

Research Project Title

RES2021-01: Comprehensive Analysis on the Conversion of the Existing HOV Lanes into HOT Lanes in Tennessee

Purpose of the Project

The objective of the proposed project is to assess what actions would be required and the implications of converting existing HOV lanes in Tennessee into HOT lanes. The project will evaluate potential HOT Lane design considerations, operational options to consider, review of potential revenue, expected optimal routes/limits of HOT Lanes and their potential pitfalls, and review of Tennessee policies. The research will focus on the technical and public policy issues and the likely impacts on the interstate corridors, system users (including commuters and truck drivers), land use patterns, existing transportation modes, and regional travel behaviors.

Scope and Significance

The study scope will include a comprehensive literature review on HOT lanes operations effectiveness from other states and jurisdictions, gathering public opinion survey focused on converting HOV lanes to HOT, determination of ridesharing projections along HOV/HOT conversion corridors, preparation of HOT lane tolling policies, evaluating the mechanism of HOT lanes connection to entrance and exit ramps, and the evaluation of toll pricing for HOT (toll rates) and incentive for carpooling. The significance of this project is based on the fact that the findings will have statewide benefits through the understanding of the processes involved in implementing congestion management. This study will be a building block to broader documented knowledge needed in Tennessee, as congestion pricing and managed lanes may become a new norm in the future of transportation. The study is expected to quantitatively and qualitatively show that the implementation of HOT in Tennessee will bring a range of potential benefits to the state including: travel time reliability and savings, reduced vehicle hours traveled, revenue generation, transit improvements, enhanced corridor mobility, environmental advantage, trip options, utilization of excess capacity, and remedy for underperforming HOV lanes in Tennessee among others.

Expected Outcomes

Expected outcomes include a detailed report that will document all aspects of converting HOV to HOT lanes in Tennessee. The following aspects of HOT lanes will be included in the report: comprehensive literature review on the effective of HOT lanes as experienced from other states, detailed public opinion survey on the perception and desire to have HOT lanes in Tennessee, the HOT lane concepts and rationale for Tennessee highways, the planning and implementation processes that will be needed for Tennessee’s use, evaluated benefits of HOT lanes with respect to travel time saving and congestion mitigation, operational aspects of HOT lanes including access points, and toll pricing.

Time Period

9/1/2020 to 8/31/2022

Contact Information

<p>Principal Investigator (PI): Name: Dr. Deo Chimba Department: Civil & Architectural Engineering University: Tennessee State University Address: 3500 John A Merritt Blvd, Nashville, TN 37209 Phone: 615-963-5430 Email: dchimba@tnstate.edu</p>	<p>TDOT Lead Staff: Name: Michelle Nickerson Division: Traffic Operations Phone: 615-741-0894 Email: michelle.nickerson@tn.gov</p>
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