



# Florida Department of Transportation Research

## Identifying and Tracking Emerging Transportation Trends and Indicators

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### Current Situation

Transportation is essential for many activities, from shopping to work. Changes in these activities can in turn change patterns of transportation demand. Longer term changes can result from emerging trends driven by external factors, such as new technologies, economic shifts from goods to services, traveler behavior and lifestyle preferences, or environmental factors. Understanding these factors, both how enduring they are likely to be and their potential impact on transportation needs, is important for transportation planning, which often looks five, ten, or twenty years into the future.

### Research Objectives

Florida International University researchers examined emerging trends and their potential impact on transportation demand.

### Project Activities

The researchers conducted a survey among transportation professionals to assess the significance of 18 trends, categorized as economic, demographic, and technological. Examples include income inequality and the shift in jobs from manufacturing to service (economic), urban population growth and increasing awareness of environmental issues (demographic), and shared mobility and alternatively fueled vehicles (technological). Survey respondents were asked to rate the likely impact of each trend on passenger and freight miles traveled and the likely development of the trend over 10–20 years.

Respondents saw technology-related trends as most significant. For personal travel, they saw most emerging trends as durable, except for micromobility (e.g., bicycles and scooters) and shared mobility. Overall, they saw demographic trends as decreasing transportation demand, with the exception of delayed retirement age. Increasing environmental awareness was considered both highly influential and highly likely to continue for 10–20 years, with possible benefits in sustainable mobility. For freight, increasing e-commerce and new technologies for freight were viewed as likely to increase demand and have long-lasting effects. Increasing international trade was viewed likely to increase demand, but less durably.

To assess similar impressions among the general public, the researchers captured attitudes of users from publicly available social media, in this case Twitter, across the United States. The researchers used natural language processing to examine large numbers of messages and capture emerging transportation trends and mobility indicators. Analysis of the messages showed positive attitudes toward vehicle technology, telecommuting, and e-commerce, but negative attitudes toward shared mobility and user fees. In the area of vehicle technology, most exchanges dealt with fuel efficiency and trip navigation. Telecommuting exchanges often focused on health care activities. Customer service related to package delivery was a primary e-commerce topic.

### Project Benefits

The information gained in this project can aid planners and decision makers in transportation efforts. Also, the social media methods developed in this project hold promise for understanding trends in real time and on an ongoing basis.

For more information, please see [www.fdot.gov/research/](http://www.fdot.gov/research/).



Many emerging trends are seen as reducing current transportation demand.