REQUEST FOR PROPOSALS
LTRC Project No. 26-1SA, SIO No. DOTLT1000603

Pavement Markings Retroreflectivity - Enhancing Traffic Safety

PROBLEM STATEMENT

Pavement markings delineate travel lanes and offer alignment guidance to provide beneficial information to the drivers. In order to advance safety and mobility, pavement markings must be visible during day and night-time driving conditions. Furthermore, to retain their effectiveness and longevity, regular reflective pavement markers maintenance is required. According to the Department of Transportation and Development (DOTD) Pavement Markings Manual, which serves as a reference for both selecting pavement markings and installation of markings, "existing roadway pavement markings should be inspected at night annually or as required by maintenance schedules to determine if replacement markings are needed to meet DOTD minimums for retroreflectivity."

To improve driver visibility needs during nighttime, the FHWA published a final rule (Federal Register 87 FR 47921, with effective date September 6, 2022) to update the Manual on Uniform Traffic Control Devices (MUTCD) to provide standards, guidance, options and supporting information relating to maintaining minimum levels of retroreflectivity for pavement markings, specifically establishing minimum maintained retroreflectivity levels for longitudinal pavement markings on all roads with speed limits of 35 mph or greater. According to this rule, applicable agencies are required to implement a method for maintaining pavement-marking retroreflectivity at or above minimum levels, providing a 4-year compliance date for implementing the method. Therefore, DOTD is in need to understand factors influencing pavement marking retroreflectivity for all type of roads and conditions in Louisiana to guide the implementation of a maintenance method or combination of methods for maintaining pavement-marking retroreflectivity at or above minimum established levels. Additionally, we need to study the safety effects of the improvements in pavement marking visibility, especially for roadway and lane departure crashes during nighttime, in order to reduce fatal and serious injury crashes on Louisiana roadways.

OBJECTIVES

The objective of this research is to develop cost-effective recommendations for maintaining pavement-marking retroreflectivity on state highways to advance safety and mobility in Louisiana. An additional objective is to evaluate the traffic safety impact of pavement marking retroreflectivity.

RESEARCH APPROACH

The Louisiana Transportation Research Center (LTRC) is seeking the insight of proposers on how best to achieve the research objectives. Proposers shall describe research plans that can be realistically accomplished within the constraints of available funds and contract time as allowed in this Request for Proposal (RFP). Proposals must present the candidate's current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach in meeting the research objectives.

For each phase of the proposed research, itemize and discuss the tasks necessary to fulfill the objectives. Task descriptions are intended to provide a framework for conducting the research and identifying deliverables. ***Refer to section 3.3.5 of the LTRC Manual of Research Procedures (2025 edition) for more guidance.***
https://www.ltrc.lsu.edu/pdf/2024/LTRC_Research_Manual.pdf

The research shall address, at a minimum, the following issues:

- Review literature to document existing pavement marking practices and maintenance plans, including Louisiana and other states, and materials to improve safety and visibility, identify economical restriping options, acquire data on the documented performance of striping paint and glass bead materials across multiple vendors, and review the threshold set for retroreflectivity for different type of roads stated in the MUTCD;
- Document current DOTD plans for monitoring, evaluating, and implementing striping programs, approaches to enhancing safety through retroreflectivity markings and procedures for restriping; survey the DOTD Districts and Headquarters traffic engineers to find out striping practices and methods for checking retroreflectivity within their purview;
- Select specific projects to evaluate roadway data for longevity of that striping, obtain retro reflectometer readings at signalized intersections all lane dividing markings within 150 to 200 ft. of the stop line at all approaches, and explore factors that affect the performance of pavement marking retroreflectivity over their service life;
- Select specific projects with improved pavement markings retroreflectivity to perform crash analysis for target crashes (roadway and lane departure and nighttime crashes) to understand their safety impacts;
- Develop recommendations to implement effective methods for maintaining pavement-marking retroreflectivity at or above minimum levels, and generate information for increasing the efficacy of pavement striping and retroreflectivity of pavement marking.

