The Impacts of Extended Interstate Closures to Regional Freight Logistics:

A Case Study of the 2011 Interstate 29 Closure

This research utilized empirical Freight Performance Measure (FPM) data to localize and quantitatively assess the impacts of an interstate closure. The utilization of FPM data allows for a contemporary analysis beyond traditional theoretical modeling, simulations, windshield surveys or manual traffic counts. Specifically, this research examined the localized changes in regional freight flows with the specified origins/destinations of Kansas City, Missouri/Kansas and Omaha, Nebraska/Council Bluffs, Iowa during the Missouri River flooding of 2011, which caused 49 miles of Interstate 29 to be closed for 115 days. Based on this analysis, most of the truck traffic did not adhere to the State DOT designated detour routes, which aimed to keep the trucks on interstates or four-lane divided facilities. Other routes utilized were advantageous in regard to driver costs, vehicle costs, travel time, and vehicle miles traveled when compared with the designated detour routes. The impacts of the Interstate 29 closure to localized freight movements were quantified and include the following: vehicle and driver costs (+10.1%), travel time (+21%), and vehicle miles traveled (+12%). Finally, this paper examined if there was a progression of route selection over the four month period of the interstate closure. This analysis concluded that regional truck route selection progressed to the most efficient alternate routes between Kansas City and Omaha.