



RESEARCH NEED STATEMENT

Call for Projects 2015

Project Research Title: Highway Safety Manual, Safety Performance Functions (SPF) and Roadway Calibration Factors

TDOT Sponsor Director: Steve Allen

List TDOT Research Team Lead: Brian Hurst

List TDOT Research Team Members: Jim Waters, Van Colebank, Brian Terrell

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

The goal of this research is to assist the Department in moving forward in adopting the Highway Safety Manual's predicted modeling process. To perform this task, we are needing to develop calibration factors and we are proposing the researcher to calculate these factors for the Department.

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.

This function will benefit the Department by predicting the possible number and severity of crashes as it relates to a road type, road class and the additions of proposed safety countermeasures.

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

one year

5. List the anticipated tasks for this research.

6. Describe how the project results will be implemented?

The project will be developed with coordination between the Information Technology Division, Long Range Planning Division and the Strategic Transportation Investments Division providing input and guidance along the way. The researcher may need to purchase software in order to perform the necessary calculations. If so, then the TDOT IT Division and TDOT STI Division should be contacted and a meeting scheduled to discuss the possible options. Once the software/application is up and running, the software/application will be used by TDOT STI Division staff and TDOT Information Technology will provide maintenance.

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

☐ No ☒ Yes, please describe:

It will require either off the shelf software or researcher developed software to be consistent with TDOT Information Technology Division architecture standards. It will need to integrate data from appropriate systems including, but not limited to, E-TRIMS to obtain crash data, roadway elements and other information. The need to develop software should be evaluated carefully to see if the main results of research are the required calculation algorithms, statistics, data queries, etc. that could be documented to be built into custom software by TDOT IT.

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

☐ No ☒ Yes, please describe:

Staff from the Information Technology Division, Traffic Operations Division, Long Range Planning and the Strategic Transportation Investments Division will need to know how to update and maintain the software/application or analysis calculations/components.

9. Will this research involve equipment or materials purchase?

☐ No ☒ Yes, please describe:

Possibly, depending on what software will be proposed for purchase or developed by the researcher and then turned over to TDOT for continued maintenance and enhancement. Where possible this research should focus around TDOT Information Technology architecture standards. If other technology outside of existing TDOT standards is deemed necessary then recommendations can be considered on a case by case basis.

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:

This research supports the Long Range Transportation Plan Policy Recommendations and TDOT Strategic Initiatives through providing safety benefit for all stakeholders which ultimately leads to improving the safety of transportation facilities for Tennessee's traveling public.

For additional information, please contact:

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