Title:	Develop Guidance for Sustainable Traffic Signal Operation Strategies to Support All Intersection Users
The Problem:	The Bipartisan Infrastructure Law provides new tools and resources that allow states and local governments to build Complete Streets. The law requires states and metropolitan planning organizations use at least 2.5 percent of their planning funding on activities related to Complete Streets or travel on foot, by bike, in a vehicle or using public transit. It also provides funding for Complete Streets activities through Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants and the National Highway Performance Program. Surface Transportation Block Grant Program funds can also be used for Complete Streets implementation.

The Problem (continued)

Complete streets are roadways designed and operated to enable safe use and support mobility for all users – including people of all ages and abilities, regardless of whether they are traveling as drivers, pedestrians, bicyclists, and public transportation riders. FHWA views Complete Streets as an extension of the Safe System Approach (SSA) to operating the transportation system. The SSA involves using infrastructure solutions to prevent common crash types 1) involving pedestrians and bicyclists, 2) at intersections, and 3) with vehicles departing the roadway. There are six principles that form the basis of the SSA: deaths and serious injuries are unacceptable, humans make mistakes, humans are vulnerable, responsibility is shared, safety is proactive, and redundancy is critical.

Common traffic signal operational strategies that support the SSA include:
- leading pedestrian intervals,
- exclusive bicycle and pedestrian phasing,
- transit and bicycle queue jumps,
- median and pedestrian refuse island,
- and reduced left-turn conflict intersections.

While traffic signal system operators have always kept safety paramount in designing and developing traffic signal timing strategies, a trade-off exists between improved efficient intersection operations and enhanced common intersection safety strategies. Guidance is needed on when and how to apply these strategies to mitigate these trade-offs.

Technical Objectives:	The objectives of this project are:

- Conduct a literature review and summarize state-of-the practice and key findings.
- Develop a catalogue of common traffic signal operations strategies that support the Complete Streets and Safety Systems Approach concepts.
- Conduct a trade-off assessment of the pros and cons associated with when and where to deploy these strategies.
- Develop a tool for assessing and estimating the potential benefits and impacts associated with each strategy.
- Identify the technologies and devices needed to deploy each strategy at common intersections.
- Develop guidelines and specifications to support the use of common sustainable operations strategies at signalized intersection as part of a Complete Street deployment.

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. Assessment and Benefits Estimation Tool. 4. Project Summary Report 5. Research report documenting the findings of this research, including:

- Results of the tradeoff assessment of strategy deployment.
- Various strategies specifications and the associated guidelines.
- 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.