Title:	Incorporating Resilience Considerations in Transportation Asset Management Planning and Project Selection Process

The Problem:	TxDOT Transportation Asset Management Plan (TAMP) presents a 10-year strategy for managing the state's pavements and bridges. Certain resilience considerations have been included in the TAMP and the statewide resiliency plan (SRP), yet there is no definite quantitative methodological framework on how to incorporate resilience in asset management and project selection.
	
	A quantitative resilience-based infrastructure asset management methodological framework is timely and important for infrastructure owners to prepare for various natural (e.g., hurricanes and floods) and man-made hazards (e.g., cyber-security and pollution (global warming)).
	
	This project shall:
	• Move the concepts of resilience beyond other efforts by evaluating prevailing resilience assessment approaches.
	• Develop a resilience-based transportation asset management (TAM) framework.
	• Address high level asset management issues.
	• Allow TxDOT Districts opportunities to better:
	    o Manage infrastructure assets.
	    o Make better project selection by incorporating resilience.

Technical Objectives:	The objectives of this project are: • Conduct literature review on resilience assessment approaches as well as asset management methodologies. • Assemble a Resilience Working Group and conduct interviews to obtain insights. • Identify resilience metrics to be included in the asset management model. • Develop a quantitative resilience-based transportation asset management (TAM) framework. • Develop an analytical user-friendly tool with input-output dashboard that can run the analysis, produce results and generate reports. • Conduct pilot studies with selected districts to demonstrate the proposed framework and tool. • Develop recommendations to be included in Transportation Asset Management Plan and Statewide Resiliency Plan. The expected technology readiness level (TRL) for this project is 8.
Anticipated Deliverables:	1. Technical memorandum for each task completed. 2. Monthly progress reports. 3. Project Summary Report 4. Research report documenting the findings of this research, including: • A quantitative resilience-based transportation asset management (TAM) framework. • An analytical user-friendly tool with input-output dashboard. • Recommendations to be included in Transportation Asset Management Plan and Statewide Resiliency Plan. • Value of Research (VoR) that includes both qualitative and economic benefits.

| Proposal Requirements: | 1. RFP#1 Q&A Deadline: 12:00 p.m. Central Time, **Tuesday, February 20, 2024.**
2. Proposal Deadline: 12:00 p.m. Central Time, **Thursday, March 21, 2024.**
3. Use the current "ProjAgre" and "PA Forms" templates located at the [RTI Forms webpage](#).
4. Proposals will be considered non-responsive and will not be accepted for technical evaluation if they are not received by the deadline or do not meet the requirements stated in RTI's [University Handbook](#).
5. Proposals should be submitted by the University Liaison in PDF format; (1) PDF file per proposal. File name should include project name and university abbreviation.
6. This project will be tracked during the life of the project using the Technology Readiness Level ([TRL](#)) scale.
7. The 2021 Texas Legislative Session requires that universities be in compliance with Senate Bill 475 by submitting a completed and signed TxDOT Security Questionnaire (TSQ) to RTIMAIN@txdot.gov. Universities that have not submitted a completed and signed TSQ one week after award will be considered non-compliant and unable to participate in the Program. |