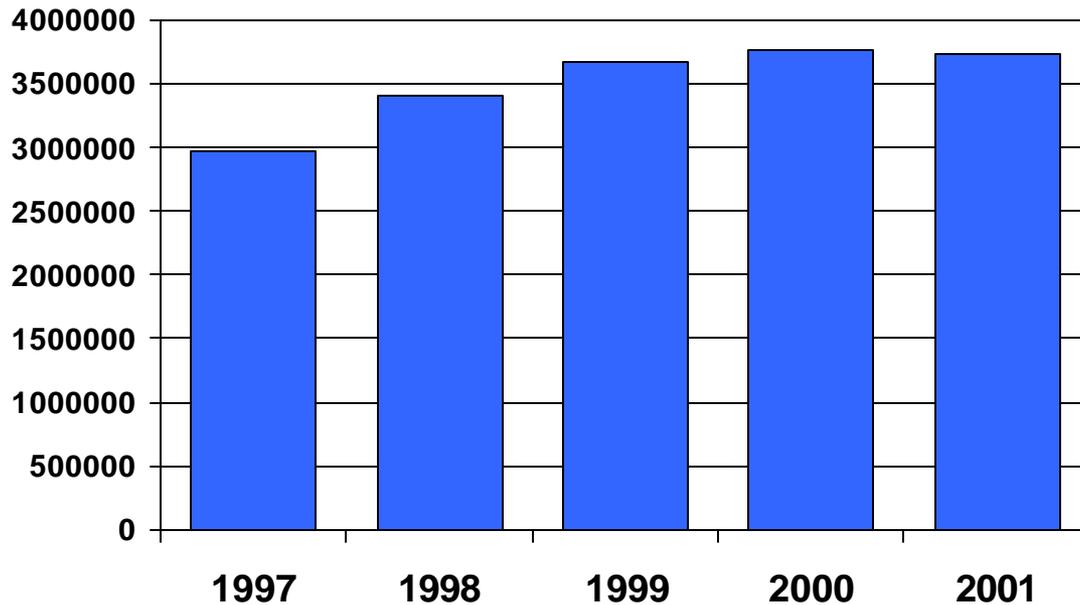


**The more vehicles that use the infrastructure,
the lower its cost per vehicle and per mile.**

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Fixed Route Ridership



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EDUCATIONAL COLLABORATION

- † **Advanced Transportation Technologies Initiative (ATTI)**
- † **College of the Desert - Energy Technology Training Center**
- † **Department of Environment / Urban Consortium Energy Task Force**
- † **Georgetown University**
- † **Humboldt State University - Schatz Energy Research Center**
- † **National Science Foundation**
- † **University of California - Riverside, CE-CERT**

GOVERNMENT COOPERATION

- † **California Air Resources Board**
- † **California Energy Commission**
- † **City of Palm Desert**
- † **Coachella Valley Association of Governments**
- † **Federal Transit Administration**
- † **Imperial Irrigation District**
- † **Palm Springs International Airport**
- † **South Coast Air Quality Management District**
- † **U.S. Department of Defense**
- † **U.S. Department of Energy**



INDUSTRY COLLABORATION

- ◆ Air Products
- ◆ Allison Transmission
- ◆ American Public Transportation Association
- ◆ Ballard (formerly XCELLSIS)
- ◆ California Fuel Cell Partnership
- ◆ California Hydrogen Business Council
- ◆ California Natural Gas Vehicle Coalition
- ◆ California Transit Association
- ◆ Clean Air Now
- ◆ Coachella Valley Economic Partnership
- ◆ Cummins Engine Company
- ◆ DCH Technology
- ◆ Detroit Diesel
- ◆ Dynetek
- ◆ Engelhard Corp.
- ◆ ENRG (formerly Pickens Fuel Corp.)
- ◆ Federal Mogul
- ◆ FIBA Technologies
- ◆ Fueling Technologies

INDUSTRY COLLABORATION

- ◆ **Gaz de France**
- ◆ **HbT**
- ◆ **Hydrogen Components, Inc.**
- ◆ **ISE Research**
- ◆ **John Deere**
- ◆ **National Hydrogen Association**
- ◆ **Natural Gas Vehicle Coalition**
- ◆ **Orion Industries, Ltd.**
- ◆ **Quantum Technologies**
- ◆ **QuestAir**
- ◆ **Shell Hydrogen**
- ◆ **Southern California Gas Co.**
- ◆ **Southwest Research Institute**
- ◆ **Stuart Energy**
- ◆ **Teledyne Energy Systems**
- ◆ **Thunderpower LLC**
- ◆ **TotalFinaElf**
- ◆ **UOP**
- ◆ **UTC Fuel Cells**
- ◆ **Wintec**

THANK YOU

Questions?

