



Request for Letters of Intent

Model Connected Vehicle Procurement Documentation

August 12, 2024

Issued by

**University of Virginia Center for Transportation Studies
Charlottesville, Virginia**

On Behalf of

Connected Vehicle Pooled Fund Study

I. GENERAL INFORMATION

REQUEST FOR LETTERS OF INTENT (RFLI)

The RFLI has been posted on the Connected Vehicle Pooled Fund Study (CV PFS) website (<https://engineering.virginia.edu/labs-groups/cvpfs>) for your information. Addenda will be posted on this website if issued. It is the responsibility of interested parties to ensure that the latest version of the entire RFLI and related links are reviewed prior to submission of a letter of intent. We encourage you to check the website frequently for any changes prior to the due date.

For ease of reference, each firm or individual receiving this RFLI is referred to as an “interested party” and the firm or individual selected as a potential partner of the University of Virginia Center for Transportation Studies (UVA CTS) and the CV PFS is referred to as the “preferred subcontractor”. This RFLI states the instructions for submitting letters of intent, and the procedure and criteria by which a preferred subcontractor may be selected.

RFLI SCHEDULE

- **Issue Date:** August 12, 2024
- **RFLI Questions:** Any questions or requests for necessary additional information concerning this RFLI must be emailed to the UVA CTS listed below no later than 3:00 p.m. ET on August 21, 2024 in order to guarantee a timely response prior to the letter of intent due date.
- **Letters of Intent Due Date:** 3:00 p.m. ET on September 18, 2024. One electronic file (up to 10MB), including a Letter of Intent and all supporting material, must be sent to the UVA CTS via email using the contact information in the box below. The UVA CTS reserves the right to reject letters of intent received after the stated due date and time.
- **Expected Subcontract Start Date:** December 2024

REFER ALL QUESTIONS TO:
University of Virginia Center for Transportation Studies
Attention: Mallory Artusio
Phone: 434-243-8139
Email: mbd3f@virginia.edu

PROCEDURE

It is important to note that preparation and submission of a letter of intent (for detailed contents, see Section IV. Contents of the Letter of Intent), in response to this RFLI, is completely voluntary, without any bearing on contractual obligations. In case none of the submitted letters of intent is satisfactory to CV PFS team's expectation, the CV PFS team may opt not to establish a subcontract. The purpose of this RFLI is to identify a potential partner that may work, as a subcontractor, with the CV PFS and the UVA CTS on the project outlined in this RFLI. Once all the letters of intent are received, the below procedure will be followed:

1. The CV PFS team members will evaluate the letters of intent (including a signed cover letter, a proposal, and a budget) submitted in response to the RFLI to identify an interested party that best meets CV PFS's needs as a preferred subcontractor;
2. Once a preferred subcontractor is identified, the CV PFS and the selected preferred subcontractor will conduct negotiations to come to an agreement on the scope, duration, and the guaranteed maximum price budget of a subcontract; and
3. Finally, a formal subcontract will be established through the University of Virginia Office of Sponsored Programs and the preferred subcontractor officially becomes the subcontractor. Note that the total duration, during which the contractual documents stay within the subcontractor for review and negotiation, shall not exceed 30 business days. If the process conducted by the subcontractor takes longer than 30 business days, the CV PFS may cancel the project and/or move to the next best interested party for negotiation.

II. BACKGROUND INFORMATION

CONNECTED VEHICLE POOLED FUND STUDY

The project detailed in this RFLI is intended to develop "Model Connected Vehicle Procurement Documentation" as part of the program of the CV PFS (officially titled "Program to Support the Development and Deployment of Connected Vehicle Applications"). This CV PFS was created by a group of state, local, and international transportation agencies and the Federal Highway Administration (FHWA), with the Virginia Department of Transportation (VDOT) serving as the lead agency. The UVA CTS is supporting VDOT on the pooled fund study, serving as the technical and administrative lead for the effort. For more information about the pooled fund study, please visit <https://engineering.virginia.edu/labs-groups/cvpfs>.

