



# **North Central Texas Council of Governments**

**NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS**

**METROPOLITAN PLANNING ORGANIZATION**

**REQUEST FOR PROPOSALS**

**Predictive Crash Analysis Software**

**June 25, 2021**

# **PREDICTIVE CRASH ANALYSIS SOFTWARE REQUEST FOR PROPOSALS**

## **INTRODUCTION**

The North Central Texas Council of Governments (NCTCOG) is requesting proposals from developers or qualified firms of a predictive crash analysis software capable of: screening and identifying intersections and roadway segments with a higher than expected or higher than predicted number of crashes, identifying an overrepresentation of specific crash types at a particular location, selection of appropriate safety countermeasures, performing a cost/benefit analysis to determine which countermeasures will be most cost effective, and performing a before and after analysis to determine the real-world effectiveness of implemented countermeasures.

## **NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS**

The North Central Texas Council of Governments is a voluntary association of, by, and for local governments, and was established to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating for sound regional development. NCTCOG's purpose is to strengthen both the individual and collective power of local governments as well as to help them recognize regional opportunities, eliminate unnecessary duplication, and make joint decisions.

## **BACKGROUND**

Since 1974, NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation in the Dallas-Fort Worth Metropolitan Area. NCTCOG's Transportation Department is responsible for regional transportation planning for all modes of transportation. The Department provides technical support and staff assistance to the Regional Transportation Council (RTC) and its technical committees, which compose the MPO policy-making structure. In addition, the

Department provides technical assistance to the local governments of North Central Texas in planning, programming, coordinating, and implementing transportation decisions.

## **PURPOSE AND NEED**

The goal of the NCTCOG Transportation Safety Program is to improve safety for all users of the transportation system by supporting and coordinating planning efforts to develop safety policies, programs, and projects. The NCTCOG Transportation Safety Program coordinates with the Texas Department of Transportation, local governments, local police departments, the Texas A&M Transportation Institute, and other organizations to collect and analyze the data needed throughout the safety planning process. The Safety Program utilizes crash data to identify high-crash locations, intersections, or hot spots; determine types and severity of crashes; identify contributing factors for serious injury and fatality crashes; and develop county, regional, and corridor-level crash rates for roadway facilities.

Because problem identification is the first step in effective transportation safety planning identifying, collecting, and analyzing crash, fatality, and other safety data is important to improving transportation safety in North Central Texas. Data from the Texas Department of Transportation's Crash Record Information System, the National Highway Traffic Safety Administration Fatality Analysis Reporting System, and the National Response Center are used by NCTCOG to analyze, map, and report regional performance measures. The data is used to analyze crashes for the three main categories of regional transportation system users: motor vehicles, freight carriers, and active transportation users. In 2020, the NCTCOG Metropolitan Planning Area experienced 108,948 crashes; 2,942 resulted in serious injuries and 820 resulted in a fatality.

The North Central Texas Council of Governments requests proposals for a crash analysis software license or tool which will aid our roadway safety improvement candidate selection

processes and roadway safety plans by proactively identifying higher than expected or higher than predicted crash risk at intersections or along roadway segments throughout the North Central Texas region. This scope of work will include the procurement of a crash analysis software which must incorporate the predictive crash methods documented in the most recent edition of the American Association of State Highway and Transportation Officials' (AASHTO) [Highway Safety Manual \(HSM\)](#).

## **PROJECT SUPPORT**

The project will be conducted under the guidance and supervision of a Consultant Selection Committee (CSC), which may include members of transportation agencies, public partner agencies, and NCTCOG staff. The responsibilities of the CSC will be to review and evaluate the submitted proposals for this project. NCTCOG shall serve as project manager to implement a mutually agreed upon scope of work and to monitor project progress. NCTCOG shall also serve as the contract manager and procurement administrator for the project.

## **WORK PROGRAM**

The work program for the Predictive Crash Analysis Software is summarized by the tasks outlined below. Consultant(s) are encouraged to propose modifications to the tasks and task sequencing which will improve the effectiveness of the project effort, while containing costs, are encouraged.

## **SCOPE OF WORK**

### **Task 1: Required Project Administration**

The Consultant or qualified firm(s), at a minimum, must achieve and maintain the performance outcomes outlined below, consistent with NCTCOG standards or performance standards otherwise agreed to by NCTCOG through a contract resulting from this Request for Proposals (RFP).

Consultant(s) also may propose to achieve additional performance outcomes or functionalities (beyond those minimally required).

