



Contact us:
Leslie Marshall, Ph.D.
Foundation Manager
9711 Washingtonian Blvd., Suite 380
Gaithersburg, MD 20878
+1 (301) 718-2910
foundation@sfpe.org

Request for Proposals

Engineering Consultant for FEMA-Funded WUI Project

“Beyond the Checklist – A Virtual Handbook of Engineering Resources for WUI Property Fire Risk Assessment and Mitigation”

Project Background & Description

SFPE recently received a FEMA Fire Prevention & Safety Grant to create a virtual handbook using engineering-based resources to support firefighters and fire departments operating in the Wildland-Urban Interface (WUI). Current WUI property fire risk assessments are often based on simple checklists that don't provide fire departments with the flexibility they need to make informed recommendations on assessment and mitigation in the field. Moreover, fire departments around the United States vary greatly in their experience of fire hazards in the WUI.

The aim of this project is to develop a virtual handbook of engineering-based resource materials to support fire department WUI property fire risk assessments and recommended mitigation strategies for use in the field. SFPE and SFPE Foundation are leading the implementation of this project by leveraging the expertise of the Society of Fire Protection Engineer's membership – including the fire service, engineering, and insurance industries – alongside the expertise of fire departments with WUI fire property risk assessment and mitigation experience (such as Colorado Springs and Boise). SFPE Staff and a Project Advisory Panel will provide oversight and in-kind expertise throughout the project.

We are seeking an experienced **Technical Engineering Consultant** to lead the development of the virtual handbook of engineering-based resources and tools for fire departments to use in the field. The Consultant will work with SFPE Staff and the Project Advisory Panel to organize and moderate a virtual workshop for fire departments to unearth best practices, draft a beta version of the virtual handbook, pilot the handbook in the field with two fire departments, conduct site visits and risk reduction potential utilizing the two pilot departments as test cases, revise the handbook based on feedback, work with SFPE staff to adapt the handbook for a mobile platform that can be used by firefighters in the field, and develop a one-hour webinar to train fire departments in how to use the virtual handbook tool.

Goals & Objectives

1. With input from the Project Manager (SFPE) and the Project Advisory Panel, **plan and conduct a virtual 1.5-day workshop** for 20 invited fire department personnel and other stakeholders in December 2021.
 - a. Act as moderator for the virtual workshop.
 - b. Take the lead in the formulating the proposed agenda, speakers, and identify any pre-event materials attendees should review.
 - c. Work with SFPE staff and the Project Advisory Panel to identify potential invitees.



Contact us:
Leslie Marshall, Ph.D.
Foundation Manager
9711 Washingtonian Blvd., Suite 380
Gaithersburg, MD 20878
+1 (301) 718-2910
foundation@sfpe.org

- d. Work with SFPE Staff to send invitations and prepare the virtual platform for the event.
2. Based on input from the workshop and a review of available engineering resources, **develop materials for a virtual engineering handbook to meet these needs.** The handbook will be structured to support/be compatible with basic and advanced WUI property fire risk assessment checklists and mitigation strategies. Its development will be done in collaboration with selected U.S. fire departments.
 - a. For example, Colorado Springs has developed very specific guidance on the risk of exterior wood fencing. However, they are seeking more specifics on mitigation measures for this feature.
 - b. Boise and Colorado Springs Fire Departments will share their unique knowledge on the application of these techniques in the fire service environment to ensure that the engineering information is relevant and appropriate for fire department use.
 - c. The handbook will use WUI fire risk assessment checklists as its basic organizational structure. Information will include the key elements in an effective checklist and in-depth information on how to apply each element in a variety of property situations.
 3. **Pilot the implementation of the virtual handbook** with U.S. fire departments with varying experience in WUI property fire risk assessment and mitigation.
 - a. The virtual handbook implementation will be piloted through collaboration with two U.S. fire departments with varying experience in WUI property fire hazard and risk assessments and mitigation.
 - b. The purpose of the pilot is to ensure the user friendliness and effectiveness of the handbook as an enhanced adjunct to current departmental WUI property fire risk assessment and mitigation programs.
 - c. The pilot will include site visits designed jointly with the involved departments.
 4. **Measure the potential for WUI property risk reduction** resulting from the application of these materials for sample properties using WUI risk assessment methods based on recent research.
 - a. Concurrent with the piloting of the virtual handbook, a rigorous risk assessment will be conducted using a sample of varying properties from these departments.
 - b. Property risk will be assessed before and after the application of the recommended mitigation measures resulting from the fire risk assessment of these structures using WUI property risk assessment methods based on the latest research.
 5. **Final review / revision of the Handbook**
 - a. Further modifications to the guidance materials will be made based on this assessment.
 - b. The final version of the virtual handbook will use these materials, structured around the essential elements of a WUI property risk assessment checklist with information modules on each checklist element.
 - c. One of the goals of the handbook will be user-friendliness for a range of fire department capabilities and knowledge levels.
 - d. Learning assessment modules will be included to measure learning effectiveness.



