

Improvement of Park-and-Ride Facilities and Services in Metropolitan Areas of Tennessee

Purpose of the Project

The purpose of the project is to conduct a comprehensive investigation on park-and-ride (P&R) facilities and services and transit-oriented developments (TODs) to improve the P&R/TOD network in the State of Tennessee. This will encourage the use of public transit and non-motorized transportation modes for commuting and mitigate many negative externalities related to automotive transportation.

Scope and Significance

The scope of the research project includes:

- Survey the literature to identify the best practices in design and development of P&R facilities and TODs
- Develop an optimization model to identify the optimal locations and sizes of P&R facilities among a set of candidate locations to improve the P&R/TOD network
- Investigate how to increase non-motorized transportation by facilitating new P&R services and improving existing P&R qualities
- Conduct a case study for the City of Nashville and perform sensitivity analyses to examine the impact of P&R facility development on commuter behavior
- Report the findings and disseminate the results

Expected Outcomes

The following are expected outcomes of this research project:

- Improve the P&R/TOD network in the State of Tennessee, which will increase transit use on the existing systems and consequently decrease congestion in the network, improve safety and comfort of P&R transit users, and reduce overall emissions from transportation
- Improve transportation options and resilience of the transportation system to surges in fuel prices, congestion, or other factors that require increased transportation alternatives
- Provide an actionable list of potential P&R/TOD facility locations in Nashville
- Provide design considerations and amenities to further encourage utilization and increase commuter satisfaction

Time Period

The time period for the project is 18 months.

Contact Information

<p>Principal Investigator (PI): Name: Anahita Khojandi Department: Industrial and Systems Engineering University: University of Tennessee Address: 851 Neyland Drive, Knoxville, TN 37996 Phone: 865-974-0234 Email: khojandi@utk.edu</p>	<p>TDOT Lead Staff: Name: Matthew Cushing Division: Multimodal Transportation Resources Phone: 615-741-2586 Email: Matthew.Cushing@tn.gov</p>
--	--