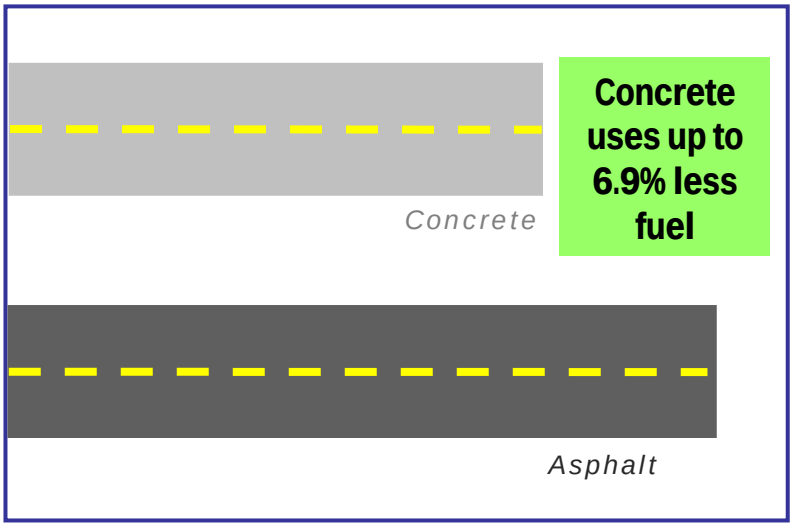
For the Long Haul

Trucks require less fuel to drive on concrete roadways than on asphalt roadways. The difference is in their rigidity and strength…

Trucks deflect asphalt pavements more than concrete pavements.
Why is this important?
Because a deflected pavement absorbs energy that otherwise is used to propel the vehicle forward, and it requires more fuel to go the same distance.

Pavement deflection causes energy to be absorbed … and more fuel to be used.

Truck Fuel Consumption Per Mile



The rigid surface undergoes negligible deflection … no wasted energy means no wasted fuel.

How much fuel can concrete pavement save?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The National Research Council of Canada recently completed a study on fuel efficiency of commercial trucks on both asphalt and concrete pavements.

Up to 6.9%

The study demonstrated a statistically significant fuel savings for semi-tractor trailers (18 wheelers) on concrete versus asphalt pavements. The net result? Trucks traveling on concrete pavements use between 0.8% to 6.9% less fuel.

Reducing U.S. Dependence on Foreign Oil...

The National Highway System is the primary system for the delivery of goods by truck in the U.S. Some 80% of U.S. communities can be accessed only by truck for deliveries. The system presently consists of approximately 160,000 lineal miles of pavement, 59% of which has an asphalt surface. If these surfaces were all made of concrete, it would reduce our dependence on foreign oil by increasing truck fuel efficiency ,and decreasing the costs associated with transporting goods.

Less Fuel Consumption = Lower Shipping Costs

$6.3 BILLION
Diesel Fuel Cost Savings per Year at the Pump

2.1 BILLION
Gallons of Diesel Fuel Saved per Year at the Pump

If concrete were on 100% of the National Highway System

15 MILLION
Tons of carbon dioxide (CO_2) reduced per year

170,000
Tons of nitrous oxide (NO_x) reduced per year

Less Fuel Consumption = Lower Emissions

References:

1. Smith, Tim, “Truck Fuel Savings – What Does it Mean for YOU?”, Cement Association of Canada, December 2, 2005.
2. “Federal-Aid Highway Length – 2004 – Miles By Type of Surface”, FHWA, HM31, October 2005.
3. “Table 1-11 Number of U.S. Aircraft, Vehicles, Vessels, and Other Conveyances”, Bureau of Transportation Statistics, US Department of Transportation, http://www.bts.gov/publications/national_transportation_statistics/2002/html/table_01_11.html

Assumptions: Total Asphalt Distance= 94,267miles; Truck Mileage = 15 mpg on Concrete, 14.2 mpg on Asphalt; Truck Travel = 94,267 miles/year/truck (underestimate); Total Number of Trucks in US = 5,926,030; Fuel = $3/gallon

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