

REQUEST FOR PROPOSALS

LTRC Project No. 24-1SS, SIO No. DOTLT1000495

Updating and Migrating the Louisiana Transportation Research Center (LTRC) Project Management Tracking System (PMTS) from Louisiana State University Server to Office of Technology Services (OTS) Server(s)

PROBLEM STATEMENT

The Louisiana Transportation Research Center (LTRC) has spent considerable effort, time, and money in the development of the LTRC Project Management Tracking System (PMTS) web based application. This application is used by Department of Transportation and Development (DOTD) personnel, outside consultants, and University personnel to update individual research projects. Required by FHWA are biannual reports and an Annual Work Program among other things. Additionally, financial information for individual projects is tracked as well as final report status, etc.

This web application having been developed over the course of ten plus years, has several unused modules beside frequently used modules. There exist several levels of permissions depending upon the user's status. Being that PMTS is considered a legacy system, the programming language is **VB.NET**. Updating of PMTS shall meet the minimum requirements of the OTS Web Application Development Standards for DOTD and also meet the minimum State Of Louisiana OTS security guidelines. The current version of PMTS requires Microsoft Word and Excel to function properly. Moving forward, LTRC requires forms to be created NOT dependent upon Microsoft Word and Excel.

OBJECTIVES

The objectives of this proposed project are the following: (1) Update the existing PMTS targeting a **.NET 6 (or newer) using C# syntax**; (2) Remove the Microsoft Word and Excel reports and replace them with a generic form output that can be imported into word and Excel upon downloading; (3) Update all security features to meet the minimum State of Louisiana OTS Security Guidelines; (4) Creation of a link to DOTD warehouse data dumps to automatically update the financial information on a daily basis; (5) Migration of newly updated PMTS to OTS servers, (6) Export and transfer all existing PMTS data to the new platform, and (7) Creation of a digital user manual for new users.

RESEARCH APPROACH

The Louisiana Transportation Research Center (LTRC) is seeking qualified web application designers who can perform the required tasks within the constraints of available funds and contract time as allowed in the Request for Proposal (RFP). Proposals must present the candidate's current qualifications 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 (2019 edition) for more guidance.*

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

All programming shall meet OTS Web Application Development Standards for DOTD

Development Environment Standards for DOTD Web Applications:

Web Server OS: Microsoft Windows Server 2019 with IIS 10 or newer. The .Net Core Hosting Bundle will be installed as needed.

Development IDE: Applications must be delivered in the form of a Microsoft Visual Studio 2022 (or newer) solution. Code will be divided into logical layers as separate projects in the solution. All code source control will be tracked in the OTS Enterprise GitHub repository. All code will be placed onto test servers and approved by the application owner before code is promoted to production.

Software Standards for DOTD Web Applications:

All code and software development practices will comply with the State of Louisiana Information Security Policy and appendices published here (<https://www.doa.la.gov/doa/ots/about-us/infosec/>).

Web applications' server components will be built targeting .NET 6 (or newer) using C# syntax. An MVC or layered style architecture is required. A minimum three-layer design will be used. Application layers must include, but are not limited to, data access layer, services layer, and presentation layer. Additional application layers may be included as appropriate.

Code will be developed in a modular style such that each component will have a specific purpose. All code will have sufficient comments to document functionality. Additional functionality may be incorporated as needed through the NuGet package manager.

The data access layer will provide access to back end data store(s). It must use Entity Framework for data oriented actions.

The services layer may enforce business specific logic and will perform necessary translation between entities and data transfer objects. Base entities will not be directly communicated to client-side processing to maintain data abstraction.

Lightweight API Controllers will be used to expose RESTful endpoints for client-side needs. The JSON format will be used for all raw data transfer.

Client-side code will be written to HTML5 standards (or newer). Client-side scripting will be written in pure JavaScript and will use the Fetch API for data transfer. New JavaScript libraries and frameworks may be reviewed and approved for use as development needs continue to grow.

Client-side presentation will be aesthetically consistent with DOTD's existing web content where applicable. This may be accomplished using existing images, layouts, and styles.

Web applications will be developed targeting modern browsers including Google Chrome and Microsoft Edge.

A separate user/role list will be used to govern authentication and authorization for each deployment environment (test, production, etc.).

All externally facing applications will utilize HTTPS with a current and valid server certificate in compliance with the Information Security Policy.

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:

- Kick-off meeting with LTRC personnel and development team is required
- Updated functioning PMTS on OTS servers per the objectives
 - Code shall be fully commented for ease of updating if/when future needs arise
- Monthly zoom progress meetings with the LTRC primary contact
- Biannual Reports
- Training session for LTRC Employees to be held at our facility in Baton Rouge, LA
- Digital user manual

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

\$250,000

ESTIMATED COMPLETION TIME

9 Months (*includes 3 months for review, beta testing and support of final product*)

LTRC PRIMARY CONTACT

Tyson Rupnow, Ph.D., P.E.
Associate Director, Research
225-767-9124
tyson.rupnow@la.gov

AUTHORIZATION TO BEGIN WORK:

July 1, 2023 (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

The proposal must be received by LTRC by the close of business day of May 1, 2023. An electronic copy shall 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 B. Cooper, Jr., Ph.D., P.E.
Director Louisiana Transportation Research Center
4101 Gourrier Ave.
Baton Rouge, LA 70808