



UTC Project Information	
Project Title	ESTIMATING ENVIRONMENTAL LOAD DEMANDS CONSIDERING WEATHER EXTREMES TO ENHANCE RESILIENCY OF OKLAHOMA BRIDGES.
University	University of Oklahoma
Principal Investigator	Syed Ashik Ali, Ph.D.;
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Funding Source(s) and Amounts Provided (by each agency or organization)	IBT-ABC-UTC funds : \$29,500 Match funds : \$31,500
Total Project Cost	\$ 61,000
Agency ID or Contract Number	69A3552348322
Start and End Dates	January 1 2025 - Active
Brief Description of Research Project	<p>Bridges are critical components of transportation infrastructure facilitating uninterrupted flow of goods and services within communities. However, the growing frequency and intensity of natural hazards and extreme weather events are escalating the vulnerabilities of bridge infrastructure. In recent years, Oklahoma has faced an increasing frequency of extreme weather events, including tornadoes, rising temperatures, and flash floods. These threats pose significant challenges for bridge design and maintenance leading to safety and functionality concerns. Therefore, innovative strategies and solutions are needed to reduce the impact of changes in weather patterns and extreme events on bridge infrastructure. Enhancing resilience of bridge infrastructure requires the incorporation of weather factors into bridge design codes and standards. The proposed study plans to evaluate the effect of changes in weather patterns and extreme weather events on the environmental load demand related to temperature and wind speed for bridges in Oklahoma. The use of advanced climatic models to predict future changes in weather patterns and estimate environmental load demand will be explored. A risk analysis will be performed to assess the vulnerability of bridges to future predicted weather conditions. Recommendations for updating bridge design codes and standards to incorporate considerations of extreme weather events will be provided based on the findings of this study.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here</p>	<p>The outcomes will be tracked and reported once they are identified.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>The impacts will be tracked and reported once they are identified.</p>
<p>Web Links</p> <ul style="list-style-type: none">• Reports• Project website	<p>https://abc-utc.fiu.edu/estimating-environmental-load-demands-considering-weather-extremes-to-enhance-resiliency-of-oklahoma-bridges/</p>