PROBLEM STATEMENT:
New ship designs will allow the biggest ships yet to safely navigate the Mississippi River and deliver upwards of 1,700 to 2,375 heavy-duty highway truck equivalents to inland waterway ports. With the expansion of the Panama Canal, private shipping companies and investors plan to load cargo ships leaving the Canal at new terminals along the Gulf of Mexico (Plaquemines Port Harbor and Terminal District, 50 miles from the Gulf). These ships would then carry containerized cargo to and from ports in Memphis, Little Rock, and other river cities. These new ships and investments present an opportunity to shift freight flows of containerized cargo from East and West coast sea ports to inland waterways terminals. This is a tremendous economic opportunity for Arkansas' intermodal companies, agencies, and port owners/operators. Yet, potentially significant increases in heavy-duty truck traffic resulting from new port activity may lead to negative externalities (pavement damage, safety issues, congestion, and air and noise pollution). There is a need to mitigate such negative consequences, while ensuring that Arkansas benefits from economic opportunity presented by larger container volumes.

OBJECTIVES:
The purpose of this research is to (1) quantify the potential impacts of increased container volumes at inland waterway ports in Arkansas resulting from larger cargo ships and the Panama Canal expansion, and (2) identify solutions to harness the economic potential of increased port activity while mitigating negative externalities. This will be accomplished through scenario analysis using the Arkansas Statewide Travel Demand Model's freight component which will be supplemented with robust depictions of inland port terminal operations. Truck GPS and marine AIS data will be used to estimate land side impacts of port activity. This project is anticipated to identify maintenance, infrastructure, policy, and operational solutions.

FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:
In addition to a final report detailing the full research effort, the research will update the Arkansas Statewide Travel Demand Model's freight component which can then be used for the proposed scenario analysis as well as other future scenarios (supply chain analysis, etc.). A brief review of ROI related to freight planning activities shows that ROI can be as high as 1.76 to 2.71 (e.g., $2.70 in tax revenues is received back from each dollar spent by the state) for freight seaport projects (FDOT, 2016). A more robust ROI study will be carried out as part of this work.