A008 ENGR

User Equilibrium assignment for Freight Truck Intermodal Connectors

Abstract:

On time delivery of freight products in the minimum possible shipment time is a crucial factor in maintaining a freight competitive market. The freight intermodal connectors are the shortest portions of freight trips but have proven to be most difficult to travel. This research assesses the alternative routes which a truck can access using freight intermodal connectors to reduce the travel time without compromising safety or environmental aspects. This was done by precisely locating and examining the travel speed patterns of trucks using GIS speed data from sample site measurements and from TDOT records of 2018. The variables considered for assignment of the alternative routes are travel speed, crash history, traffic volume, truck percentage, travel times, travel time reliability and other restrictions like no passing zones for trucks, school zones, axle load restrictions and clearance restrictions. The scoring method was used to assign the score of each route based on the variable amount and the route with minimum scores selected as optimal routes. The paper will also present a model to incorporate all the variables, so it can be used elsewhere for freight routing assignments.