DELIVERABLES

The proposal shall include project deliverables for appropriate tasks. Deliverables shall be due as defined in the proposal. The proposal shall include at a minimum the following deliverables:

- Biannual Reports
- Presentations to the Project Review Committee (PRC)
- Final Report and Technical Summary

SPECIAL NOTES

A. LTRC research projects will be conducted in accordance with the LTRC Manual of Research Procedures, 2025 edition.
https://www.ltrc.lsu.edu/pdf/2025/LTRC_RESEARCH_MANUAL.pdf

B. Any work that is anticipated to be required from LTRC or DOTD shall be specifically detailed in the proposal.

C. Any surveys or questionnaires developed by the research team shall be reviewed and approved by the PRC prior to distribution.

D. LTRC projects are intended to produce results that will be applied in practice. It is expected that the implementation of the results of this research into practice will evolve as a concerted effort during this project. The final report must contain an implementation plan to include, as a minimum, the following:

a. The "product" expected from the research;
b. A realistic assessment of impediments to successful implementation;
c. The activities necessary for successful implementation; and
d. The criteria for judging the progress and consequences of implementation.

E. To assist in the implementation process, the investigators of this research shall present the final results to LA DOTD officials in an oral presentation to be held in Baton Rouge, Louisiana at LA DOTD Headquarters after acceptance of the final report.

F. The proposal should include travel to meet with the Project Review Committee for a "kick off" meeting, presentation of interim report, and presentation of the final report at a minimum. Funds budgeted for travel shall be limited to what is necessary for the conduct of the research. Funds shall not be budgeted for conference travel. Funding for technology transfer of research results are available upon request subject to LTRC approval and available funds.

G. LTRC's mission includes the support of higher education in Louisiana. Consultant and out-of-state institutions submitting proposals are encouraged to cooperate and collaborate with Louisiana universities for the purpose of sharing of knowledge and increasing transportation expertise in the academic community.

H. Graduate assistance stipends are allowed. Tuition reimbursement or tuition remission rates applied to stipends are not allowed.

I. To equitably answer any questions regarding this Request for Proposals, the Louisiana Department of Transportation and Development (LA DOTD) website will be updated with questions and answers and related documents regarding the project.
https://wwwapps.dotd.la.gov/engineering/ccs/cppr/ccs_advertisements.aspx#gsc.tab=0
LA DOTD makes these documents available for informational purposes only to aid in the efficient dissemination of information to interested parties. LA DOTD does not warrant the documents against deficiencies of any kind. The data contained within this web site will be periodically updated. Interested parties are responsible to be aware of any updates. Questions regarding this RFP should be submitted in writing to the LTRC contact person. Questions must be received by close of business seven calendar days prior to deadline date.

J. Consultants and business entities shall be registered with the Secretary of State in order to be able to work in Louisiana prior to award of contract.
http://www.sos.la.gov/Pages/default.aspx

K. If Sub-Consultants/Entities are used, the Prime Consultant/Entity must perform a minimum of 51% of the work for the overall project.

L. LTRC reserves the right to withhold invoice payments for delinquent deliverables as defined in the proposal.

Note: At Project Manager's discretion, all in-person meetings may be changed to virtual meetings.

ESTIMATED COST OF RESEARCH
$300,000

ESTIMATED COMPLETION TIME
21 Months *(includes 3 months for review and approval of final report)*

LTRC PRIMARY CONTACT
Julius Codjoe, Ph.D., P.E.
Special Studies Research Administrator
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AUTHORIZATION TO BEGIN WORK:
March 1, 2026 (estimated)

PROPOSAL FORMAT
All proposals are required to be formatted according to LTRC Manual of Research Procedures. Section 3.3 provides guidance on proposal development. A copy of the Manual may be downloaded from our website:
https://www.ltrc.lsu.edu/pdf/2025/LTRC_RESEARCH_MANUAL.pdf

PROPOSAL SELECTION
The Project Review Committee selected for this project will review, evaluate and rank all proposals received using the criteria established on the attached proposal review form.

DEADLINE FOR RECEIPT OF PROPOSALS
The proposal must be received by LTRC by the close of business day of January 21, 2026. An electronic copy must be submitted to Sheri Hughes via Sheri.Hughes@la.gov before the due date.

Proposals should be submitted to:
Samuel B. Cooper III, Ph.D., P.E.
Director Louisiana Transportation Research Center
4101 Gourrier Ave.
Baton Rouge, LA 70808