REQUEST FOR PROPOSALS
LTRC Project No. 26-5SS, SIO No. DOTLT1000610

Expanding Adaptive Traffic Control Signal Systems: A Strategic Study for Louisiana's Arterial Highways

PROBLEM STATEMENT

Adaptive traffic control systems (ATCS) are better alternatives to conventional fixed-time signals, as they adjust signal timings based on real-time traffic conditions, resulting in reduced travel time, less congestion, and improved service to all road users. To improve traffic operations, the FHWA has promoted the adaptive signal control technology as part of the Every Day Counts initiative in the United States. Research findings have shown that these systems can improve operational performance of corridors and safety at signalized intersections. The effectiveness of ATCS, however, is influenced by various factors such as corridor characteristics, traffic conditions, area type, and technology types.

Peak hour congestion is consistently a problem in Louisiana, specifically on arterial highways. The Louisiana Department of Transportation and Development (DOTD) has implemented ATCS on several corridors in District 07 (e.g., segments on US 171, US 90, LA 14, LA 27, LA 108, and LA 1256) and District 03 (LA 182, LA 3025, and LA 167). A list of intersections will be made available after contract award. Some of these corridors share some common characteristics, i.e., being located around industrial areas where traffic volumes vary by time of day, weekday versus weekend, and throughout the year. This results in variable peak hours with substantially large volumes of traffic and pedestrians from side streets. These intersections have demonstrated reduced congestion and improved traffic flow through the implementation of ATCS.

Building upon successful implementation in these districts, DOTD would like to develop a strategic framework to ATCS at other suitable locations in Louisiana. Furthermore, it is important to establish metrics for assessment of operational objectives and infrastructural needs for future implementation of ATCS across the state.

OBJECTIVES

The objective of this research project is to develop a guide for expanding/implementing, maintaining, and evaluating ATCS in Louisiana.

RESEARCH APPROACH

The Louisiana Transportation Research Center (LTRC) is seeking the insight of proposers on how best to achieve the research objective. 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 below 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/2025/LTRC_RESEARCH_MANUAL.pdf

Accomplishment of the project objective will require at least the following tasks:

TASKS

PHASE 1 – Planning

- *Task 1*. Review literature for relevant studies to document successful practices in other states, vendors and available adaptive signal control technologies, selection criteria applied for implementing ATCS, and implementation and maintenance costs.
- *Task 2*. Select corridors in Louisiana with implemented ATCS. Analyze the suitability of the existing adaptive signal control technology to the characteristics of the corridor based on the existing infrastructure, and implementation and maintenance costs.
- *Task 3*. Based on the research findings, document the infrastructural needs for future implementation of different types of ATCS throughout the state. Take into consideration the current DOTD standards on implementing ATCS. Also, note that the infrastructural recommendations should account for maintenance agreements with local entities. For instance, such maintenance agreements could result in signals on the same corridor being managed by different entities (e.g., DOTD and the City of Baton Rouge), where the signal data and control may reside on different unconnected networks.
- *Task 4*. Prepare Interim Report No. 1 documenting the results of Tasks 1 through 34 and provide an updated plan for the remainder of the research no later than 9 months after contract award. The updated plan must describe the process and rationale for the work proposed for Phase II.

PHASE 2 – Development of Guide

- *Task 5*. Identify high-priority corridors (or segments) in Louisiana that would benefit from the implementation of ATCS based on research findings.
- *Task 6*. Develop a guide that will provide a framework to implement, maintain (including impact of maintenance agreements), and assess performance for future implementation of ATCS in Louisiana. This must be completed no later than 15 months after contract award.

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: to be completed on LTRC's Project Management and Tracking System (access will be provided).

- Presentations to the Project Review Committee (PRC): at a minimum, it will involve (1) a kick-off teleconference within 1 month of contract award, and (2) presentation of interim and final deliverables.
- Interim report – Task 4
- Final Deliverables to include (1) a final research report documenting the entire research effort and findings; (2) presentation material; and (3) a technical summary. This must be completed no later than 18 months after contract award.

  Note: Following receipt of the draft final deliverables, the remaining 3 months shall be for PRC review and comments, and for research agency to address comments and prepare Final Deliverables.

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
$250,000

ESTIMATED COMPLETION TIME
21 Months *(includes 3 months for PRC 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:
April 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 (5:00 PM CST) of March 2, 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 Cooper III, Ph.D., P.E.
Director, Louisiana Transportation Research Center
4101 Gourrier Ave.
Baton Rouge, LA 70808