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.

Transportation Engineering Specialist 3 & 4
Design Division – Traffic Modeling Section
$80,784 - $88,860 annually

Job Overview

The Traffic Modeling Transportation Engineering Specialist 3 & 4 supports TDOT Divisions, Regions, Project Teams, Federal Highway Administration (FHWA), and external stakeholders through the application of traffic analyses and modeling calibration and validation in support of investment decisions that impact the Department's transportation infrastructure.

The Traffic Modeling Transportation Engineering Specialist 3 & 4 collaborates with technical disciplines and Project Teams by evaluating data collection strategies, traffic modeling methodologies, design alternatives, and traffic operations concepts to assist in identifying potential risks to the Department.

This position supports the implementation of a consistent and unified approach to the Department's traffic analysis process. It also assists with evaluating and recommending traffic modeling software and hardware to enhance statewide forecasting capabilities and ensure comprehensive network-level benefit evaluations are conducted across the state.

Essential Job Responsibilities for the Transportation Engineering Specialist 3 and 4 include:

Supports to collaborate with the Regions to systematically develop, implement, and maintain statewide policies and standards that promote uniformity and consistency for traffic analyses and modeling. Develop, implement, and maintain the TDOT Traffic Operations Modeling Guidelines document.

Perform localized corridor Bottleneck Congestion Analysis and provide a quarterly Congestion and Travel Reliability Report for each region, integrating with congestion mitigation program planning, development, and design needs.

Leverage innovation, emerging technologies, data sources, and non-traditional strategies to provide microsimulation and modeling analyses. Serve on national committees and participate in regional/national working groups and training opportunities related to Traffic Modeling and Analysis.

Develop, foster, and maintain professional relationships with external stakeholders to further partnering relationships and minimize impacts on program stability. Coordinate with Project Teams to produce traffic modeling in alignment with the project's scope, schedule, and budget as part of a matrix organization.

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 request for proposal (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 consultant de-briefing meeting.

Assist with the Development of methodologies that improve existing traffic analysis tools to allow for the incorporation of Connected and Automated Vehicle (CAV) technologies, including guidance on ITS applications.

Participate in peer exchanges, fostering collaboration both internally and with relevant partners to share ideas, skills, and insights to get the best results. Promote partnerships with local agencies by providing guidance on the use of traffic modeling tools and methodologies.

Provide exceptional customer service to both internal and external customers, 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.

Integrate Quality Management into all deliverables in compliance with the Project Delivery Network (PDN) for the purpose of improving safety and managing congestion. 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. Implement best practices and TDOT policy for traffic modeling elements and assist in ensuring statewide accessibility to acquired knowledge.

Additional Job Responsibilities for the Transportation Engineering Specialist 4 include:

Coordinate with the TDOT Technical Training Director and assist in the development and presentation of training that address the application of traffic modeling tools, the development of statewide technical expertise, and the use of emerging technologies for the purpose of improving team performance, creating a stronger understanding of traffic modeling methods, and disseminating and inspiring new ideas.

Develop a Consultant Acquisition Plan (CAP) for Traffic Modeling services and serve on technical review committees, lead request for proposal (RFP) development, attend project-specific marketing meetings, prepare scoring criteria, lead project information sessions, serve a scorer as part of the consultant acquisition process, and attend consultant de-briefing meetings.

Perform quality control reviews of traffic modeling deliverables that effectively confirm, at a minimum, the accuracy of model inputs and assumptions, calibration and validation results, and technical documentation completeness.

Support efforts to ensure there is a direct relationship between quality and work outcomes by developing and implementing standards for the Traffic Modeling Section and assisting with Quality Assurance for contracts, amendments, and procurement documents associated with the Traffic Modeling Section in accordance with the TDOT Quality Management Process.

Qualifications

The Transportation Engineering Specialist 1 and 2 are part of the Graduate Transportation Engineer (GTE) Program.

Transportation Engineering Specialist 3:

- Bachelor's Degree in Civil Engineering

- 2 Years of Demonstrated Competency in developing and implementing an approach to modeling and analyzing traffic data, or related field

  OR

- Master's Degree in Civil Engineering
- 1 Year of Demonstrated Competency in developing and implementing an approach to modeling and analyzing traffic data, or related field

Transportation Engineering Specialist 4:

- Bachelor's Degree in Civil Engineering
- 3 Years of Demonstrated Competency in developing and implementing an approach to modeling and analyzing traffic data, or related field

  OR

- Master's Degree in Civil Engineering
- 2 Years of Demonstrated Competency in developing and implementing an approach to modeling and analyzing traffic data, or related field

Ideal Candidate

This position is a part of the career path series at TDOT. The Traffic Modeling Transportation Engineering Specialist 3 and 4 possess exceptional problem-solving and communication skills, which enable them to effectively articulate technical concepts to stakeholders. They have an analytical mindset and great attention to detail, which helps them identify inefficiencies and opportunities for improvement. They are skilled in traffic modeling and adept at analyzing complex traffic data and advanced design alternatives. They excel at collaborating with stakeholders to identify risks and develop mitigation strategies. The Traffic Modeling Transportation Engineering Specialist 3 or 4 has the keen ability to see issues at their core and can identify fundamental inefficiencies in transportation systems, offering innovative, data-driven solutions that enhance mobility and safety. Exceptional analytical, problem-solving, and communication abilities are key to enhancing safety and performance within the Department's transportation system.