



Applying Induced Travel Study in Urban Areas in Tennessee

Problem Description

In Tennessee growing traffic congestion is quickly becoming more prominent. The most significant national-level freight corridors cross the state and are predicted to grow significantly in the future. Unprecedented growth worsened traffic conditions in western, central, and eastern Tennessee, especially severely in urban areas. To manage congestion on the freeways and major arterials, the TDOT commissioned the development of Congestion Action Plans for the four largest urban areas (Chattanooga, Knoxville, Memphis, and Nashville). Research efforts are needed to obtain local-based evidence of induced travel that would allow TDOT and regional agencies to incorporate generated traffic into transport modeling and planning and have a better understanding of impacts of induced travel from the road capacity expansion projects and to improve performance, environmental sustainability, and direct capital investment for transportation in Tennessee.

Research Objectives

A key objective is to estimate the short-run local impacts of lane capacity expansions on vehicle miles travel (VMT), speed (measured in miles-per-hour), and traffic flow (i.e., the number of vehicles per hour that pass a particular location) for evidence-based analysis of induced travel in major metro areas.

- Conduct a comprehensive updated review of published peer-reviewed studies on induced travel, including methods, and short- to long-term impacts by applying a web-based search to identify sources, and reviewing the reference lists from the identified sources to find additional studies.
- Develop methodologies to obtain estimates of short-term impacts of induced travel and apply those techniques for the major metro areas in Tennessee.
- Using the publicly available databases, we collect and compile into a GIS-based spatial geodatabase all data associated with induced travel.
- Obtain and review transportation demand management alternatives, develop a comprehensive guidebook with compiled strategies and well-defined and quantified VMT mitigation methods and best practices to reduce induced travel from capacity expansion that can be employed at the local and regional level.
- Report results and develop recommendations for implementation of VMT mitigation strategies.

Potential Implementation and Expected Benefits

Understanding what types of transport improvement results in higher induced VMT, will allow prioritizing transportation projects that provide more benefits or those that “do not significantly increase vehicle travel”. The project provides a potential for TDOT to meaningfully address several policy measures including congestion relief and air pollution mitigation.

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PROJECT SCHEDULE:

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