

- **The Impact of Traffic Incidents on Evacuation Clearance Time** (*Karzan Bahaaldin, PhD student; Ryan Fries, PhD, PE; Michael Williamson, PhD candidate – Southern Illinois University Edwardsville*)

Modeling emergency evacuations can help engineers and emergency managers identify the approximate time it would take for evacuees to leave disaster areas. Unfortunately, many evacuation studies do not model traffic incidents. Because of the congestion on the evacuation routes, driver fatigue, and stress; minor traffic incidents are expected. This paper examines the impact of traffic incidents by modeling them during a no notice emergency evacuation in the East St. Louis metropolitan area. The roadway network were modeled using VISSIM, loaded with the expected traffic volumes that were determined by the regional planning agency, with input from the transportation engineers at the state Department of Transportation. The incident locations were selected based on the historical data that included duration and frequency. The results suggest that incidents near the network gateways have lower impacts than incidents near merging sections inside the network. In particular, traffic incidents upstream of key bottlenecks do not increase delay. Thus, during no notice emergency evacuations, traffic managers should devote resources to quickly detect and clear traffic incidents that are downstream of bottlenecks, instead of upstream.