BACKGROUND

The CV PFS is committed to conducting projects that accelerate deployment of connected vehicle infrastructure and applications. Infrastructure owner operators (IOOs) typically lack experience in procuring the necessary infrastructure equipment (such as traffic signal controllers and roadside units (RSUs)) and integration support to build connected vehicle infrastructure. This is made even more difficult given that infrastructure must be complemented by supporting

services (such as a security credential management system [SCMS]) and that much of the currently available equipment does not fully meet currently documented interoperability requirements. The purpose of this effort is to work collectively with IOOs, connected vehicle standards leaders, and industry to develop model procurement documentation (including specifications, requirements and other language that can be used by IOOs to build interoperable connected vehicle infrastructure). These resources will also be beneficial to companies providing equipment and services by clearly documenting IOO needs.

The product of this effort will be publicly available model procurement documentation that IOOs may use directly, or tailor for specific needs, in connected vehicle procurements.

III. SCOPE OF SERVICES

The UVA CTS, on behalf of CV PFS, seeks a qualified organization (the “Selected Subcontractor”) to develop “Model Connected Vehicle Procurement Documentation” (the “Services”).

A. GOAL

The objective of the Connected Vehicle Pooled Fund Study (CV PFS) is to accelerate the introduction of connected vehicle applications that allow infrastructure owner operators (IOOs) to more effectively and efficiently meet their missions. To date, the CV PFS has put significant effort into developing guidance for deploying infrastructure that supports interoperability – most notably through the connected intersection program. To take this guidance further, the purpose of this effort is to develop model connected vehicle procurement documentation that may be used by IOOs to purchase the hardware and services that will fully meet interoperability requirements detailed in relevant V2X standards. IOOs can use these documents to ensure procurements result in connected vehicle infrastructure that fully meet interoperability standards.

In addition, in recent interoperability efforts, it has become evident that currently available signal control hardware (i.e., traffic signal controllers), which are critical components of a connected vehicle deployment, do not fully meet requirements for interoperability. By clearly articulating these requirements in the Model Connected Vehicle Procurement Documentation that may be used by all IOOs, traffic control equipment companies will have a clear understanding of the needs of their customer base.

The CV PFS expects that the most effective subcontractor team for this project will include personnel with expertise and representation from consulting engineers supporting IOOs in deployment and system integration, as well as the field equipment industry providing equipment needed for CV infrastructure deployments.

B. TASKS

In order to accomplish the goal of this project, the Subcontractor shall perform the following tasks:

1. Project Management
2. Review Existing & Emerging Connected Vehicle Standards
3. Interview IOOs and Connected Vehicle Community to Document Model Procurement Documentation Needs
4. Create Draft Model Connected Vehicle Procurement Documentation
5. Outreach for Feedback on Draft Model Connected Vehicle Procurement Documentation
6. Create Final Model Connected Vehicle Procurement Documentation
7. Create Outreach Materials to Facilitate Use of Model Documentation

Note that all CV PFS projects are guided by Project Panel. The project panel for this effort will be comprised of representatives from CV PFS members with expertise in connected vehicle and system procurement. The panel will be supported administratively and technically by staff from the University of Virginia.

Task 1: Project Management

The purpose of this task is for the Subcontractor to provide project management support for all tasks described in this scope of services. The Subcontractor shall conduct the following specific task items:

- Develop a Project Management Plan (PMP) that guides the execution of Work Task Activities identified in this scope of services. The PMP shall include plans for: Scope Management, Cost Management, Quality Management, Human Resources Management, Communications Management, and Risk Management. The plan should also detail a field equipment industry engagement plan.
- Prepare a detailed Project Schedule that lists all planned tasks and milestones for the project and submit an electronic project file in Microsoft Project format and Adobe PDF format. All activities shall have their predecessors and successors clearly identified, to enable the calculation of a critical path for the project. The detailed project schedule shall reflect a work breakdown structure (WBS) consisting of at least two levels. The Project Schedule shall be updated monthly.
- Participate in a project kick-off meeting within three weeks of contract award to ensure common understanding of the scope with the CV PFS Members.
- Schedule and participate in a monthly project panel meeting (to be conducted using Zoom or Teams). Prior to each call or meeting, prepare an agenda that includes project progress, schedule, scope issues, budget, and results of tasks at team meetings. Within a week of each call or meeting, prepare panel meeting summaries, which will, at a minimum, track the status of action items.
- Submit a monthly progress report by the 15th of each month. These reports shall identify all deliverables and deliverable status (not initiated, in progress X% complete, draft delivered, in revision X% complete, final delivered, accepted). Monthly reports shall contain a narrative of accomplishments by task and projected activities in the next

quarterly period. Monthly reports shall also contain an updated project schedule with a risk narrative and a projected cost-to-complete narrative.

