

## **I. SCOPE OF SOLICITATION**

The Office of Planning at South Carolina Department of Transportation (SCDOT) is responsible for the development, maintenance, and application of the statewide and regional travel demand models. The travel demand models provide staff and elected officials with current and future travel conditions for the urban and rural areas within the state. The travel demand models are necessary for developing long-range transportation plans and are used to provide traffic projections for road and pavement design, and traffic operations. In addition, travel demand models provide the transportation inputs necessary for air quality analysis and would be used to complete conformity determinations for areas designated by EPA as non-attainment.

The South Carolina Department of Transportation (SCDOT) is seeking proposals from qualified vendors to provide on-call technical assistance in the update and development of the statewide and regional travel demand models, and application of travel demand model in air quality analysis and modeling.

The SCDOT is currently using both internal and external data for different programs which require extensive data analytics. In order to meet the challenges in data analytics and logistics, the SCDOT is seeking proposals from qualified vendors to provide on-call technical assistance in the wide-range of data science activities.

Therefore, the scope of this solicitation entails both travel demand model support and technical assistance in data science projects.

## **SCOPE OF WORK**

- 1.0** The consultant will provide technical assistance to the South Carolina Department of Transportation (SCDOT) staff in their efforts in the update and development of the statewide and regional travel demand models and their application in the air quality modeling. South Carolina statewide and regional travel demand models use TransCAD as their application platform.

**1.1 TECHNICAL ASSISTANCE – TRAVEL DEMAND MODEL**

This will involve assisting the SCDOT staff in utilizing existing procedures as well as recommending and providing technical assistance to the staff in the implementation of updated/innovative modeling strategies. In order to obtain the necessary insight and understanding of the existing models, all available information concerning their development and application will be compiled, as requested, to produce high quality documents that will include, but is not limited to, model technical report (full or in part), model user's manual, technical memo, technical guidelines, and project reports.

**1.2 DATA PREPARATION AND DEVELOPMENT**

Consultant will assist in the preparation and development of various datasets in relation to the travel demand models and air quality models. Example of such dataset includes but is not limited to socioeconomic, demographic, network attributes, traffic analysis zones, travel surveys, freight-related, and traffic-related data.

**1.3 TECHNICAL ASSISTANCE – DATA SCIENCE**

The consultant will assist SCDOT staff with data science projects. These projects can range from visualization to analytics and logistics support. For visualization, Business Intelligence tools such as Power BI and Tableau would be used as potential mediums. Data analytics and/or logistics could entail data storage and scripting support (e.g., using R, Python, etc.), and development of in-house and cloud-based tools or applications. In addition, consultation and guidance to the SCDOT in-house staff will be provided when sought.

**1.4 TECHNICAL ASSISTANCE – AIR QUALITY MODELING**

The consultant will assist SCDOT staff with air quality analysis and modeling. The analysis can include a review of air quality implications associated with the long-range plans, and if necessary, assist staff with reviewing and/or conducting conformity findings. As air quality regulations continue to change, the consultant will keep abreast of the changes and provide support to the SCDOT as the need arises. Examples of modeling related assistance include but is not limited to script development for processing air quality model inputs and project-level runs to in relation to quantifying air quality impacts.

**1.5 STAFF TRAINING**

The consultant will provide on-call training, as necessary, to the SCDOT staff through individual, hands-on instruction and demonstration. The training emphasis will be on the TransCAD, TransModeler, EPA's MOVES software, BI tools, as necessary.

## TECHNICAL PROPOSAL

Provide a brief history and description of your company and organization. Elaborate on the expertise of your organization and provide information on properly trained, experienced, qualified, and competent staff that will perform the desired consulting services.

Your proposal need to have two distinct parts: one for travel demand modeling and the other for data science support. In both parts, your offer must include enough detail to demonstrate an understanding of the full scope of the requirements, and to explain your ability in performing tasks outlined in ~~Section III~~ the Scope of Work. The Technical Proposal must not include any price/cost information. ~~The price/cost information is to be submitted separately within the Price-Business Proposal.~~

Information on the key personnel that possess relevant experience and related professional credentials in travel demand modeling will include, but is not limited to:

### Project Manager/Principle In-Charge/Project Principle

- A bachelor's degree in Civil Engineering, Urban Planning, Business Administration or related field or combinations of technical training and /or related experience.
- Experience in knowledge of relevant transportation planning principles and practices, project development, management and administration.
- A proven record of providing expert advice on best practices and latest industry trends in the areas of travel demand modeling.
- At least ten (10) years of experience of travel demand model development and application project management.

### Senior Modeler/Engineer/Planner

- An advanced degree in Civil Engineering or related field or combinations of technical training and /or related experience.
- Expert knowledge of traffic engineering and transportation planning principles and regulations.
- Expert knowledge of travel demand modeling theories, techniques, methods, procedures and best practices on scripting.
- Demonstrated ability as an expert in the development and application of travel demand models.
- At least ten (10) years of experience in providing research, analysis and training in travel demand modeling related topics.
- Strong communication and training skills.

### Junior Modeler/Engineer/Planner

- A bachelor's degree in Civil Engineering or related field or combinations of technical training and /or related experience.
- Working knowledge of travel demand modeling theories, techniques, methods, procedures and best practices on scripting.
- Demonstrated proficiency in developing and applying of travel demand models.
- With at least two (2) years of experience in travel demand modeling related research and analysis.

### GIS/Data Analyst

- A bachelor's degree in Geography, Civil Engineering, Urban Planning, Computer Science, Statistics or related field or combinations of technical training and /or related experience.
- Expert knowledge and experience with various travel demand modeling related data, including roadway network data, census data, and travel survey data.
- Basic knowledge of statistics.
- Strong GIS and data analysis skills.

### Technical Writer

- A degree English, Journalism or related field or combinations of technical training and /or related experience.
- Experience in writing reports, contracts, presentations and other documents.
- A demonstrated experience in producing technical documentation for diverse readers.

Similar to the above, please provide information on the key personnel that possess relevant experience and related professional credentials in data science.

Personnel supporting SCDOT must be able to attend meetings and engage in coordination during SCDOT's business hours following the eastern standard times. The support staff working in different time zones must be available for any such coordination.

Use Calibri Light (font) with 12 pt font size for your technical proposal. Use at least 1 inch left margin. Use single column layout.

Provide reference contact information from up to two (2) customers who have had similar work performed by your company within the last six (6) years.

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