Contact us:
Leslie Marshall, Ph.D.
Foundation Manager
9711 Washingtonian Blvd., Suite 380
Gaithersburg, MD 20878
+1 (301) 718-2910
foundation@sfpe.org

- e. The format of the handbook will be a mobile application, suitable for smart phone use and a PDF document for desk reference.
 - f. SFPE has substantial expertise in virtual resource development and will use apply its expertise to this project.
- 6. Make the virtual handbook broadly available to the U.S. fire service.**
- a. The handbook will be distributed freely to the U.S. fire service through SFPE’s website, through its fire service subcommittee, through a one-hour introductory webinar, and through SFPE’s global network of local chapters.
 - b. The Consultant will participate in developing the one-hour introductory webinar.

Core Deliverables

1. Plan and execute virtual workshop with fire department personnel and other stakeholders to share best practices in WUI fire property risk assessment and mitigation. Help enable attendance and meaningful participation from 20 invitees.
2. Produce summary report following virtual workshop, outline of content to be included in the virtual handbook, and detailed work plan for producing the beta version of the virtual engineering handbook for fire departments to use in the field.
3. Produce draft version of the virtual handbook for review by the Project Advisory Panel.
4. Revise the draft version of the virtual handbook based on feedback from SFPE staff and the Project Advisory Panel, and then produce a final draft version with detailed guidance on how to organize the material for ease of access on mobile devices used by fire departments in the field.
5. Review the beta version of the virtual handbook with the staff producing the application and ensure any necessary changes are made prior to piloting the tool in the field.
6. Coordinate with two fire departments (selected by SFPE staff and the Project Advisory Panel) to pilot the implementation of the virtual handbook. Document any concerns, successes, or adjustments needed to ensure user friendliness and effectiveness. This work will include site visits with travel expenses for the Consultant covered by SFPE.
7. Measure the potential for WUI property risk reduction resulting from the application of these materials for sample properties (supplied by the fire departments in item 6 above) using WUI risk assessment methods based on recent research. Property risk will be assessed before and after the application of the recommended mitigation measures resulting from the fire risk assessment of these structures using WUI property risk assessment methods. The results should be summarized in a report provided to SFPE Staff and the Project Advisory Panel, as well as presented to the Project Advisory Panel for feedback.
8. Final revisions to the virtual handbook will be based on feedback and learnings from the risk reduction activities described above. A top priority is user-friendliness for a range of fire department capabilities and knowledge levels. The final format of the handbook will be a mobile friendly application (created by SFPE staff), and a PDF document for desk reference (produced by the Consultant).



Contact us:
 Leslie Marshall, Ph.D.
 Foundation Manager
 9711 Washingtonian Blvd., Suite 380
 Gaithersburg, MD 20878
 +1 (301) 718-2910
foundation@sfpe.org

9. With SFPE Staff, produce learning assessment modules to accompany the virtual handbook to measure learning effectiveness of those using the tool.
10. Check in with the Project Manager (SFPE) at least twice per month to review progress. Meet with the Project Advisory Panel to review progress monthly.
11. Access to any tools or research materials produced as part of the project.
12. Collaborate with SFPE Staff to produce a one-hour introductory webinar on how to utilize the virtual handbook tool.

Project Timeline

November 2021	Consultant selected. SFPE staff work with Engineering Consultant to plan virtual 1.5-day workshop for fire service representatives; send invites to fire department representatives
December 2021	Engineering Consultant and SFPE staff lead virtual 1.5-day workshop with fire department representatives
Dec. 2021 – March 2022	Engineering Consultant compiling notes from workshop, conferring with Advisory Panel and SFPE staff, and producing draft of Virtual Handbook; beta version due by end of March 2022
April 2022	Advisory Panel reviews beta version of the Virtual Handbook; Virtual application development begins. Engineering Consultant plans pilot field visits and risk reduction assessment with selected fire departments (2).
May 2022	Engineering Consultant conducts two pilot field visits and risk assessment; SFPE staff assists as needed
June 2022	Engineering Consultant completes risk assessment and works on revising Virtual Handbook given new information; Engineering Consultant’s pilot field visits and risk assessment due end of June; SFPE staff assists as needed
July 2022	Advisory Panel reviews risk assessment; SFPE staff supervises revisions to virtual application for accessing Virtual Handbook
August 2022	SFPE staff and Engineering Consultant developing the webinar for dissemination with input from Advisory Panel and fire department pilot partners; Webinar takes place, hosted by SFPE
Late 2022	Dissemination activities related to the Virtual Handbook are expected to continue after the Period of Performance ends, including a potential invitation for participating fire department representatives to participate in SFPE’s WUI Symposium at the end of 2022.



