Title:	Quantify the Real Impact of Transportation Activity on Regional Ozone and Near-Road PM Concentrations
The Problem:	Transportation is considered a key contributor to air pollution in urban areas. Transportation conformity governs how transportation projects that are planned and developed in non-attainment areas will meet the federal and state requirements and goals for improving regional and near-road air quality. TxDOT and its partner agencies heavily rely on modeling to demonstrate the compliance of planned transportation projects with federal and state air quality requirements. It is widely accepted that reducing emissions from vehicle activities would automatically translate into better air quality, both at the regional and near-road environment. This assumption is also a key component of the air quality analyses and models that are used and calibrated based on limited baseline condition data representing normal transportation operations in a limited number of locations, and then used to forecast or evaluate the impact of a broad range of changes in the inputs. Furthermore, the modeled changes rarely happen in real-world; therefore, the modeling results cannot be independently observed and verified. The COVID-19 pandemic has resulted in substantial changes in the levels and patterns of the regional and state-wide transportation activities, which can be observed and measured from data being collected by TxDOT and other entities. At the same time, the regional and near-road air quality monitoring data are collected and compiled by TCEQ and other agencies. These major changes in transportation patterns and activity levels have created a unique opportunity to objectively evaluate the real extent of the impact of transportation on air quality at the regional and near-road levels. Research is needed to clearly communicate the true impact of transportation activity and proposed transportation improvement projects with the stakeholders and general public and streamline the requirements and assumptions used in transportation conformity at a regional and project level.
Technical Objectives:	This research will bridge the gap between the reality and perception as related to the actual extent of the impact of transportation activity on air quality. To achieve this objective, the work to be performed shall include: 1. Evaluate existing air quality models in terms of their ability to accurately represent the observed state of the air quality. 2. Based on the evaluations of existing air quality models, assess the findings 3. Develop recommendations regarding the methodologies, assumptions, tools and inputs that are used in evaluating air quality impacts of surface transportation. The expectation of the project end product(s) shall attain a Technology Readiness Level of 8.
Anticipated Deliverables:	1. Technical memorandum for each task completed. 2. Monthly progress reports. 3. Value of Research (VoR) that includes both qualitative and economic benefits, to be included in the final research report; not a stand-alone deliverable. 4. Research report documenting the findings of the research, including a set of processes and recommendations to demonstrate and communicate the actual impact of transportation on regional and near-road air quality as a result of proposed/planned projects. 5. Project Summary Report
Proposal Requirements:	1. Utilize the “Proj/Agre” and “PA_Form” templates located at the TxDOT RTI website. 2. 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, which is also located at the RTI website. 3. Proposals should be submitted in PDF format, 1 PDF file per proposal. File name should include project name and university abbreviation. 4. This project will be tracked during the life of the project using a Technology Readiness Level (TRL) scale. For more information about the use of a TRL, click.