



RESEARCH FOUNDATION

RESEARCH FOR THE NFPA MISSION

REQUEST FOR PROPOSALS FOR PROJECT CONTRACTOR

Fire Service Small Unmanned Aerial Systems (sUAS) Operations
Training: Baseline Materials & Usage Assessment

14 February 2020

Background: The use of drones within the fire service has rapidly expanded as their capabilities to assist in saving lives are realized. As drone's safety policies and standards continue to evolve, many fire departments in the U.S. and elsewhere are without the proper information, knowledge, and experience needed to establish and maintain a compliant, legal public safety program. This project will provide the guidance, knowledge, and learnings to assist fire departments to establish a compliant drone program.

This topic directly relates to the activities addressed by NFPA 2400, *Standard for Small Unmanned Aircraft Systems (sUAS) Used for Public Safety Operations*. This research project is utilizing the definition of small UAS as defined in NFPA 2400 (2019 edition, section 1.3.2 and A.1.3.2), which indicates a small UAS to be an unmanned aircraft weighing less than 25 kg (55 lbs) on takeoff, including everything onboard or otherwise attached. The use of the term "drone" herein is intended to mean "sUAS".

The curriculum that will be developed by this project will address sUAS utilization across all operational settings including structural and wildland firefighting, search & rescue, hazardous material responses, natural disasters, and any other events in which public safety operations would benefit from use of drones. Concepts addressed will include, but not be limited to:

- Organization Deployment and Considerations for sUAS (i.e., program criteria; operational needs assessment; and purchase specification);
- Professional Qualifications for sUAS Public Safety Personnel (i.e., job performance requirements (JPRs) for remote pilot in command and for visual observers; and operations needing a sUAS coordinator);
- Operational Applications (i.e., firefighting such as structural or wildland; search & rescue; hazardous materials response; natural disasters; and large gatherings; and
- Maintenance of sUAS (i.e., elements of a maintenance program; discrepancy reporting; and record keeping)

Research Goal and Objectives: The overall goal of this project is to substantially increase the availability of free training and education on the safe implementation and utilization of small unmanned aerial systems (sUAS) used by the fire service. To accomplish this goal, this project has the following objectives:

- 1) **Baseline Materials & Usage Assessment:** Assess the current and trending knowledge, policies, and standards on public safety drone usage, and provide a summary of the key involved organizations;
- 2) **Program Knowledge Base:** Develop a training program framework, including resources, education, and a searchable knowledge database, to allow fire service organizations to comply with current regulations and standards;
- 3) **Use Case Tracking:** Implement an information collection mechanism that collects and tracks applicable details on fire service drone programs and their relevant use cases;

- 4) **Interactive Web Portal**: Establish an interactive web portal to freely disseminate the essential information and training materials, to support the evolution of regionally and nationally compliant public safety drone programs in accordance with FAA regulations and ANSI accredited model standards (e.g., NFPA, ASTM, etc.), and to support on-going use case tracking; and
- 5) **Outreach Campaign**: Conduct an information outreach campaign to promote awareness of the freely available information and training materials on this topic to all interested fire service organizations.

Research Team Participants: This project involves multiple partners with National Fire Protection Association (NFPA) as the project lead. The “Research Team” as used herein is understood to include representatives from all five organizations participating in this project, which are: National Fire Protection Association (NFPA), Fire Protection Research Foundation (FPRF), ASTM International, Colorado Center of Excellence (CO CoE), and the FPRF Contractor.

This Request for Proposal (RFP) specifically addresses the role and related details of the FPRF Contractor for developing the baseline content and materials, with review and refinement with project advisory panel. For more information on the overall project and deliverables, please read the overall [project summary here](#).

Project Meetings: An advisory Panel will provide oversight and guidance over the course of the project in accordance with the Policies of the FPRF, and will be administratively handled by FPRF. Participation and discussion are required by the FPRF Contractor in at least three conference calls with the advisory Panel to review progress at critical stages of the project as follows: (1) at project initiation to review the work plan, project scope and other project details; (2) project interim update to review the interim update on the progress of tasks; and (3) near the end of the project to review draft report and final project deliverables. Three conference call meetings are expected with advisory panel, though additional conference call meetings may occur if special project issues require resolution. Panel conference call documentation will be handled by FPRF. In addition to these conference calls with the advisory panel, the FPRF contractor will participate in regularly scheduled status meetings with the Research Team. The purpose of these meetings will be to review progress of overall research goals and collaborate amongst the research team partners. It is anticipated that these meetings will be scheduled bi-weekly or monthly and adjusted based on the needs of the project.

The project will include a workshop to present baseline materials developed. The FPRF Contractor will present their findings at the workshop to stimulate stakeholder discussion. The logistical arrangements, implementation and documentation (i.e., proceedings) of the workshop will be handled by the FPRF, with a venue to be identified in coordination with the advisory Panel and impacted stakeholders.

FPRF Contractor Project Tasks: The FPRF will identify and confirm an FPRF Contractor with appropriate skills and abilities to develop and refine the primary baseline materials used for this effort. The FPRF Contractor will have responsibility for the collection of all applicable literature and usage data, and provide appropriate analysis and documentation. They will identify impacts, the available usage data, data gaps, and potential methodologies. The deliverables generated by this task will be the basis for the project Final Report that will be reviewed by the advisory panel prior to finalizing the Final Report for publication from the FPRF website. The FPRF contractor will also present the final report at the workshop.