Contact us:
Leslie Marshall, Ph.D.
Foundation Manager
9711 Washingtonian Blvd., Suite 380
Gaithersburg, MD 20878
+1 (301) 718-2910
foundation@sfpe.org

Cost and Duration

As outlined above, the project is expected to run from November 2021 – August 2022. As this project is primarily externally funded, we have strict cost requirements. **Successful proposals may not exceed \$55,000 USD total.**

This total cost should be inclusive of all project deliverables described above and summarized below, except for certain travel expenses for the two site visits (to be covered by SFPE) and the costs associated with hosting the webinar and building the mobile platform for the handbook (both covered by SFPE):

1. Virtual workshop with fire department representatives and other stakeholders
2. Virtual workshop summary report and outline of approach to virtual handbook content
3. Beta / draft version of virtual handbook for piloting in the field
4. Two site visits with fire departments in the United States to pilot the beta version of the handbook and conduct property risk reduction assessment potential when using the virtual handbook; produce summary report on risk reduction potential
5. Revised final version of the virtual handbook incorporating lessons learned during piloting and feedback from Project Advisory Panel and other stakeholders
6. Collaboration with SFPE staff to produce the mobile version of the virtual handbook (both beta and final versions)
7. Webinar to train fire departments in how to use the virtual handbook in the field
8. Meetings with Project Manager (at least twice monthly) and the Project Advisory Panel (at least monthly)

How to Respond

Applicants should submit a single proposal document *no longer than 6 pages single-spaced* outlining:

- 1. Qualifications and experience for all relevant team members (2 pages max)**
 - a. This must include evidence of prior experience in engineering-based approaches to fire property risk assessment and mitigation in the Wildland-Urban Interface.
 - b. Preference is for respondents with experience applying engineering-based resources to fire departments operating in the WUI in the United States.
- 2. Proposed approach to virtual handbook development (2 pages max)**
 - a. This must account for all project deliverables listed above.
- 3. Commitment to project timeline and deadlines for completion of deliverables (1 page max)**
 - a. The successful respondent must be able to meet the deadlines and deliverables as described in this request for proposals. Include an affirmative acknowledgment of these deadlines and assurance that you will be able to meet them on time and on budget.
- 4. Budget & Reporting Requirements (1 page max)**
 - a. Respondents should indicate that they can provide all project deliverables within the maximum cost allowed for this project of \$55,000 USD.



Contact us:
Leslie Marshall, Ph.D.
Foundation Manager
9711 Washingtonian Blvd., Suite 380
Gaithersburg, MD 20878
+1 (301) 718-2910
foundation@sfpe.org

- b. Once a proposal is selected, SFPE staff will determine the timeline for payment as part of the contracting process with the selected respondent.
 - c. The successful respondent must be able to keep detailed records (including receipts) for all expenses incurred under the scope of this project and may be required to abide by federal contracting guidelines.
- 5. Completed “Conflict of Interest Disclosure Form for Contractors & Grant Recipients” available on the SFPE Foundation [website](#)**
- a. Note: This form should be included at the end of the proposal document, but it does *not* count towards the six-page limit.

Applicants are permitted to submit a single proposal. Should multiple proposals be received by a given applicant, the applicant will be given the choice of which to prioritize for Foundation review.

Proposals will be reviewed and evaluated based on the following criteria:

- *Team Qualifications (25%)*
- *Scientific Merit of Proposed Approach (25%)*
- *Ability to Meet Project Deadlines / Achievability (25%)*
- *Ability to Deliver within Budget / Project Value (25%)*

Deadline for Submittals: 1:00 pm, EDT, October 27, 2021

Direct submissions and inquiries to Dr. Leslie Marshall, SFPE Foundation Director, at foundation@sfpe.org.

Contractor Selection

Proposals will be evaluated by SFPE & SFPE Foundation Staff and the Project Advisory Panel based on the proposal elements listed above. The selected contractor may be required to abide by all applicable guidelines for federal award recipients and may be asked to complete additional forms to ensure compliance with federal, state, and local guidelines, as well as any policy and regulatory guidelines required by SFPE and SFPE Foundation.

Intellectual Property

SFPE and SFPE Foundation will retain the rights to the final deliverables and any tools, documents, or other materials produced under the scope of this project. SFPE and SFPE Foundation will utilize these items to the extent required by the terms and conditions of SFPE’s grant agreement with the funding agency, FEMA.