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.

Statewide Emerging Technologies Transportation Engineer
Traffic Design Division – ITS Section
Nashville, TN
$115,008 annually

Job Overview

The Emerging Technologies Engineer is a statewide transportation engineer position that will manage all aspects of TDOT's Emerging Technologies processes and systems as part of a Project Team directly responsible for delivering projects for all phases of the Project Delivery Network (PDN) in accordance with the project's scope, budget, risk, and the TDOT Strategic Plan. These projects will range in complexity and risk from simple to highly complex. The Emerging Technologies role requires collaboration with multiple TDOT Divisions, project team members, contractors, consultants, 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 TDOT's transportation system.

The Statewide Emerging Technologies Transportation Engineer ensures Department policies, technical guidance, procedures, software, and systems related to Emerging Technologies are current and accurate for incorporation into the project delivery process. Assists in implementing the Quality Assurance Program as part of the State Traffic Design Division's activities to reduce errors, delays, and contractor claims. Assist in improving transportation safety and mobility and enhancing American productivity through advanced wireless and fiber communication technologies. The Emerging Technologies Engineer assists with monitoring and managing the scope, permitting, schedule, and budgets of all Emerging Technologies projects and working with the Project Management Division to make the required adjustments as necessary to ensure that the work completed is in alignment with the Department's Asset Management and Strategic goals.

Essential Job Responsibilities

Serve on Project Teams as part of a matrix organization as the Emerging Technologies Subject Matter Expert (SME) that supports transportation design elements, developing the project vision in alignment with Asset Management objectives and funding allocation, defining critical goals and intended outcomes for the scope, schedule, budget, and quality in coordination with the Project Manager; applying context-sensitive design strategies; implementing innovative concepts; proactively assessing risk factors; and, for Project Teams associated with Alternative Delivery Contracts, forecasting the cause and effect of implementing Alternative Technical Concepts related to the Request for Proposal (RFPs), project cost, and construction timing. Optimize the Project Team's ability to mitigate risk and address unanticipated challenges while meeting the project's scope, schedule, and budget.

Manage multiple research study priorities relating to transportation innovations, technologies, electrification, connected and automated vehicles (CAV), communication advancements, systems engineering, proof of concept/pilot project/testbeds, and other related TDOT emerging technology needs. Manage resources from other internal and external opportunities that support research studies for TDOT's emerging technologies and ITS project development and implementation needs.

Assist with presenting project findings, conclusions, and recommendations to internal and external stakeholders for implementation or further research. Collaborate with FHWA and other state DOTs, while studying the conclusions on the Transportation Research Board (TRB) and Transportation Research Information Directory (TRID) site. Responsible for taking a multi-modal approach to all emerging technologies concepts and initiatives, including but is not limited to highways, arterials, transit, bicycle and pedestrian, freight, aeronautics, and rail.

Participate in the development and implementation of a Connected and Automated Vehicle and Emerging Technologies Strategic Plan. Also, participate and assist in the development and implementation of an ITS Strategic Plan. Collaborate with the Unmanned Aircraft Systems (UAS) Program staff to develop and implement policy, procedures, and traffic-related initiatives related to the use of UAS within the Traffic Division. Ensure alignment with the organizational TDOT Strategic Plan and the Transportation Systems Management and Operations (TSMO) Strategic Plan, including the application of emerging technologies.

Routinely identify, document, and effectively collaborate with HQ and Asset Management on acquired knowledge that includes maximizing project successes, acknowledging national best practices, and avoiding past errors. Assist with modifications to all applicable policies, procedures, design standards, specifications, and special provisions.

Assist in the development of Consultant Acquisition Plans (CAP) and oversight of external partners by serving on selection committees for professional engineering services as part of the Brooks Act. Provide support in the development of the Request for Proposal (RFP), attending project-specific marketing meetings, determining scoring criteria, participating in project information sessions, serving as a scorer as part of the consultant acquisition process, and attending de-briefs with consultants. Conduct independent reviews of the engineer's cost estimate at project milestones during pre-construction activities and provide the final cost estimate that encompasses relevant factors related to the scope of a project, the cost of resources, and national and global market trends.

Remain current on national best practices related to the placement of emerging traffic technologies within TDOT's ITS and Traffic Design Division as it relates to transportation projects, facilities, and operations activities; assist with the development of plans, legislation, and regulations that seek to increase traffic technologies, inspire innovation, and improve mobility for TDOT employees, contractors, and the traveling public. Incorporate research, evaluations, and implementation of emerging technologies into highway corridor designs and transportation projects that will improve efficiency, effectiveness, reliability, and safety of TDOT's transportation network. Integrate statutory and regulatory requirements into TDOT's guidance documents, processes, and procedures. Assist with modifications to all applicable policies, procedures, design standards, specifications, and special provisions. Keep current on other related regional/national initiatives.

Provide exceptional customer service to both internal and external customers, exercising effective listening skills, providing prompt responses, maintaining complete and accurate documentation, coordinating with other disciplines as part of a matrix organization, and communicating effectively.

Assist in the development of training, mentoring, and technical guidance to both internal and external customers, that addresses acquired knowledge, risk management, technical design elements, and emerging technologies related to Emerging Technologies for the purpose of improving team performance, creating a stronger understanding of the transportation industry, inspiring new ideas, and developing skills. Participate in regional/national working groups

and training opportunities related to Emerging Technologies. Administer and manage TDOT's estimating program and software.

Assist in ensuring the ITS Section is consistent, predictable, and repeatable to provide consistently high levels of achievement, mitigation of risk, and an established track record of success.

Qualifications

- Bachelor's degree in engineering
- Licensed Professional Engineer (PE)
- 12 years of demonstrated competency in developing and/or constructing transportation projects.