

<p>Project Title: Utilizing Graceful Failure As An Opportunity for Flood Mitigation Downstream to Protect Communities and Infrastructure</p>
<p>Project Abstract (Brief Description): In 2011, we observed how “graceful failure” through planned damages to the Birds Point Levee by the US Army Corps of Engineers was enacted to alleviate extreme flooding on the Mississippi River. This action, while flooding croplands as planned in the past, actually reduced flooding and damage to waterway infrastructure and communities downstream. Recent trends and future climatic projections indicate that we will have more of these “extreme” flooding situations in our future. Therefore, this project will focus on identifying locations beyond Birds Point on the inland waterway system and associated tributaries where “graceful failure” or planned breach of levee infrastructure can be used as a means of flood protection for downstream communities and infrastructure. Advanced spatial analysis techniques will be used along with a set of criteria to be developed to identify probable locations for such mitigative approaches. Each location that is identified as a viable candidate will then be analyzed in terms of capacity for flood water detention, potential impacts to local infrastructure, and population potentially affected by the new floodway. This project will provide alternatives for flood mitigation not typically employed to reduce the need for disaster response and assist in transportation planning during extreme flood conditions.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented) - Place any photos here <i>To be determined upon conclusion of the project:</i></p>
<p>Impacts/Benefits of Implementation (actual, not anticipated) <i>To be determined upon conclusion of the project:</i></p>
<p>Web Links: martrec.uark.edu</p>
<p>Budget (Funding) Amounts & Source(s) (US DOT +Match(s) =Total Costs): \$92.5 K USDOT + \$47 K matching = \$139.5 K total</p>
<p>Project Start and End Dates: May 2018 – November 2019</p>
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<p>Principal Investigator Institution (University): Vanderbilt University</p>