

REQUEST FOR PROPOSALS

LTRC Project No. 22-2SA, SIO No. DOTLT1000426

Evaluation of Louisiana’s Systemic Safety Projects for Roadway Departures on Rural Curves

PROBLEM STATEMENT

In recent years, Louisiana Department of Transportation and Development (LA DOTD) has made significant progress in deploying various low-safety countermeasures across the state. Despite these many safety countermeasures, roadway departure crashes are overrepresented on Louisiana roads. In 2019, roadway departure crashes made up almost 59% of all fatal crashes and 44% of all suspected serious injury crashes in Louisiana. The goal of Louisiana Strategic Highway Safety Plan (SHSP) Infrastructure and Operations Emphasis Area Team is to halve the roadway departure fatalities and severe injuries by 2030 (compared with 2009). Therefore, to address these roadway departure crashes, LA DOTD applied a systemic safety approach to reduce target crashes using the Federal Highway Administration (FHWA) guide and Thurston County Systemic study. The two-lane rural curves throughout the state were systemically selected for safety improvements through crash data analysis and risk factors identification using roadway characteristics. The low-cost safety countermeasures implemented as part of this systemic safety approach on two-lane rural road curves included double advanced warning signs, enhanced striping, raised pavement markers, high friction surface treatment, chevrons, and rumble strips.

In order to understand if the systemic safety approach is effective and whether the systemic safety improvements are associated with crash reductions, we need to evaluate the effectiveness of installed low-cost countermeasures in decreasing target crashes. Evaluating and documenting the effectiveness of such systemic low cost countermeasures is crucial for increasing funds towards systemic type projects while maintaining a balance with funding for projects identified from network screening (e.g. hot spot analysis).

OBJECTIVES

The objective of this proposed research is to evaluate the effectiveness of systemic safety projects implemented on two-lane rural curves in Louisiana and to develop the methodology for evaluation of future systemic projects.

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 to meeting the research objective.

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 (2019 edition) for more guidance.*

(https://www.ltrc.lsu.edu/pdf/2016/LTRC_RESEARCH_MANUAL_FINAL.pdf)

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

- Review literature for relevant studies including any existing systemic analysis conducted by DOTD;
- Review the methodology used for the selection of systemic projects;
- Perform benefit-cost analysis;
- Perform cost effectiveness analysis;
- Evaluate the effectiveness of countermeasures or groups of countermeasures. Perform crash analysis to address more than just “target crashes” and to look at the effect on roadway departure crashes. Report crash severity in three groups: Fatal + Severe, Fatal + Injury, and Total Crashes (all severities);
- Evaluate the effectiveness of systemic safety projects implemented on two-lane rural curves; and
- Develop a methodology for evaluation of future systemic projects;

Note:

DOTD/LTRC contracts to collect, maintain, store, analyze, and distribute crash related data captured from law enforcement and other agencies throughout the state of Louisiana. DOTD's Data Collection and Management Systems office contracts to collect, maintain, store, and distribute roadway and traffic data. LTRC will facilitate any coordination with that contractor, as needed.

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:

- Interim Report
- Biannual Reports
- Methodology for evaluation of systemic projects
- 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, 2019 edition.
(http://www.ltrc.lsu.edu/pdf/2016/LTRC_RESEARCH_MANUAL_FINAL.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.
<http://webmail.dotd.louisiana.gov/AgreStat.nsf/BWebAdvertisements?OpenPage>
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

\$180,000

ESTIMATED COMPLETION TIME

24 Months *(includes 3 months for review and approval of final report)*

LTRC PRIMARY CONTACT

Julius Codjoe, Ph.D., P.E.

Special Studies Research Administrator

225-767-9761

julius.codjoe@la.gov

AUTHORIZATION TO BEGIN WORK:

February 1, 2022 (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

(http://www.ltrc.lsu.edu/pdf/2016/LTRC_RESEARCH_MANUAL_FINAL.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

Ten copies of the proposal must be received by LTRC by 12:00 PM (Noon) of Wednesday, December 15, 2021. Alternatively, an electronic copy may be submitted to Sheri Hughes via Sheri.Hughes@la.gov copying Samuel.Cooper@la.gov before the due date.

Proposals should be submitted to:

Samuel Cooper, Jr., Ph.D., P.E.

Director

Louisiana Transportation Research Center

4101 Gourrier Ave.

Baton Rouge, LA 70808