



# NHTS BRIEF

April 2008

National Household Travel Survey

## Energy Use and Fuel Efficiency

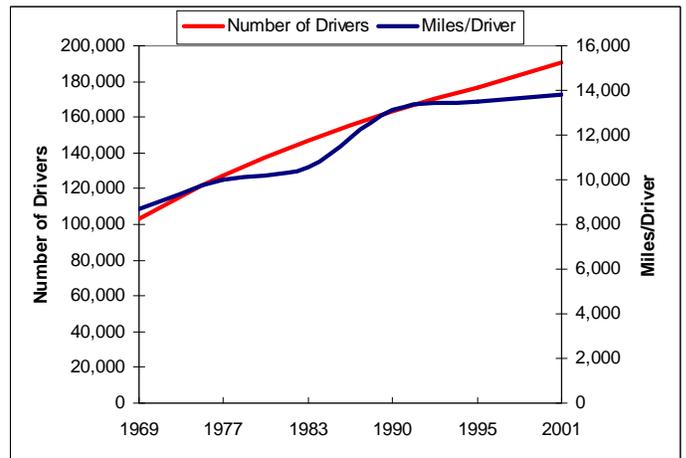
Transportation uses a majority of the petroleum consumed in the U.S. According to the Energy Information Agency (EIA), currently transportation accounts for 60 percent of U.S. oil demand.

A number of factors affect fuel consumption in the U.S., such as total driving population and annual vehicle miles of travel per driver. According the National Household Travel Survey (NHTS) data series, both of these have nearly doubled since 1969 (see Exhibit 1).

Other factors, such as the fleet mix (varying proportion of cars, vans, and SUVs), the fuel efficiency of vehicles, and the level of use of these vehicles, affect total fuel consumption. Fuel efficiency standards are based on the fleet average of all the vehicle types that is sold. However, these standards do not take into account the amount of use for each vehicle type. For example, although more cars are sold than other vehicle types, on average cars are driven fewer miles per year than pick-ups, vans, and SUVs (see Exhibit 2).

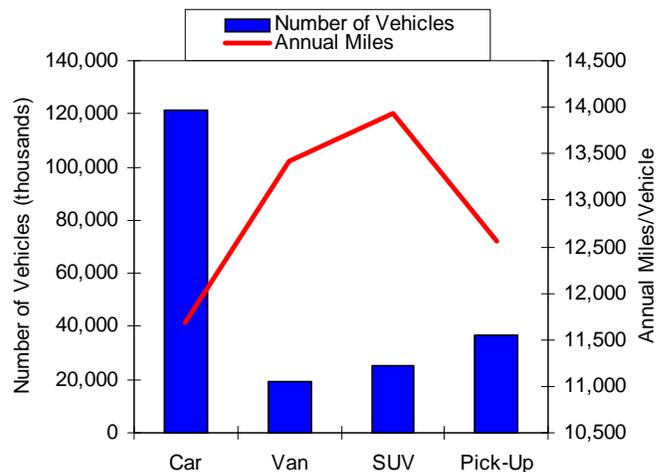
Fuel economy standards for vehicles were first set in 1975 when Congress set a 1985 goal to double the mpg rating for passenger cars to 27.5 mpg. Passenger car fuel economy peaked in 1987 at 26.2 mpg. The Energy Independence and Security Act of 2007 requires, in part, that automakers boost fleet wide gas mileage to 35 mpg by the year 2020. This requirement applies to all passenger automobiles, including "light trucks."

**Exhibit 1 – Number of Drivers and Miles per Driver, 1969 to 2001**



Source: NHTS Data Series

**Exhibit 2 – Number of Vehicles and Average Annual Miles by Type of Vehicle, 2001**



Source: 2001 NHTS

Overall fuel economy for both cars and light trucks in the U.S. market reached its highest level in 1987, when manufacturers averaged 26.2 mpg. The average in 2004 was 24.6 mpg\* (see Exhibit 3). In that time, vehicles increased in size from an average of 3,220 pounds to 4,066 lb, in part due to an increase in truck ownership during that time from 28% to 53%.

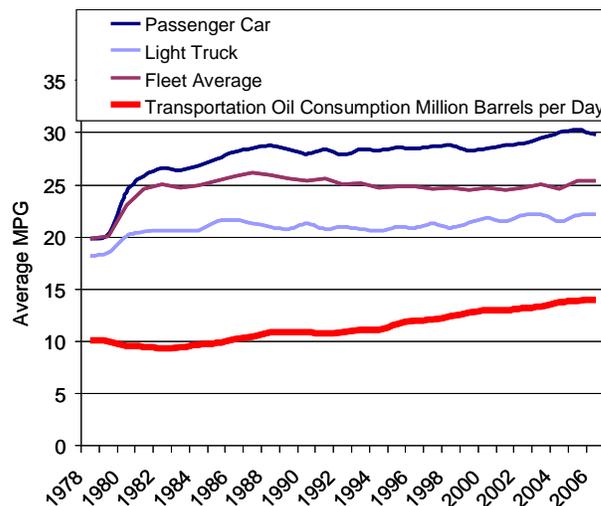
Beginning with 2008 models, fuel economy estimates will be based on new test methods, which EPA finalized in December 2006. The new methods account for more realistic driving conditions that can lower fuel economy, such as high speed, rapid acceleration, use of air conditioning, cold temperature operation, and a host of other parameters and conditions.

Due to the new methods, the estimates for most 2008 models will likely be lower than their 2007 counterparts. However, fuel economy of the U.S. fleet will continue to be estimated based on sales.

Nevertheless, the fleet mix is changing. Hybrid, hybrid electric, sweet diesel vehicles, and other alternative fuel vehicles are becoming a growing part of the fleet mix. How fast these changes influence fuel consumption in the U.S. is dependent upon the timeliness of adoption by the American public. Average length of car ownership is an important variable in the adoption rate and the public may need additional incentives to move to more energy friendly modes of travel. According to the NHTS, people are keeping their vehicles longer. The average vehicle was nearly 9 years old in 2001 (see Exhibit 4).

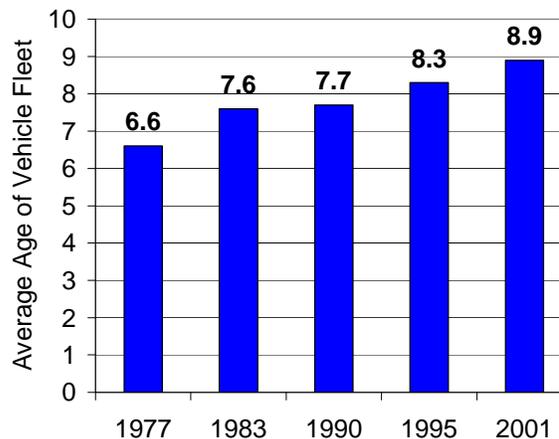
More current data on the mix of vehicles and their daily use is necessary in order to assess the impact of new fuel efficiency standards on household transportation fuel consumption. This information is being collected in the 2008 National Household Travel Survey.

### Exhibit 3 – Fuel Efficiency and Oil Consumption



Source: Light-Duty Automotive Technology and Fuel Economy Trends: 1995 through 2007, Compliance and Innovative Strategies Division and Transportation and Climate Division, Office of Transportation and Air Quality, U.S. Environmental Protection Agency,

### Exhibit 4 – Average Age of the US Passenger Vehicle Fleet



Source: NHTS Data Series

**Data and Publications at your fingertips:**

**Website:** <http://nhts.ornl.gov>

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