Proposals should include the purchase of the Predictive Crash Analysis Software including setup, data integration, and calibration to accurately reflect local (North Central Texas) traffic conditions. This software must be capable of integrating data from the Texas Department of Transportation's (TxDOT) Crash Records Information Systems (CRIS) crash data and NCTCOG's modeled network roadway volume and roadway attribute data. It must be capable of analyzing a minimum of five years' worth of crash data at once. If any additional data sources can be incorporated into the analysis software, please outline those sources and the benefits of using them in the proposal.

## **Task 2: Baseline Features**

At a minimum, this analysis software should be able to identify intersections and roadway segments within the North Central Texas Council of Governments region that have the highest crash risk and/or the greatest potential for crash mitigation. Additional desired functionalities include, but may not be limited to the following:

- Network screening – the software should be able to identify and rank intersections and roadway segments with higher than average expected or predicted crashes according to Highway Safety Manual methodology. The software should also be able to identify sites where crash frequencies are not necessarily higher than expected but have high enough crash frequencies to warrant safety countermeasures. The software should be able to compare and rank high crash intersections and roadway segments relative to peers within a specified geography, such as a city, county, or the entire Metropolitan Planning Organization. Ranking should be possible not only for those locations with the highest number of expected or predicted crashes, but for those with the highest

possible safety benefit as well. The software should be able to identify an overrepresentation of specific crash type(s) at a particular location. It should also be able to identify all intersections or roadway segments for which a specific crash type is overrepresented. For example, the software could identify intersections with a higher-than-expected number of wrong-way driving related crashes and recommend appropriate countermeasures. Ideally the software would be able to diagnose both engineering countermeasures and human factor countermeasures.

- Countermeasure selection – After an intersection or roadway segment has been identified as having a higher than expected or higher than predicted number of crashes, the software should be able to help identify candidate improvements that address the specific safety concerns at that site using appropriate crash modification factors, crash reduction factors, or similar applicable factors.
- Cost benefit analysis – The software should be able to consider the average cost of common safety countermeasures (average costs will be determined by NCTCOG or its partners) and evaluate which possible safety countermeasure(s) would be most cost effective to improve safety at an intersection or along a roadway segment.
- Before and After analysis – the software should be able to compare conditions before and after a countermeasure or set of countermeasures have been implemented at an intersection or roadway segment to evaluate the effectiveness of said countermeasures over time.

This software should be able to complete the analysis described above for limited access, arterials, and local roadways. It should be able to identify crash trends for vehicles and other

roadway users like bicyclists and pedestrians. It should be able to calculate safety performance functions for both urban and rural settings. The proposal should outline how crash data, volume data, and roadway characteristic data are stored and how data security is maintained within that environment.

### **ADDITIONAL REQUIREMENTS**

1. The Proposer must include a description of technical hardware, software, equipment, and professional services to be used in carrying out the proposed service.
2. The Proposer must submit a data backup plan and schedule that ensures very little downtime of the software, if applicable.
3. The Proposer must include an initial training plan for NCTCOG designated administrators and periodic trainings on an as-needed basis. If such training can be adequately provided through other means, it need not be conducted in person.
4. If requested, the Proposer must make an online demo version of the proposed system available for review and testing.

### **PRICING AND SCHEDULE**

The cost table below must be returned as part of a successful proposal. Costs should be calculated as an annual total unless otherwise specified. The “Other costs” row should include a breakdown of any additional costs not covered elsewhere in the table. Please specify if these other costs are annual or one-time expenses. Specify if any additional options are offered and outline those functionalities. For the annual total at the bottom of the table, include only annual costs.

### Pricing Table

Annual cost of software/tool/license	\$
Number of included licenses	\$
Annual cost of each additional license	\$
Cost of set up, calibration, and maintenance (per hour)	\$
Ongoing Technical Assistance (per hour)	\$
Other annual or one time costs	\$
<b>Annual Total</b>	<b>\$</b>

The successful firm shall agree to contract with NCTCOG to provide the safety analysis software license or tool to NCTCOG.

It is anticipated that the initial contract period will be a one-year period, with an option to renew for an additional three years based on the selected firm's performance; availability of program funding; and/or at the discretion of NCTCOG. The selected firm shall develop a detailed annual budget for the initial contract period and for each renewal year. Initial set-up, data integration, and helpdesk services along with any fees must be outlined in the proposal, utilizing the pricing table above.