- Attend a project closeout meeting in the last week of the project. At this meeting, present a summary of work performed under each task, the status of each deliverable, and identify pending or incomplete deliverables, and the total funds expended.

The Subcontractor shall submit the DRAFT PMP and Project Schedule for review by the Project Manager and the PFS Members, and revise based on feedback received. Based on the discussions at the kickoff meeting and the comments received, the Subcontractor shall submit to the Project Manager the REVISED PMP, Project Schedule and the Comment Resolution Report that document how each comment was resolved. The Subcontractor shall discuss the resolution of the comments with the Project Manager and the PFS Members as needed. The Subcontractor shall make any final revisions based on additional feedback received, and deliver the Final PMP and Project Schedule.

Note that the CV PFS members meet in-person twice per year (generally in May and December). The Subcontractor will be expected to participate in these meetings during the life of this project in order to actively engage with CV PFS members. The Subcontractor is expected to include this meeting in the proposed project schedule and budget for the project accordingly.

Task 1 Deliverables:

- DRAFT PMP and Project Schedule
- Briefing Materials, Kick-Off Meeting
- REVISED PMP, Project Schedule and Comment Resolution Report
- FINAL PMP and Project Schedule
- Monthly Progress Reports
- Monthly Project Panel Meetings with associated Agendas, Presentation Materials, and Minutes
- Panel Meeting Agendas and Summaries, as needed
- Briefing Materials, Closeout Meeting

Task 2: Review Existing & Emerging Connected Vehicle Standards

There has been considerable work in recent years to develop formal standards as well as implementation guidance for connected vehicle infrastructure. For example, the Connected Transportation Interoperability (CTI) family of standards are a series of documents that were jointly developed by stakeholders across the connected vehicle spectrum, including IOOs, the automotive industries, device manufacturers, mobility data providers, and systems integrators. These standards are currently being revised and expanded. In addition, the CV PFS is conducting the Connected Intersections program which has produced specific guidance for IOOs in deploying interoperable corridors. Beyond these examples, there are other activities ongoing intended to facilitate interoperable deployments.

In this task, the subcontractor will review previous work, and connect with on-going efforts to provide a foundation for this project and to facilitate involvement in current efforts so that the Model Connected Vehicle Procurement Documentation is informed by these activities.

Additionally, the subcontractor will review associated SAE, IEEE and NEMA standards and work with the CV PFS panel members to advise on which standards should be included in the documentation.

Task 2 Deliverables:

- Summary report detailing model procurement documentation elements and applicable standards based on Task 2 review
- Monthly updates to CV PFS panel on national standard development efforts
- Participation in national standard development efforts as guided by the panel

Task 3: Interview IOOs and Connected Vehicle Community to Document Model Procurement Documentation Needs

Working with guidance and assistance from the project panel, the subcontractor will meet with IOO staff in multiple agencies to learn about and compile specific needs for model procurement documentation. It is expected that the needs will vary modestly across the spectrum of IOOs, and the project panel will work with the subcontractor to identify the core needs that must be addressed in model procurement documentation. In addition, the subcontractor will collect relevant procurement documents from IOOs to support development of model procurement documentation, and potentially serve as examples for use by the IOO community.

In this task, the subcontractor will also interview members of the larger connected vehicle community, including equipment suppliers, system integrators, service providers (such as SCMS) to understand the perspective of firms responding to procurements.

