



RESEARCH NEED STATEMENT

Call for Projects 2015

Project Research Title: Traffic Management Program

TDOT Sponsor Director: Tanisha Hall

List TDOT Research Team Lead: Jeff Murphy, Carlos McCloud, and Brian Terrell

List TDOT Research Team Members: Karin Watts, Chen Chin-Cheng, Nick Weander, Jack Qualls and Lia Prince

1. Define the problem or research requested. What is the goal/objective of the research?

The purpose of this research is to determine best practices from other State Department of Transportation Traffic Monitoring Program(s). The objective of this research is to: Review and compare TDOT's Traffic Monitoring Program with other State DOT(s); Research the cost of improving the Traffic Management Program with the results of the best practices; Research new technologies for traffic data collection methods and traffic data statistical analysis such as seasonal factors and variances; and write a detailed report with recommendations and guidelines on improving the Traffic Monitoring Program..

2. Is this research a continuation of a past or present project?

☒ No ☐ Yes

If yes, provide current research project title, RES # and reason for the project continuation.

3. Describe anticipated benefits/expected deliverables.

Deliverables: A detailed report outlining the best practices of other states noting the differences between TDOT and other states; The cost differences associated with implementing the best practices; New technology efficiencies - cost, accuracy, ease of use by field technicians, and reliability; Statistical formulas that will improve season formulas, day, week, month variances if any; miscellaneous improvements to the Travel Monitoring Program.

Benefits: Improved Traffic Management Program; increased efficiencancy; accurate and reliable data; and improve business operatons and improve data sharing with local partners.

4. What is your timeline for completion of the research?

1 year

5. List the anticipated tasks for this research.

- Compare TDOT's Traffic Management Guide with Federal Highway Administration (FHWA) Traffic Management Guide

- Use the comparison of the Traffic Management Guides to discover best practices from other States
- Document best practices in relation to the FHWA Traffic Management Guide and note cost differences and implementation cost of documented best practices
- Document New Technology related to Traffic Data Collection which includes cost, accuracy, ease of use by field technicians, and reliability
- Review formulas for time of (day, week, month, & year) and seasonal variances/factors. Are current formulas meeting accuracy standards and program efficiencies?
- Review the following: How many Automatic Traffic Recorder(s)ATR, Electronic Data Libray(s) (EDL) and cycle count stations are needed to effectively manage the program? What are the optimal stations and/or what are the minimal stations needed to effectively manage the program by station type
- Final Report with a detailed description of recommendations and guidelines on improving the Traffic Monitoring Program

6. Describe how the project results will be implemented?

The project results will detail the goals for improving the Traffic Monitoring Program. Due to budget constraints, it should determine goals based on return of investment and current operating cost.

7. Will this study produce software, web page or other technology that will involve the Information Technology Division?

☒ No ☐ Yes, please describe:

8. Will training be provided to employees as a result of this research?

☒ No ☐ Yes, please describe:

9. Will this research involve equipment or materials purchase?

☒ No ☐ Yes, please describe:

10. Research must support the Long Range Transportation Plan Policy Recommendations **and/or** TDOT Operational Goals and/or Strategic Initiative. *(See attachments for additional information)*
Please indicate which categories the research will support:

Transportation Long Range Plan Policy Recommendations

- ☐ (A) Accessibility
- ☒ (B) Safety, Security, and Transportation Resilience
- ☐ (C) Coordination, Cooperation, and Consultation
- ☐ (D) Demographic and Employment Changes and Trends
- ☒ (E) Freight Logistics and Planning
- ☐ (F) Financial
- ☐ (G) Mobility
- ☒ (H) Travel Trends and System Performance

TDOT Operational Goals and/or Strategic Initiative

- ☐ (A) Deliver transportation projects on schedule and within budget
- ☐ (B) Maintain the state transportation system to protect the long term investment in our infrastructure assets
- ☒ (C) Operate and manage Tennessee's transportation system to provide a high level of safety and service to our customers and workers
- ☐ (D) Expanding mobility choices to maximize access
- ☒ (E) Dramatically change the paradigm for delivery of transportation products and service to improve the efficiency and effectiveness of Tennessee's transportation network

11. Please explain how the research supports the Long Range Transportation Plan Policy Recommendations **and/or** TDOT Operational Goals and/or Strategic Initiative selected above:

The Traffic Monitoring Program is responsible for reporting traffic data to FHWA, Highway Performance Monitoring Systems (HPMS), and other TDOT programs and applications to use in monitoring the transportation system. Also, traffic data is used in projecting future growth and needs assessments. Furthermore, traffic data is very important in determining travel trends, system performance, planning and freight planning, and improves the efficiency and effectiveness of Tennessee's Transportation Network by providing data driven analysis.

For additional information, please contact:

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