

## 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.



### **Hydraulic Transportation Engineer** Region Preconstruction – Roadway Design Section \$99,348 annually

#### **Job Overview**

The Hydraulic Engineer will manage the integration of TDOT's Hydraulic and Hydrology processes and systems as part of a Region's Project Team directly responsible for delivering projects for all phases of the Project Delivery Network (PDN) in accordance with the project's scope, budget, and risk. These projects will range in complexity and risk from simple to highly complex. The Hydraulic role requires collaboration with multiple TDOT Divisions, project team members, contractors, consultants, and other external stakeholders.

The Hydraulic Engineer evaluates and ensures Department policies, technical guidance, procedures, software, and systems for Hydraulic work on projects are current and accurate for incorporation into the project delivery process. This position implements the Quality Assurance Program as part of the Preconstruction Division's activities to reduce errors, construction delays, and contractor claims. This position must effectively articulate Hydraulic concepts through training, mentoring, and collaborating as part of a matrix organization. The Hydraulic Engineer assists with monitoring and managing the scope, schedule, and budgets 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 by providing technical expertise related to transportation Hydraulic Design elements; develop the project vision and design solutions in alignment with Asset Management objectives and funding allocation; define critical goals and intended outcomes for the scope, schedule, budget, and quality in coordination with the Project Manager; apply context-sensitive design strategies; implement innovative concepts; proactively assess and advise on risk factors; and, for Project Teams associated with Alternative Delivery Contracts, forecast the cause and effect of implementing hydraulic implications of Alternative Technical Concepts and impacts 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.

Integrate Quality Management into all deliverables in compliance with Asset Management's business objectives and alignment with the PDN. Reduce plan errors, right-of-way delays, construction delays, and contractor claims; assist Project Teams

by providing reviews as part of TDOT's Quality Assurance Program. A key part of the quality process is that Hydraulic Transportation Engineer effectively coordinates and integrates hydraulic design solutions with all disciplines on a project team.

Serve on selection committees for professional engineering services as part of the Brooks Act, including assistance with drainage aspects of RFP development, attendance at project-specific marketing meetings, assistance with determining scoring criteria, assistance with project information sessions. When applicable, serve as a scorer as part of the consultant acquisition process, and attendance at de-briefs for consultants where usable Hydraulic feedback must be provided.

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

Assist in the development of the Hydraulic aspects of a consultant acquisition plan. Assist in the oversight of external partners by serving on selection committees for professional engineering services as part of the Brooks Act. Assist with RFP development, attend project-specific marketing meetings, assist with determining scoring criteria, assist with project information sessions. When applicable, serve as a scorer as part of the consultant acquisition process, and attend de-briefs for consultants where usable drainage feedback must be provided.

Remain current on revisions to design codes, standards, and guidelines related to transportation Hydraulic design components, including trends and technologies; perform the design and analysis of design for components on complex projects; and assist and advise with Risk Assessments. Maintain awareness of local, state, and federal drainage policies, procedures, software, and practices to ensure designs meet all criteria and coordinate with each of those entities as needed.

Provide exceptional customer service to both internal and external customers, including mentoring and technical guidance for Project Teams, 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 training that addresses acquired knowledge, asset management objectives, risk management, technical design elements, and emerging technologies related to Hydraulic in transportation for the purposes of improving team performance, creating a stronger understanding of the transportation industry, inspiring new ideas, and developing skills.

Assist in ensuring preconstruction deliverables are 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 civil or environmental engineering
- Licensed Professional Engineer (PE)
- 4 years of demonstrated competency in developing and/or constructing transportation projects

### **Ideal Candidate**

The Hydraulic Transportation Engineer is a strong leader with a proven hydraulic engineering and design track record. They maintain strong interpersonal relationships with staff at all levels, not only to identify needs, secure commitments, and monitor the progress of tasks but also to communicate progress to senior Region Leadership, provide recommendations for addressing challenges, and advocate for the right hydraulic designs. They are detail-oriented which ensures that every aspect of the hydraulic design is thoroughly considered and optimized. They are always looking for better, innovative, and impactful solutions to ensure safety and efficiency.