

Project Title: Evaluating Coastal and River Valley Communities Evacuation Network Performance Using Macroscopic Productivity
Project Abstract (Brief Description): The ever-increasing processing speed and computational power of computers and simulation systems has led to correspondingly larger, more sophisticated representations of evacuation traffic processes. Today, micro-level analyses can be conducted for megaregion-level hurricane evacuations spanning multiple states over several days and include the intermodal exchange of evacuees, millions of vehicles, and thousands of miles of roadway. However, the effort required to build such models and the volume of output data they produce also present difficulties for analysts; as they code networks, generate demand, model control elements and then calibrate results and interpret output. The goal of this research is to quantify and describe the operational conditions of evacuation traffic “network productivity.” The concepts suggest that maximum production and therefore trip completion, is realized when the network achieves the highest rate of vehicles-miles traveled in a time interval. Here, a megaregion evacuation model of a coastal community is used to quantify the average network velocity, demand and network length necessary to estimate the network productivity. This research is likely to find that the network productivity exhibits a peaking characteristic. This would suggest network productivity can be maximized on a macroscopic scale as a function of demand. Research Objective(s): To better understand evacuation productivity of coastal and River Valley communities to assist in the planning, mitigation, response, and recovery of these areas from disasters.
Describe Implementation of Research Outcomes (or why not implemented) We are currently collecting and statistically analyzing the simulated network results. Initial results from this research project have been accepted for publication in two journals.
Impacts/Benefits of Implementation (actual, not anticipated) <i>To be determined upon conclusion of the project:</i>
Web Links: http://evaccenter.lsu.edu
Budget (Funding) Amounts & Source(s) (US DOT +Match(s) =Total Costs): 189,695(USDOT) + 49,706 (Match) = 239,401
Project Start and End Dates: 05/01/2015-04/30/2017
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