

RES2016-36: EVALUATING FREIGHT INTERMODAL CONNECTORS (FICS) IN TENNESSEE

Principal Investigator: Dr. Deo Chimba, P.E., PTOE dchimba@tnstate.edu

PROJECT PROBLEM STATEMENT

Intermodal freight logistic hubs attract significant amount of trucks which deliver and pick up goods, containers and services through public roadway segments. This proposed project will evaluate Freight Intermodal Connectors (FICs) in Tennessee to identify deficiencies related to congestion, capacity, safety, and supply chain demand needs. The study will focus on “roadway connectors” that is; segments, corridors and intersections that connect Tennessee freight trucks to/from the major freeways from/to high-priority facilities such as truck hubs, airport terminals, freight rail terminals, passenger rail and intercity bus terminals, waterways, warehouses, depots, centers, etc. For efficient intermodal freight movement, these roadway connectors must be in a desired service conditions (operational, safety, and environmental) capable of accommodating truck and freight needs. If FICs have little capacity, they will cause traffic congestions that in turn will dramatically increase travel time, energy consumption, and air pollution. On the other hand, if FICs have too much capacity, their utilizations will be too low to justify monetary investment on them. In other words, FICs need to match operational and safety needs as well as the supply chain demand along the connectors.

STUDY OBJECTIVES

This FICs study will therefore perform a multimodal inventory check and evaluate some of critical freight connectors in Tennessee by identifying improvement needs with respect to: Access And Connectivity, Capacity, Safety, Supply Chain and ITS.

STUDY BENEFITS TO TDOT

The study will provide technical analysis and summary of freight related deficiencies that exist along roadway connectors connecting freight especially trucks to known warehouses, depots, hubs and terminals. The study will come up with potential deficiencies warranting improvement needs which eventually will improve FICs’ capacity, congestion, supply chain demand, and safety. The study will also perform route optimization and advice TDOT on potential alternative routes which can be used by trucks to the existing terminal and hubs. The analysis will provide diverse recommendations on the improvement priorities among the analyzed FICs.

STUDY TIME PERIOD

The proposed period for this research will be 24 months (2-Years) after receiving the fully executed contract. The time period will include the final review and approval of the final report.