

## Who we are:

Transportation is so basic that many of us overlook its overwhelming importance in our daily lives. Practically everything used in our homes, offices, or schools across Tennessee – from furniture to food items to clothing – requires a large and complex transportation network. The Tennessee Department of Transportation provides citizens of Tennessee and travelers with one of the best transportation systems in the country. TDOT is a multimodal agency with responsibilities in building and maintaining roads, aviation, public transit, waterways, railroads, cycling and walking. Our involvement ranges from airport improvements to funding transit buses to planning for river ports. The Department of Transportation has approximately 3,500 employees with four statewide region facilities in Knoxville, Chattanooga, Nashville, and Jackson.



### **Traffic Modeling Senior Transportation Engineer** Traffic Design Division – Traffic Modeling Section Nashville, TN \$104,292 annually

#### **Job Overview**

The Traffic Modeling Senior Transportation Engineer provides traffic modeling expertise to the Traffic Modeling Section. This position collaborates with TDOT Divisions, Project Teams, FHWA, and external stakeholders by evaluating data collection strategies, traffic modeling methodologies, transportation design alternatives, and traffic operations concepts for those projects having the highest degree of risk to the Department. The Traffic Modeling Senior Transportation Engineer implements acquired traffic modeling knowledge that focuses on ensuring quality deliverables, minimizing variability, and increasing the safety and performance of TDOT's transportation system.

The Traffic Modeling Senior Transportation Engineer position ensures Department policies, technical guidance, traffic modeling standards, and procedures are incorporated into traffic modeling deliverables and assists in implementing the TDOT Quality Management Guidelines. The Traffic Modeling Senior Transportation Engineer must identify potential design and operational challenges, exercise engineering judgment, and effectively articulate traffic modeling concepts through training, mentoring, and collaborating as part of a matrix organization.

#### **Essential Job Responsibilities**

Strengthen Project Teams as part of a matrix organization by providing technical expertise and support related to traffic modeling elements for projects having the highest degree of risk to the Department; define critical goals and targeted outcomes for traffic modeling simulations in coordination with the Project Manager; evaluate transportation design alternatives to fully quantify the benefits of proposed solutions, allowing for data-driven decisions; perform traffic simulations using traffic analysis software, including work zone impacts, signal timing optimization, and the viability of detours; evaluate innovative concepts; conduct traffic impact studies; prepare traffic reports and recommendations; proactively assess risk factors; and, for Project Teams associated with Alternative Delivery Contracts, evaluate the cause and effect of implementing Alternative Technical Concepts related to the Request for Proposal (RFPs) with respect to traffic impacts. Optimize the Project Team's ability to mitigate risk and address unanticipated challenges while meeting the project's scope, schedule, and budget using traffic analysis software.

Verify compliance with the TDOT Quality Management Guidelines with respect to traffic modeling elements to identify potential constructability concerns and enhance the safety and performance of TDOT's transportation system. Perform validation of traffic models completed by consultants.

Routinely collaborate with HQ Engineering, Asset Management, and Quality Teams to identify and document knowledge on industry best practices to avoid past errors and ensure TDOT project successes. Assist with modifications to all applicable policies, procedures, design standards, specifications, and special provisions.

Collaborate with the TDOT Technical Training Director and assist in the development of training that addresses acquired knowledge, including technical elements and emerging technologies related to Traffic Modeling elements for the purpose of improving team performance, creating a stronger understanding of traffic modeling as it relates to the transportation industry, inspiring new ideas, and developing skills as technology and modeling software evolve.

Remain current and engaged on revisions to the Project Delivery Network (PDN), Federal and State regulations, standards, and guidelines related to traffic modeling elements; adapt new technologies and best practices that drive TDOT's transportation projects forward; and assist in implementing policies and procedures related to traffic modeling. Collaborate on innovative strategies used as best practices for statewide quality assurance needs. Maintain awareness of traffic modeling-related industry trends and national best practices by participating in AASHTO, industry associations, and national committees.

Provide exceptional customer service to both internal and external customers, including mentoring and providing technical guidance on traffic modeling elements, attending public meetings and local agency meetings, coordinating with other disciplines as part of a matrix organization, exercising effective listening skills, providing prompt responses, maintaining complete and accurate documentation, and communicating effectively.

Assist in the development of a Consultant Acquisition Plan (CAP) for Traffic Modeling services and assist in the oversight of external partners by serving on technical review committees, including assisting with RFP development, attending project-specific marketing meetings, assisting with determining scoring criteria, assisting with project information sessions when applicable, serving as a scorer as part of the consultant acquisition process, and attending de-briefs for consultants where usable feedback must be provided.

Assist in ensuring Traffic Modeling deliverables are consistent, predictable, and repeatable to maintain consistently high levels of achievement, mitigate risk, and establish a track record of success through the implementation of statewide policy, data collection and modeling standards, and acquired knowledge.

### **Qualifications**

- Bachelor's degree in engineering
- Licensed Professional Engineer (PE)
- 6 years of demonstrated competency in developing and implementing an approach to modeling and analyzing traffic data

### **Ideal Candidate**

The Traffic Modeling Senior Transportation Engineer brings the team a remarkable blend of technical expertise and knowledge. They are exceptional project team members excelling at collaboration and communication and are proficient at seamlessly engaging with project teams, leadership, and consultants. They take a proactive and meticulous approach with each project, ensuring that every aspect of traffic modeling meets state and federal regulations. The Traffic Modeling Senior Transportation Engineer is a natural problem solver who overcomes obstacles with innovative solutions, a skill always required when coordinating transportation projects that involve

forecasting and modeling future traffic. They understand the best outcomes are achieved through collective effort and effective communication.