

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. TDOT Aeronautics is located near the John C. Tune Airport in Nashville, TN.



Bridge Rating Senior Transportation Engineer Structures Division – Bridge Performance Section \$107,388 annually

Job Overview

The Bridge Rating Senior Transportation Engineer will provide support to TDOT's Bridge Rating program and software. The work will range in complexity and risk from simple to highly complex. The Bridge Rating Senior Transportation Engineer role requires collaboration with multiple TDOT divisions, project team members, Federal Highway Administration (FHWA), contractors, and other external stakeholders. It requires critical thinking and engineering judgment to problem solve and make well-informed decisions that increase the safety, performance, sustainability, and efficient delivery of Tennessee's transportation system. This position provides engineering functions in the specialized area of load rating and is responsible for providing bridge load rating analysis according to FHWA Specifications for the National Bridge Inventory (SNBI)/National Bridge Inspection Standards (NBIS), TDOT policy, procedure, standards, specifications, and computerized program protocols.

The Bridge Rating Senior Transportation Engineer ensures Department policies, technical guidance, and procedures related to TDOT's Bridge Rating program are current and accurate for incorporation into the project delivery process. This position assists in implementing the Quality Assurance Program as part of the construction division's activities. This position must effectively articulate technical engineering concepts through training, mentoring, and collaborating as part of a matrix organization. The Bridge Rating Senior Transportation Engineer will assist with ensuring all applicable documentation and data is collected and stored to assist with timely and accurate invoicing and project close-outs.

Essential Job Responsibilities

Coordinate resources and assist Project Managers as the Bridge Rating Subject Matter Expert (SME) in the management of external partners together with the Professional Services Division, including the negotiation of contracts, review of consultant invoicing, development of scopes, management of contract tasks, compliance monitoring, and completion of consultant grading. Integrate Quality Management into all Bridge Rating products, systems, and deliverables.

Perform and review in-house load ratings and evaluations on bridges, including highly complex structures. Analyze complex structures such as Nonredundant Steel Tension Members (NSTM) bridges, frames, curved steel structures, etc. using analysis methods or other modeling software to determine structural capacity. Conduct structural reviews and structural analyses as necessary when critical deficiencies are identified.

Assist in the determination of scopes for the Bridge Preservation Work Program with the Bridge Preservation Section. Conduct field reviews to determine appropriate bridge inspection practices, load rating postings, repair materials, methodologies, and rehabilitation projects.

Assist in the development and delivery of Bridge Rating training and mentoring to TDOT and external engineering staff. Assist in the development of training and technical guidance that addresses acquired knowledge, risk management, technical design elements, and emerging technologies and innovations related to bridge ratings for the purpose of improving team performance, creating a stronger understanding of the transportation industry, inspiring new ideas, and developing skills. Administer and manage TDOT's Bridge Rating program and software.

Manage and take ownership of change, clarify your vision of TDOT's Bridge Rating efforts, communicate effectively, remain transparent, and hold yourself accountable to develop, maintain, and grow TDOT's load rating capabilities, data, software, and systems.

Serve on Project Teams as part of a matrix organization by providing bridge rating expertise and reviews, assisting in developing proposal contract documents for project lettings, and contributing to bid reviews and bid analysis for alternative delivery projects. Ensure alignment and compliance with Division and Section metrics and performance goals.

Provide exceptional customer service to both internal and external customers by exercising effective listening skills, providing prompt responses, maintaining complete and accurate documentation, and communicating effectively. Remain current on bridge rating-related industry trends and national best practices by participating in American Association of State Highway and Transportation Officials (AASHTO), industry associations, and other appropriate committees as assigned.

Routinely collaborate with appropriate TDOT staff and external stakeholders to identify and document knowledge on industry best practices to avoid past errors and ensure TDOT project successes.

Assist in ensuring Bridge Rating deliverables are accurate, consistent, predictable, and repeatable to provide consistently high levels of achievement, mitigation of risk, and an established track record of success. Assist the supervisor as needed on various reviews and tasks within the unit. Assist with modifications to all applicable policies, procedures, design/load rating standards, specifications, and special provisions.

Research information to stay up to date on load rating standards, computer applications, and software programs. Attend training that is relevant to the position as requested by the supervisor.

Qualifications

- Bachelor's degree in civil engineering with an emphasis in structural engineering preferred
- 6 years of demonstrated competency in bridge rating / bridge engineering related field
- National Bridge Inspection Standards (NBIS) and (Nonredundant Steel Tension Members) NSTM Team Leader certified preferred

Necessary Special Qualifications

- Licensed Professional Engineer (PE)

Ideal Candidate

The Bridge Rating Senior Transportation Engineer is crucial in ensuring the safety of Tennessee's transportation system. They possess a wide range of technical skills, from analysis and design to rating and engineering judgment, that are essential for all aspects of structural engineering. As a leader among their peers, the Senior Transportation Engineer for Bridge Rating works closely with other engineering experts and project managers to evaluate the adequacy of the state's structures. Their communication skills are as impressive as their technical skills, as they can easily visualize the necessary steps and effectively communicate them to their team, peers, and leadership.