

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.



Intelligent Transportation Systems (ITS) Transportation Engineer

Traffic Design Division – ITS Section

\$102,300 annually

Job Overview

The Intelligent Transportation Systems (ITS) Transportation Engineer provides ITS design technical expertise to Project teams. This position will provide support to Project Teams directly responsible for delivering projects in accordance with the project's scope, budget, and risk. These projects will range in complexity and risk from simple to highly complex. This position requires critical thinking to problem solve and make well-informed decisions that increase the safety, performance, sustainability, and efficient delivery of Tennessee's transportation system. The ITS Transportation Engineer position requires a professional engineering license and is expected to sign and seal applicable construction plans.

The ITS Transportation Engineer ensures Department policies, technical guidance, procedures, software, websites, and systems are incorporated into ITS design deliverables and assists in implementing the Quality Assurance Program as part of the traffic design activities. This position must effectively articulate technical engineering concepts through training, mentoring, and collaborating as part of a matrix organization.

Essential Job Responsibilities

Enhance the capabilities of the Traffic Design teams by providing specialized technical expertise and support in addressing complex or unique ITS design challenges. This includes areas such as ITS cybersecurity, signal systems, device modernization, pilot test programs, asset management, systems design, construction and maintenance, interoperability advancements, and multi-modal concepts. Ensure the successful implementation of ITS safety and mobility initiatives, while enabling the team to manage unforeseen challenges effectively and efficiently.

Verify compliance with the Quality Management policy with respect to Traffic Design elements with the purpose of reducing plan errors, re-work, right-of-way delays, construction delays, and contractor claims. Assist the Project Teams by providing reviews in alignment with the Project Delivery Network (PDN) and TDOT's Quality Assurance Program, identifying potential constructability concerns in proposed designs, and making recommendations for proactive solutions with other technical disciplines to ensure the needs of the project are met.

Routinely collaborate with the Regions and Asset Management 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, standard drawings, specifications, and special provisions. Stay informed on ITS-related industry trends and national best practices by participating in the American Association of State Highway and Transportation Officials (AASHTO), industry associations, and other appropriate committees.

Serve on Project Teams as part of a matrix organization by providing ITS design expertise, defining expectations for how the Project Team manages risk, and assisting in developing the project vision in alignment with Asset Management. Assist in defining critical goals and intended outcomes for the scope, schedule, budget, and quality in coordination with the Project Manager related to ITS design elements; participate in Risk Management Assessments; provide input at all applicable project milestones per the PDN. Provide support to Project Management staff with respect to the Traffic Design Scope of Work in collaboration with TDOT Environmental, Right of Way, Asset Management, Maintenance, Roadway Design, and Construction; apply context-sensitive ITS design methodologies; attend public meetings as a Department representative to assist with addressing project concerns; effectively coordinating with other technical disciplines within TDOT to address all potential ITS elements as part of the Functional Design Plans development per the PDN. Provide approvals on ITS design-related products and deliverables; when applicable, proactively assess risk factors related to legal aspects, public relations, and safety for ITS design elements.

Provide exceptional customer service to both internal and external customers, including mentoring and technical guidance related to ITS design, 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.

Remain current and engaged on revisions to design codes, standards, and guidelines related to ITS design elements, adapt new technologies and best practices that drive Tennessee's transportation projects forward, implement innovative trends, including advancements with connected and automated vehicles, Mobility-as-a-Service (MaaS), Mobility-on-Demand (MoD), artificial intelligence, and drone technology as potential applications for ITS deployments; assist in implementing policies and procedures related to ITS design. Collaborate on innovative strategies used as best practices for statewide quality assurance needs.

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 ITS Design for the purpose of improving team performance, creating a stronger understanding of ITS elements as they relate to the transportation industry, inspiring new ideas, and developing skills.

Assist in the development of a Consultant Acquisition Plan (CAP) for Traffic Design 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 ITS Design deliverables are consistent, predictable, repeatable, and are accomplished in alignment with TDOT's Quality Management procedures to ensure consistently high levels of quality and achievement, mitigate risk, and establish a track record of success by implementing statewide policy, data collection, processing standards, specifications, and direction. Utilize best practices and TDOT policy for the incorporation of ITS design elements, including access to acquired knowledge across the state.

Qualifications

- Bachelor's Degree in Engineering

- 4 years of demonstrated competency in developing and/or designing transportation projects

Necessary Special Qualifications

- Licensed Professional Engineer (PE)

Ideal Candidate

The ITS Transportation Engineer is an expert in all aspects of traffic design and operations. They possess strong attention to detail and are committed to improving safety and performance. With a wealth of technical expertise, they offer unique solutions to ITS design challenges. The ITS Transportation Engineer's analytical skills allow them to predict and prevent issues before they become problematic, ensuring efficient and reliable transportation designs. They possess excellent communication and collaboration skills, which enable them to effectively communicate complex technical information with stakeholders at all levels.

General Work Conditions

Yes / No

- Is this position generally performed in an office environment?
- Will work for this position be frequently performed in a field environment and may sometimes require working in inclement weather, working in a construction site, being exposed to heavy construction equipment, and doing extensive walking?
- Is this position a combination of office and field environment?
- Is an alternative work schedule including work from home eligible for this position? If yes, how many days will it be work from home and how many days in office?
 -Days from home: up to 2 days
 -Days from office: up to 3 days
- Is this position required to work under exposure to inclement weather and environmental conditions?
- Will this position require travel including overnight?

Physical Requirements		<i>Select the frequency of each physical activity. The activity must be related to the position and consistent with business necessity.</i>			
Physical Activity Required	None	Occasional (less than 1/3)	Frequent (1/3 to 2/3)	Regular (more than 2/3)	
Standing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Walking	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bending	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reaching/stretching overhead	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Crouching or stooping	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Balancing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pushing or pulling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Repetitive use of hands/arms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Repetitive use of legs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Grasping	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lifting – check the frequency for each weight range below. If the job doesn't require any lifting activities, check "None" on each line below.					
Up to 20 pounds	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21 - 50 pounds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
51 – 75 pounds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Carrying - check the frequency for each weight range below. If the job doesn't require any carrying activities, check "None" on each line below.					
Up to 20 pounds	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21 - 50 pounds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
51 - 75 pounds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Eye/hand coordination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Speaking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Hearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Seeing (with correction)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Close vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Distance vision - ability to see objects clearly from a distance, usually from 20 feet or more.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color vision/perception - ability to distinguish colors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Peripheral vision - what is seen on the side by the eye when looking straight ahead.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Depth perception - ability to judge the distance of objects and the spatial relationship of objects at different distances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Position Description Team Members	<i>Provide a list of SMEs who helped develop the position description. Include name and work area.</i>
Andy Barlow	TDOT Director, Traffic Design
Cam Morris	ITS Manager, Traffic Design
Steve Cook	RIC
Chris Petersen	RIC
Lauren Lejeune	RIC