Request for Letters of Intent

Public Fleet Onboard Unit (OBU) Deployment Guidance and Prototype Deployment

April 5, 2025

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) NAME

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**: April 5, 2025
- **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 April 15, 2025 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 May 5, 2025. 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**: August 2025

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 "Public Fleet Onboard Unit (OBU) Deployment Guidance and Prototype Deployment" 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.

Note that this project will be managed and funded under the VDOT led CV PFS. The overall program of the CV PFS will transition to be led by the Georgia Department of Transportation, under the new name of "Vehicle to Everything (V2X) Pooled Fund Study" (https://pooledfund.org/Details/Study/1788)

BACKGROUND

As infrastructure owner operators (IOOs) seek to deploy and operate connected vehicle field equipment, it is critically important that there exist a population of vehicles to "connect" with. Given that onboard units (OBUs) are not yet available on production passenger or commercial vehicles, IOOs have focused on limited deployment of OBUs on public fleet vehicles. This has proven to be challenging. There is a need to share lessons learned from early deployments and provide guidance information to support IOOs as they seek to expand OBU integration in public fleets.

III. SCOPE OF SERVICES

The UVA CTS, on behalf of CV PFS, seeks a qualified organization (the "Selected Subcontractor") to complete a project entitled "Public Fleet Onboard Unit (OBU) Deployment Guidance and Prototype Deployment" (the "Services").

A. GOAL

An important common element of IOO CV deployments to date is to include applications that benefit public vehicle fleets (for example, transit vehicles, maintenance vehicles, emergency management vehicles). This provides the essential vehicle component of connected vehicle systems. Effective design, installation and operation of the on-board units (OBUs) in public vehicles has proven to be challenging. The purpose of this project is to develop guidance materials to help IOOs scope, configure, define and install OBUs in CV deployments.

Concurrent with the development of the guidance materials, 1 member agency of the CV PFS will develop and field prototype public fleet CV applications. This work will inform the guidance materials and benefit from the materials as well. The project will include consultant help to support deployment and to evaluate the impact of the project and document lessons learned.

B. TASKS

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

1. Project Management
2. Review CV PFS Member Public Fleet OBU Deployments
3. Review OBU technology and standards
4. Develop Draft Guidance Materials
5. Apply Guidance Materials to CV PFS Member Deployment

6. Finalize Guidance Materials

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.
- 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.
- Participate in spring and winter program in-person conferences (initially these will be CV PFS conferences, but will change to V2X PFS conferences in 2026).
- 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 CV PFS Member Public Fleet OBU Deployments

Many CV PFS member CV deployments have included OBU installation and operation in public fleets. Working with the project panel, the subcontractor will review these deployments and meet with agency personnel and their support contractors to develop a lessons learned document to provide foundational information to support the development of guidance materials.

Task 2 Deliverables:

- Lessons learned – CV PFS Member Public Fleet Deployments

Task 3: Review OBU Technology and Standards

There has been considerable work in recent years to develop formal standards for connected vehicle components. In this task, 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 guidance materials. In particular, it is important to note that the SAE CTIC Committee is working on an OBU specification, with plans to ballot on the standard's concept of operations in June 2025. It will be particularly important for the subcontractor to keep abreast of developments in this effort.

In addition, the subcontractor will review current OBU technology and equipment to develop foundational technology guidance.

Task 3 Deliverables:

- OBU standards and technology report

Task 4: Develop Draft Guidance Materials

Working with the project panel, the subcontractor will develop a first draft of guidance materials It is expected that these materials will include the following, at a minimum:

- Use cases documenting benefits of public fleet CV applications
- OBU configuration and installation guidance
- Methods for monitoring of OBU health and performance in operation
- Guidance for managing a fleet of OBUs

Task 4 Deliverables:

- Draft Guidance Materials

Task 5: Apply Guidance Materials to CV PFS Member Deployment

The CV PFS will identify one member currently in the process of deploying public fleet OBUs to support a prototype project. The subcontractor will work with this member agency to provide support on applying the draft guidance materials (developed in Task 4) in the deployment. In doing so, the subcontractor will assess the utility of the guidance materials and recommend specific changes in the materials to be completed in Task 6.

Task 5 Deliverables:

- Support of CV PFS Member Agency in application of Draft Guidance Materials

Task 6: Finalize Guidance Materials

Based on the lessons learned in Task 5, the subcontractor will develop the final set of guidance materials

Task 6 Deliverables:

- Final Guidance Materials

C. SCHEDULE FOR DELIVERABLES

The Period of Performance (POP) of this project is 24 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)
- ITSProjects@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%).