Task 4 Deliverables:

- Report providing details of the interviews conducted
- Document detailing the Model Procurement Documentation Needs

Task 5: Create Draft Model Connected Vehicle Procurement Documentation

Based on the results of Tasks 2 and 3, in addition to developing a thorough knowledge of current and anticipated connected vehicle field equipment and supporting services (such as SCMS), the subcontractor will develop a complete set of Draft Model Connected Vehicle Procurement Documentation. The goal of the documentation is to provide IOOs with a resource to include specific, nationally consistent language in the range of procurements needed to build and operate connected vehicle infrastructure. The documentation should be organized in a manner that easily facilitates separate use of its contents, as needed by IOOs. It is expected that this task will include multiple phases of draft documentation, review by the project panel and appropriate industry leaders, and revision.

Task 5 Deliverables:

- Documentation of 2 or More Phases of the Following:
 - Create Draft Model Connected Vehicle Procurement Documentation

- Review/Feedback from IOOs and Industry
- Revision

Task 6: Outreach for Feedback on Draft Model Connected Vehicle Procurement Documentation

Upon completion of the Draft Model Connected Vehicle Procurement Documentation in Task 4, with the approval of the CV PFS project panel, the subcontractor will conduct a full outreach effort to (a) ensure the CV community is aware of the model documentation, and (b) collect feedback from a broad set of community members. The subcontractor will be expected to develop an outreach plan (including direct interviews with community leaders, engagement in key organizational meetings, conference/workshop participation, on-line outreach and feedback, etc.) collectively with the project panel.

At the completion of the task, the subcontractor will present a set of proposed changes to the draft model documentation created in Task 4. These must be approved by the project panel prior to beginning Task 6.

Task 6 Deliverables:

- Outreach Plan including targeted CV community members
- Summary Report of Outreach Effort
- Documentation of Proposed Changes to Draft Model Documentation

Task 7: Create Final Model Connected Vehicle Procurement Documentation

Based on the changes approved in Task 5, the subcontractor will develop the Final Model Connected Vehicle Procurement Documentation for review/revision/approval by the project panel.

Task 7 Deliverables:

- Final Model Connected Vehicle Procurement Documentation

Task 8: Create Outreach Materials to Facilitate Use of Connected Vehicle Procurement Documentation

The subcontractor will develop outreach materials designed to accomplish the following:

- Increase awareness of the model documentation in the CV community
- Aide in the effective use of the material in the Connected Vehicle Procurement Documentation

The set of materials, and content of materials must be approved by the project panel. It is expected that these materials will include, but not be limited to: guidance documents, presentation materials (i.e., PowerPoint slides), video, and related web materials.

Task 8 Deliverables:

- Outreach Materials

C. SCHEDULE FOR DELIVERABLES

The Period of Performance (POP) of this project is 12 months.

All deliverables for this project (including monthly progress reports) are to be provided to the following:

- Brian Smith (briansmith@virginia.edu)
- Mallory Artusio (mbd3f@virginia.edu)
- ITSPrompts@dot.gov

IV. CONTENTS OF THE LETTER OF INTENT

Letters of Intent are to provide a concise description of the research plan and capabilities of the interested party to satisfy the requirements of the RFLI. Emphasis will be on completeness and clarity of content. The letter of intent should include a signed cover letter, a title page, a proposal, a proposed budget and appendixes. The interested party shall submit the following in the letter of intent as one electronic file up to 10MB:

1. A signed cover letter (2 pages or less)
2. A title page (1 page)
3. A proposal (15 pages or less)
 - a. Technical Approach
 - i. A detailed description and the full plan, to include a timeline, to accomplish the project proposed
 - b. Schedule
 - c. Qualifications
 - i. A brief history of the interested party and its experience, qualifications and success in providing the type of service requested
 - ii. Brief introductory qualifications of the proposed staff
4. The interested party's proposed guaranteed maximum price for the project
5. Appendix (no page limit)
 - a. Resumes of proposed staff
 - b. Any other material that the submitter would like to include

V. BASIS OF SELECTION OF PREFERRED SUBCONTRACTOR

Letters of intent will be evaluated based upon the overall merits/value including, but not limited to, price. All letters received will be carefully evaluated by the CV PFS based on the following criteria:

1. The interested party's technical work plan to provide the CV PFS with the products as described in the Scope of Services section (35%);
2. The interested party's team composition (17%);
3. The interested party's qualification and experience in providing Services similar to those described in this RFLI (18%); and
4. The interested party's proposed schedule (10%).
5. The interested party's pricing for providing the Services (20%).