State Materials and Tests Division – State Laboratory Section

State Materials and Tests Division Summary

This classification is within the Tennessee Department of Transportation (TDOT) Bureau of Engineering. The State Materials and Testing (M&T) Division plays a key role in developing performance-oriented solutions for Tennessee's ever-changing transportation needs. The Division focuses on the resiliency and sustainability of TDOT's transportation system by minimizing consumption of non-renewable resources, increasing the flexibility of the highway network, and implementing cost-effective innovation into the transportation system.

The M&T Division establishes the criteria for the acceptance, verification, and certification of materials and products used on TDOT projects and ensures that all materials used in the construction and maintenance of Tennessee's highways meet all contractual requirements and appropriate TDOT, ASTM, and AASHTO specifications. The Division provides timely solutions to material-related concerns and technical training to TDOT and its transportation partners.

State Laboratory Section

The State Laboratory Section conducts the testing for materials used in the construction and maintenance of Tennessee's highways and, in partnership with external stakeholders, assists in the evaluation of innovative products. The State Laboratory Section operates the Central Laboratory, which includes the Asphalt, Chemical, and Physical sub-laboratories and oversees regional and satellite materials labs.

The Central Laboratory Section maintains AASHTO accreditation and participates on AASHTO committees and AASHTO's National Testing Product and Evaluation Program (NTPEP).

EPIC Modifications

- *The Lab Process Control Specialist for Regions 1, 2, and 4 has responsibilities to the State Process Control Team Lead*
- *The organizational structure is consolidated, giving the Lab Manager four direct reports and removing supervisory roles for which there was one direct report.*
- *The Chemical Lab is now a stand alone lab instead of reporting to the Physical Lab Supervisor – allows chemical lab to have more fire power by adding more technicians and ability.*

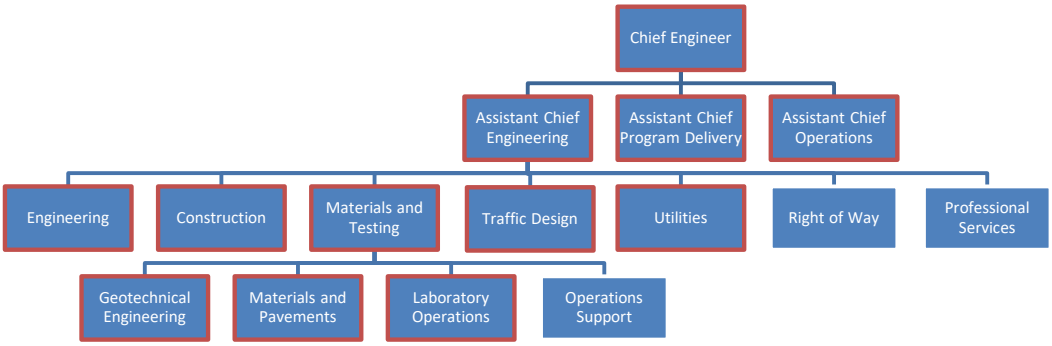
Benefits

- *Statewide consistency will result from having a dedicated lab specialist in each region with centralized oversight*
- *An increased focus and integration of efforts across all material laboratories as a result of centralizing decision making*
- *Improved attention at the regional and satellite laboratories to process control*
- *Provides succession planning and career advancement opportunities for non-licensed staff, developing leaders both functionally and culturally*

Challenges

- *Ensuring continuous and effective collaboration is occurring between the State Lab and Region Labs*
- *Developing standards and training for implementation of emerging technologies*
- *Ensuring accountability in establishing and delivering on Performance Metrics*
- *Ensuring consistency in testing, deliverables, and implementation of standards across TDOT labs as part of the Quality Assurance process*
- *Overcoming the limited availability of qualified local consultant laboratories*
- *Mitigating turnaround time for outsourced acceptance testing*
- *Creating a Consultant Acquisition Plan for laboratory operations*
- *Developing a strategy for recruitment and retention of qualified staff*
- *Ensuring M&T Labs have active participation and integration with the Project Teams as part of a matrix organization in delivering successful projects that meet schedule, budget, and scope requirements*

