

# Transportation

- Travel Programs
- Increased Efficiency
- New Fuels

# Better World Travelers Club

- A Green AAA – same price.
- National auto club with strong environmental commitment
- Emergency roadside assistance, travel guidance, insurance
- Eco-tour and EV Rental discounts, and on hybrid/electric auto purchases
- Offers bike roadside assistance
- [www.betterworldclub.com](http://www.betterworldclub.com)

# Off-setting Travel

- Trees for Travel is an organization that will plant trees to offset the pollutants caused by air and vehicle travel.
- Voucher System - The new Mass Transit Voucher System requires government agencies to pay up to \$65/month to cover the costs of employees who take mass transit or van pools to work.



# EV Rentals

- Hybrid Electric cars available for rental
  - Honda Insight, Civic Hybrid, Toyota Prius, GM EV1
- Located in:
  - California
  - Arizona
  - Pennsylvania
  - Washington, D.C.



The Nation's Only Environmental Rental Car Company

# Ultra Efficient Engine – “Archer-Trice” Engine

- Combines pulses similar to jet engines
- Looks like a propeller in a donut
- 40% efficiency
- New rotary engine

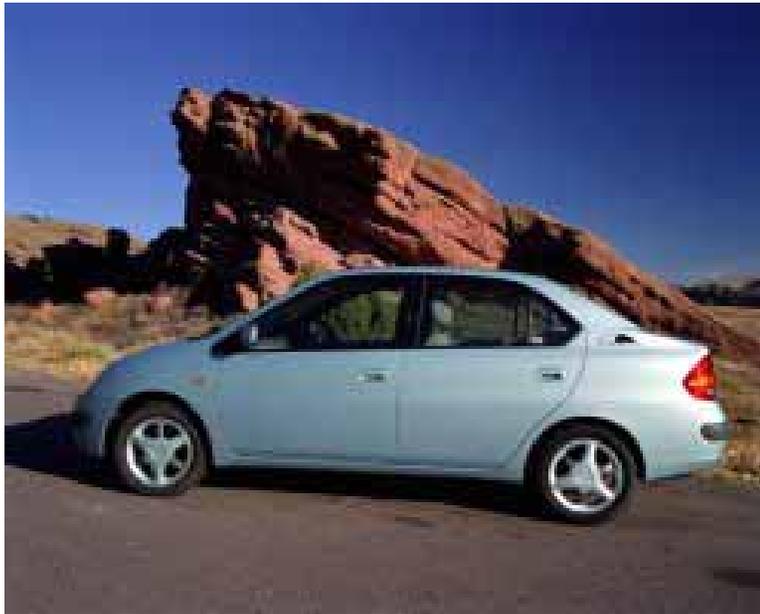


# Pulse Detonation Engines

- Detonates fuel mixture, versus deflagration
- Increased pressure = increased thrust  
= increased efficiency
- Same Idea as Archer-Trice, but more advanced/hypothetical

# Hybrid Vehicles

Gasoline-electric hybrid vehicles get double the gas mileage and reduce air emissions by 40%  
- on sale now at dealers in Japan, Europe, and America



The hybrid market is expected to increase to 500,000 vehicles sold by 2005.

*A Blueprint for  
Saving Lives, Money  
and Gasoline*



# UCS Guardian

- Modified Ford Explorer with on-the-shelf technologies
- 71% increased fuel efficiency and better safety features – to 36.3MPG
- If implemented over the next 5 years, could save 800,000 barrels of oil
- Prevent 2900 auto-related fatalities

# New Fuels

Scott Air Force Base is scheduled to use Bio-based diesel fuel blends in 270 vehicles. Bio-based diesel fuel is:

- Composed of soy and other oils and can be blended with petroleum diesel.
  - Reduces carcinogenic releases by 75-90%.
  - Requires no vehicle modifications.
  - Is bio-degradable and sulfur free.
- 
- The City of Berkeley, CA completed its 100% biodiesel commitment for all municipal diesel vehicles.



Lollapalooza in Kansas City, MO

# Alternative-fueled Vehicles



- Currently 24% of the administrative Vehicles at Fort Carson are AFV's
- Alternative Fuels: Natural gas, propane, electric, hybrid gas-electric
- America's fastest growing alternative fuel is bio-diesel. Reduces emissions by 80 to 90 percent.

# Fuel Cell Vehicles

## NEWS FLASH!

Public Hydrogen Fueling  
Stations

4/04 – Iceland

7/03 – Tokyo, Japan

'04 – Washington, D.C.



Honda FCX was the  
first FCV to receive  
US road certification

Noiseless, with a  
range of 170 miles

New metal  
combination has  
been found – could  
substantially reduce  
the cost of FCV.

# Air-Powered Vehicles

- Lightweight automobile body with a new small rear-mounted engine
- Best for urban, localized fleets
- Super efficient energy consumption
- Minimum pollution-zero emissions
- Costs between \$10-14K
- Runs at 55mph



# The Hypercar

- Concept design put in public domain by Rocky Mountain Institute in early 90s
- 70-80% fuel savings - and reduced air emissions
- Conventional fuel or fuel cells
- Major automakers have spent roughly \$5B to develop prototypes
- The race is on!

Photo courtesy of The Hypercar Center/  
Rocky Mountain Institute



# Private Fleets

- UPS/DaimlerChrysler/EPA Partnership
- Beginning in 2003
- First commercial fuel cell fleet in North America
- “rolling laboratories”



# Not only in Harry Potter – Flying Cars



- Extensive research done by US Army, US Navy, and NASA
- Uses GPS system and highly integrated computerized system – essentially unmanned
- Expected to be fully functional prototype by 2015.