

Project Title: Vulnerability of fuel distribution systems to hazards in coastal communities
Project Abstract (Brief Description): Coastal communities are vulnerable to disruptions in fuel availability for their transportation networks due to their susceptibility to flooding and storm surge events. Fueling station design criteria do not change in coastal communities and supply chains rely on road networks that lack the redundancy present in more inland areas. This study will examine fuel distribution disruptions from past storms and the time for restoration of fuel availability after coastal hazard events. Causes and mitigation of damaged fuel networks will be determined and new designs and methods proposed to minimize disruption during coastal hazards.
Describe Implementation of Research Outcomes (or why not implemented) - Developed extensive network model of coastal Louisiana communities capturing roads, fueling stations, and bulk terminals. Model captures all details of the lower portion of LA Highway 1, fuel capacities, supply routes and storage types (above-ground and below ground fuel storage).
Impacts/Benefits of Implementation The combined fueling station and road network constructed for this project is the first spatial representation of this system for a Louisiana coastal parish. While the Louisiana Governor's Office of Homeland Preparedness (GOHSEP) has a GIS-based system with spatial fueling data that can be used in an emergency, it has not been used for any pre-event analysis function. In March 2017, the PI Pardue presented the network to the state's Supply Chain / Transportation Council. This organization was formed after the catastrophic floods of 2016 to better prepare the state's transportation network, and by extension, other critical infrastructure systems, from failure during these events. The presentation generated discussion among members responsible for understanding the fuel supply during events and follow-up discussions were promised.
Web Links: http://evaccenter.lsu.edu
Budget (Funding) Amounts & Source(s) (US DOT +Match(s) =Total Costs): 44,004 (USDOT) + \$67,145 (Match) = \$111,149
Project Start and End Dates: 05/01/2015 – 04/30/2016. A no cost extension was granted to 12/30/2016. Project complete.
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