In 2006 and 2007 the State of Oregon conducted a groundbreaking mileage fee pilot program where participating drivers paid a per-mile fee instead of the state gas tax. The program responded to nation-wide concerns that, over time, fuel taxes will cease to serve as a stable transportation revenue source because a large portion of the U.S. vehicle fleet will transition to running on little or no petroleum-based fuel.

This study analyzed data from the pilot program to assess whether urban form factors, such as density, the mix of land uses, or proximity to transit, affected how people responded to the program. In addition, the study tested how different charging structures affected driver response.

**Study Method**

The authors compared the changes in household vehicle-miles traveled (VMT) before and after the implementation of the mileage fee pilot program, assessed how changes in VMT varied according to the urban form patterns around participants’ homes, and compared how behavior varied between households charged two different fee structures. So-called Flat-Rate households paid a fee of 1.2 cents/mile for all miles driven in Oregon, while the Peak-Charged households paid 10 cents/mile for travel in the congested zone during peak hours, but only 0.43 cents/mile for all other travel within Oregon.

**Findings**

Highlights among the study findings are as follows:

1. **Peak-Charged households reduced their VMT during high-cost times more than did Flat-Rate households**
   
   As expected, Peak-Charged households reduced their driving during high-cost (congested) times more than did the Flat-Rate households.

2. **The Peak-Charged households living in denser, mixed-use neighborhoods reduced their VMT more than did Peak-Charged households in other types of neighborhoods**
   
   The analysis found that density and mixing of land uses were both significantly correlated with reduced VMT for the Peak-Charged households. This finding suggests that when travel costs increase during peak hours, households in denser and mixed-use neighborhoods are able to reduce their VMT more than those who live in other types of neighborhoods, such as low-density, single-use ones.
3. Replacing the gas tax with a mileage fee reinforced the influence of urban form on households’ travel patterns
The introduction of the peak charge enhanced the influence of urban form on several types of household VMT. Also, the urban form variables influenced the Peak-Charged households’ VMT more than it did the Flat-Rate households’ VMT.

Policy Recommendations
The study results suggest important implications for policymakers. It is recommended that they:

1. Consider introducing a mileage fee with a variable rate that is higher when and where traffic congestion occurs
The study results suggest that charging a noticeably higher fee for driving in congested conditions can successfully motivate households to reduce their VMT in those times and places where congestion is most a problem.

2. Consider how the urban form of a region will influence the outcome of a mileage fee program that replaces fuel taxes
For urban planners, this finding suggests that switching from fuel taxes to mileage taxes would strengthen the power of land-use planning as a policy tool to shift some travel from solo driving trips to more sustainable modes. For mileage fee program designers, the finding implies that they should carefully consider both current and future urban form patterns when estimating the likely revenues collected from mileage fees and also the impact the fees would have on congestion.

About the Principal Investigator
Zhan Guo is an assistant professor in the Wagner School of Public Service at New York University and interested in public transit, pedestrian behavior, parking policy, and road pricing.

To Learn More
For more details about the study, download the full report at transweb.sjsu.edu/project/2909.html