

## Minnesota's Motorization Trends Reshape Roadway Funding

Vehicles, how we power them, and driver behavior are all changing. This is forcing federal, state, and local governments to adapt to maintain our roads. In a report from the TPEC Program, researchers analyzed Minnesota's motorization trends from 1980 to 2016.

The researchers found that Minnesotans are driving less and buying more fuel-efficient vehicles than they used to. This impacts road maintenance and construction because federal and state gasoline taxes are a major source of funding.

In addition, gas taxes have not kept pace with inflation. The federal fuel tax was last raised in 1993, and Minnesota has increased the state's gas tax only once since then, in 2009.

Add on the rise of hybrid and electric vehicles, and the report's authors say policymakers should start looking for more options to fund roads. In Minnesota, this process has already begun, with the motor vehicle sales tax and the motor vehicle registration tax making up an increasing share of revenues in recent years.

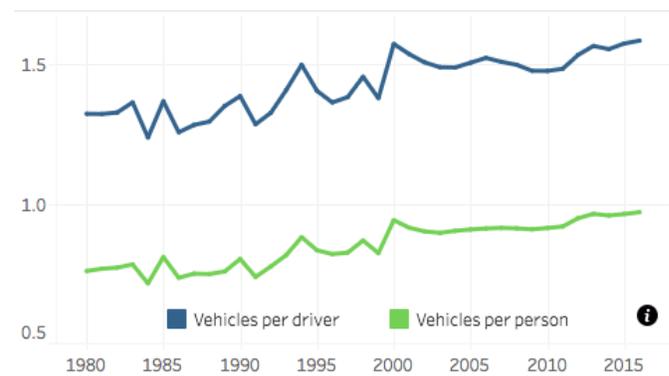
"The trend is likely to continue, even with some increase of fuel tax rates," explains Jerry Zhirong Zhao, principal investigator for the study. "We need to think outside the box to search for a sustainable way to fund future transportation."

### DRIVING LESS

The number of registered vehicles in Minnesota almost doubled between 1980 and 2016, from 3 million to 5.4 million vehicles, and Minnesotans traveled more than twice as far, accounting for 60 billion miles in 2016.

However, when taking population growth into account, both measures have turned downward in recent years. Since 2000, the number of vehicles per driver and per person declined despite an overall increase in vehicle registrations, and the number of miles traveled per person and per vehicle dropped significantly in the 2000s. Vehicle-miles traveled ticked back up in 2016, but the report's authors say it is unlikely that the growth rate of vehicle ownership will return to pre-2000 levels.

"There is evidence the rapid increase in motorization that occurred over several decades until the 2000s has ended," Zhao concludes.



Vehicles per person and driver

## INCREASING FUEL EFFICIENCY

Fuel use in the state follows a similar pattern. Fuel consumption in Minnesota has increased since 1980, but most of this growth came before 2000. Fuel consumption per driver and per vehicle has declined 10 and 11 percent respectively since 2000 due to increased fuel efficiency and decreased vehicle-miles traveled. Federal fuel efficiency standards and the adoption of new sources of power are the leading causes of increased fuel efficiency.

The types of fuel used have also changed. In 1980, gasoline accounted for 90 percent of fuel use in the state. Today, gasoline accounts for around three-fourths of fuel use, as the use of diesel fuel and liquefied petroleum gases has grown.

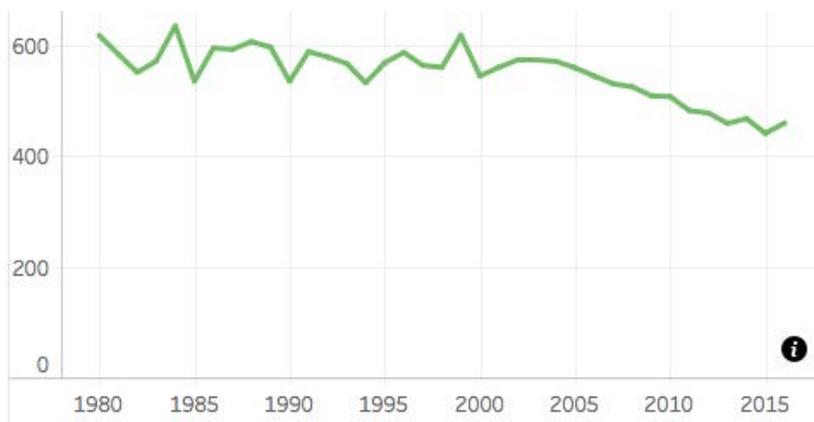
“Fuel consumption is particularly important,” Zhao says. “If fuel consumption decreases, transportation revenues decrease, too.”

## LOOKING AHEAD

Increased vehicle fuel efficiency and the adoption of hybrid and electric vehicles are trends that are likely to continue. In 2012, the Congressional Budget Office estimated that implementing the Obama administration’s federal fuel efficiency standards would cause gasoline tax revenues to fall by 21 percent by 2040. And while there are currently only around one million electric vehicles on U.S. roads, that number is projected to grow to more than 18 million by 2030.

Vehicle and ride-sharing, better public transportation options, and the prospect of automated vehicles could also speed up younger generations’ transition away from vehicle ownership.

According to the report, half of Minnesota’s roadway funding currently comes from the state fuel tax, the motor vehicle sales tax, and the motor vehicle registration tax. States are exploring several options to offset decreased fuel tax revenue, including raising the gas tax, tying the gas tax rate to the price of gasoline, tying the gas tax to inflation, taxing miles traveled instead of gallons of gas consumed, and finding different sources of revenue.



Gas consumption per vehicle

## FOR MORE INFORMATION AND ADDITIONAL ANALYSES

TPEC welcomes public engagement and encourages you to contact us with your questions, comments, and research needs.

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