## CONSULTANT SELECTION CRITERIA AND CONTRACT AWARD

The Consultant Selection Committee (CSC) will review all proposals and select a firm it considers qualified to undertake the project. The following criteria will be used to evaluate the proposals:

1. Project Understanding	20 percent
2. Scope of Services	30 percent
3. Project Cost	35 percent
4. Firm Qualifications/Consultant References	10 percent
5. Project Schedule	5 percent

If the CSC determines that interviews will be required before a final decision can be made, the **interviews will take place via Microsoft Teams the week of August 30, 2021**. Proposers should be willing and able to attend these interviews, if necessary. Firm(s) who are invited to an interview will be notified **the week of August 23, 2021** that an interview has been scheduled. Costs for developing the proposal and costs attributed to interviews (and subsequent negotiations) are at the proposer's own expense and will not be reimbursed by NCTCOG.

### CONTRACT AWARD

Following final negotiations of the work plan and costs satisfactory to NCTCOG, the consultant will be asked to execute a contract with NCTCOG. If applicable, a Notice to Proceed will be issued upon execution of the contract. NCTCOG reserves the right to reject any and all proposals, to contract for any or all portions of the project with the selected consultant, or to hire multiple firms.

The successful responder(s) to this Request for Proposals is expected to provide qualified personnel to accomplish each portion of the work in this study. NCTCOG will maintain the right to request the removal of any personnel found, in its opinion, during the course of work on this project, to be unqualified to perform the work.

The Sample Contract, provided in this transmittal, contains federal requirements which must be included with all proposals submitted. Appendices C through J of the Sample Contract contain compliance requirements and certification forms which must accompany the proposal. **Failure to comply with these requirements may result in finding the Proposal non-responsive.**

The Texas Legislature has adopted House Bill 1295. In short, the law states that a governmental entity or state agency may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties (Form 1295) to our agency at the time of a signed contract. As part of contract development, the Consultant will be asked to complete the disclosure of interested parties electronically and submit through the Texas Ethics Commission website. NCTCOG will provide a specific contract number associated with the award for inclusion in the submittal. Once submitted, the Consultant will be requested to return an e mail confirmation of submittal to NCTCOG. For more information about the process, please visit the following website for Frequently Asked Questions:

[https://www.ethics.state.tx.us/resources/FAQs/FAQ\\_Form1295.php](https://www.ethics.state.tx.us/resources/FAQs/FAQ_Form1295.php)

## **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION**

The Disadvantaged Business Enterprise participation must meet the 8.3 percentage goal identified for this type of procurement. Respondents should also include an Affirmative Action Plan in the proposal. Failure to comply with these requirements may find the proposal non-responsive.

## QUESTIONS AND ANSWERS

All questions regarding the services required shall be directed in writing by email to [TransRFPs@nctcog.org](mailto:TransRFPs@nctcog.org) by the close of business on **Friday, July 2, 2021**. All questions and responses will be posted on NCTCOG's website at <http://www.nctcog.org/rfp> by the close of business on **Friday, July 9, 2021**. NCTCOG reserves the right to respond to inquiries as it deems necessary.

## OVERALL PROCUREMENT SCHEDULE

This RFP shall be used to accept, review, and score proposals based on the following schedule with the intent of awarding a Fixed Price/Milestone Based Payment contract. The following represents the schedule of procurement activities leading to contract award:

Issue Request for Proposals	June 25, 2021
Last Day to Submit Questions	July 2, 2021
NCTCOG Q&A Posted to Website	July 9, 2021
Proposals Due & Proposal Public Opening	July 30, 2021
Consultant Selection Committee Meeting	week of August 16, 2021
Consultant Interviews (if needed)	<b>week of August 30, 2021</b>
NCTCOG Executive Board Approval	October 28, 2021
Execute Contract(s)	November 2021

NCTCOG reserves the right to make changes to the above-mentioned schedule. All such changes shall be made by an amendment to the RFP and shall be posted on NCTCOG's website at [www.nctcog.org/rfp](http://www.nctcog.org/rfp). It is the responsibility of the consultant to frequently check this website for information concerning amendments to the RFP.

\*Public opening of the proposals will be done via Microsoft Teams on **July 30, 2021 at 5:05 p.m.**

A link to the Microsoft Teams meeting is below. Microsoft Teams is integrated with audio so you will only need to use the conference call number (below) if you are unable to access the Microsoft Teams App. The Teams App is available for download [HERE](#).

## Public Opening of Proposals:

**Join on your computer or mobile app**

[Click here to join the meeting](#)

**Or call in (audio only)**

[+1 903-508-4574](#)

Phone Conference ID: 674 205 653#