Functional Organizational Chart



TN TDOT Department of Transportation

Section Responsibilities

- *Research and implement emerging technologies that improve efficiency, effectiveness, reliability, and safety of TDOT's transportation network*
- *Implement and maintain statewide policy, design standards, specifications, and direction that promote uniformity and consistency for Laboratory Operations*
- *Ensure all TDOT materials-related policies, procedures and practices meet relevant CFR requirements*
- *Maintain laboratory accreditation for Central Lab and maintain qualifications for regional labs*
- *Implement and manage a quality assurance policy, for use with Central Lab and all Region Labs obtaining and utilizing testing data, with the purpose of eliminating redundancy and re-work*
- *Manage the minimum qualifications, administration and oversight for the State and Region Laboratories acceptance and/or verification of materials and products*
- *Conduct laboratory testing and analysis in support of developing, updating, and maintaining TDOT material related specifications, requirements, standards, and acceptance practices*
- *Conduct testing and analysis in support of Field Operation and M&T research projects*
- *Serve as the department's laboratory and materials subject matter experts in teaming with industry*
- *Conduct annual inspections of each Region Lab and conduct external laboratory and production facility reviews to ensure contractual and specifications compliance*
- *Assist Field Operations and project staff in dispute resolution with contractors, producers, and/or suppliers in areas requiring laboratory testing and analysis*
- *Provide technical expertise and support in matters related to laboratory operations, including specific training to TDOT staff regarding the use of equipment, types of testing, application of tools, and management and coordination of testing data*
- *Facilitate recruitment of future staff and provide incentives to learn and grow in the area of laboratory operations by developing and implementing a Work Force Development plan, including training to assist with retaining new hires*
- *Collaborate with the Regions in developing and implementing a Consultant Acquisition Plan for laboratory operations*
- *Maintain and inventory laboratory equipment, including equipment that has been provided to the Regions*
- *Develop and manage the financial performance for the State Laboratory Section and provide coordination and oversight with the Regions for expenditures, maintaining alignment with TDOT financial processes to ensure transparency and accountability*
- *Serve on selection committees for professional services as part of the Brooks Act, including assistance with RFP development, attendance at marketing meetings, assistance with determining scoring criteria, assistance with project information sessions, when applicable, serving as a scorer as part of the consultant acquisition process, and attendance at de-briefs for consultants where usable feedback must be provided*
- *Create and implement a consultant evaluation form tailored to address consultant selections for laboratory operations*
- *Assist on Project Teams as part of the Project Delivery Network by providing input at all applicable project milestones, including Project Kick-Off, Risk Workshops, Project Scoping meetings, Plan-in-Hand Field Review meeting, and the Plans, Specs, and Estimates meeting, when applicable*

Commented [MC1]: Field Ops manages IA

Commented [MC2]: Field Ops certifies contractor lab personnel

Commented [MC3]: Almost impossible to know this at the laboratory level. Should be a function of the Regional teams that are better placed with operations.

Commented [MC4]: osqp

Commented [MC5]: Field Ops Regions and OSQP function, not lab

Commented [MC6]: Field Ops

- *Monitor the quality and performance of TDOT's highway network and effectively coordinate with Design and Construction in tracking data to predict and prevent future concerns*
- *Coordinate with Project Teams to produce materials and testing information within the project's scope, schedule, and budget as part of a matrix organization*
- *Participate in peer exchange, fostering collaboration both internally and with relevant partners to share ideas, skills, and insights to get the best results*
- *Implement performance metrics and ensure State Laboratory performance metrics are met*

Section Metrics and Performance Goals

- *Maintain accreditation*
- *3 or better on X% of Proficiency Test Results*
- *Action plans for any 2 or lower rating*
- *Earn some level of satisfaction score on internal and external customer surveys*
- *Some level of turnaround time and accuracy for sampling, testing and analysis*

Section Deliverables

- Complete, accurate, and timely Test reports

Internal Partners

- *Region labs*
- *Field Operations*
- *Geotechnical Engineering*
- *Operations Support & Qualified Products*
- *TDOT Regions*
- *Project Teams*
- *TDOT HQ Divisions*

External Partners

- *Materials suppliers and producers*
- *Contractors*
- *Local municipalities and other state agencies*

- *Design and CEI Consultants*
- *Academia*
- *Federal Agencies*
- *AASHTO/ASTM/NTPEP*
- *Accreditation Agencies (re: Source/CCRL)*

Data Systems

- *To be determined*