This project will involve the following project tasks:

- 1) Task 1 - Literature Review: Summary of all the applicable current and relevant literature on the use of drones by public safety organizations, including an overview of all applicable state and federal regulatory documents that directly and indirectly impact emergency responders.
- 2) Task 2 - Usage Assessment: Assessment of the current and trending knowledge, policies, and standards on public safety drone usage, and including a summary of all key organizations, to support the development and implementation of job performance requirements (JPRs) for all the drone applications within the scope of this project.
- 3) Task 3 - Interim Report/Progress Update: Provide an interim report/progress update of the baseline information and materials in preparation for review at the curriculum design virtual meeting with Research Team.
- 4) Task 4 - Use-Case Tracking: The FPRF Contractor will be responsible for developing and conducting an informal questionnaire of the public safety departments to populate the program Use-Case Tracking Knowledge Base. In support of this activity, it is expected that the FPRF Contractor will identify and collect relevant public safety drone usage and application information from a minimum of 25 departments (more is preferred). This activity may be completed through an information collection questionnaire sent to various public safety departments. This information will be delivered in appropriate format as agreed to the FPRF.
- 5) Task 5 - Final Report: Generate a draft final report based on the above tasks. Review the draft final report with project panel. Finalize the report based on panel feedback and comments.
- 6) Task 6 - Workshop. This task will be led by FPRF, who will be responsible for the design, implementation and documentation of the workshop. The FPRF Contractor will be responsible for the presentation and review of baseline materials final report at the workshop. The workshop will be an in-person meeting and will bring together the project advisory Panel and additional stakeholders to review and provide direct feedback on the baseline material deliverables. The workshop will review the proposed methodologies, identify perceived gaps, prioritize actionable needs, and generate recommended enhancements. The workshop proceedings will be handled by FPRF. Attendance at the workshop is targeted to be at least two-dozen participants.

Implementation: This project will be conducted under the auspices of the FPRF in accordance with FPRF Policies and will be guided by a Project Technical Panel of stakeholders and subject-matter-experts who will provide input to the project, recommend contractor selection, review periodic reports of progress and research results, and review the final project report. Project contractors must comply with the [Department of Homeland Security \(DHS\) specific acknowledgements and assurances](#).

Project Deliverables: This project involves the following overall deliverables, sorted by the responsible member of the Research team:

FPRF Contractor:

- a) *Interim Report/Progress Update* of the baseline information and materials in preparation for review at the curriculum design virtual meeting with Research Team (see task 3).
- b) *Provide public safety department use cases information collected and associated data to populate the Use Case Tracking Database* (see task 4).
- c) *Draft Final Report*, based on the project tasks (see tasks 5).
- d) *Final Report*, following final review by the advisory Panel (see task 5).

FPRF:

- e) *Advisory Panel meeting documentation*.
- f) *Workshop Proceedings* (see task 6).

Intellectual Property: The FPRF will retain all rights to project deliverables provided by the FPRF and the FPRF project Contractor, including the project Final Report and Workshop Proceedings which will be published on the FPRF website.

Schedule and Costs: The performance period for this DHS FEMA Grant project is until August 2021. The estimated time frame for the FPRF Contractor work is 9 months (from April 2020 through December 2020). The project timeline for the FPRF Contractor is the following:

RFP Proposals Due:	10 March 2020
Selection of Contractor:	27 March 2020
Work Plan Review (1 st Panel Conf. Call):	3 April 2020
Project Interim Update (2 nd Panel Conf. Call):	1 June 2020
Interim report/progress update at curriculum design meeting:	15 July 2020
Draft Final Report (3 rd Panel Conf. Call):	3 September 2020
Final Report	30 September 2020
Workshop Presentation and Participation	October 2020

This is a fixed price project in the amount of **\$40,000**, which includes all indirect costs, travel to the Workshop and any related in-person meetings. The Foundation does not have a limit on indirect costs. This magnitude of financial support represents the work that is expected. Since this funding is provided through an AFG Fire Grant, the effort requires a contribution of a **five percent cost share** that will be the responsibility of the FPRF Contractor (i.e., \$2,000). Documentation will be required (i.e., invoice) that clearly indicates the full magnitude of the work provided, including the five percent cost share that will be contributed by the FPRF Contractor.

How to Respond: Letter proposals (not to exceed six pages) shall be submitted electronically to Sreeni Ranganathan, Research Project Manager at the FPRF, at sranganathan@nfpa.org no later than 5:00 pm Eastern Time **10 March 2020**. For additional details see the [Research Foundation Policies for the Conduct of Research Projects](#), the [Foundation Operating Principles](#), and [Research Project Guidelines for Contractors](#) on the FPRF website at: www.nfpa.org/Foundation. Each proposal shall include a description of the following which will be used as the basis for proposal evaluation: scope and approach, problem understanding, technical merit, prior relevant experience and personnel expertise, and budget per task (including five percent cost share).

Note: This project will proceed only on the basis of receipt of a proposal deemed acceptable to the FPRF. Information on the FPRF's policies for the conduct of research can be found on the FPRF website at: [Research Foundation Policies for the Conduct of Research Projects](#).