Bureau of Land Management

BLMHQ - BLM Headquarters

2022
FA-NOFO0023-002

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A. Program Description

Authority:

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (FLPMA), 43 USC §1737 (b), Public Law 94-579; Department of the Interior and Related Agencies Appropriation Act for FY 1998 (P.L.105-83; H.R. Report 105–163) and subsequent years (P.L. 106–291; H.R. 106–914). INFRASTRUCTURE INVESTMENT AND JOBS ACT. Public Law 117-58. Title VIII. Natural Resources-Related Infrastructure, Wildfire Management, and Ecosystem Restoration._Section 40803 c (9)

Assistance Listing:
15.232

Program Background, Objective, and Goals:

The Joint Fire Science Program (JFSP) is a partnership of seven federal wildland fire management and research agencies that have a shared need to address problems associated with managing wildland fuels, fires, and fire-impacted ecosystems.

The partnering agencies include the U.S. Department of Agriculture (USDA), Forest Service (FS) and five bureaus in the U.S. Department of the Interior (DOI): Bureau of Indian Affairs, Bureau of Land Management, National Park Service, Fish and Wildlife Service, and Geological Survey. The DOI also is represented by the Office of Wildland Fire. Funding to support the program is provided by both DOI and FS.

For further background on the JFSP, those considering submitting proposals are encouraged to visit its website at https://www.firescience.gov.

Objectives: The U.S. Congress directed the DOI and USDA FS to develop a Joint Fire Science Program and Plan to prioritize and provide sound scientific studies to support the land management agencies and other stakeholders in addressing issues associated with wildland fire. Current research priorities are identified as task statements in this Notice of Funding Opportunity (NOFO).

Public Benefit: Scientific studies funded by JFSP help to:
- ensure the health and safety of public and other lands
- provide protection of life, infrastructure, and natural and cultural resources.

Program Strategic Goals: As a jointly funded program, JFSP research priorities align strategically with the priorities of the Secretary of Interior and the Secretary of Agriculture.

Specifically, JFSP-funded research addresses the Secretary of Interior's priorities to "conserve at least 30% each of our lands and waters by the year 2030" and "**centering equity and environmental justice**" and Secretary of Agriculture's priorities to "foster productive and sustainable use of our National Forest System lands and to strengthen the stewardship of private lands through technology and research." In addition, with respect to wildland fire in particular JFSP research priorities address both Secretaries' goals of reducing the occurrence and impacts of catastrophic wildfire through active management by contributing to the underlying scientific understanding and decision support tools needed to make informed decisions.

Finally, JFSP research priorities, as demonstrated by the task statement included in this NOFO, directly and indirectly support the three goals of the 2014 National Cohesive Wildland Fire Management Strategy ("Cohesive Strategy"):

- Resilient landscapes
- Fire-adapted communities
- Safe and effective wildfire response

B. Federal Award Information

B1. Total Funding

Estimated Total Funding

Based on prior year data, BLM anticipates between $1,500,000 to $6,000,000 in funding for FY 2023. Individual award amounts will depend on the merit review process of application packages and proposed budget. Funding for this program is not guaranteed and is subject to the availability of funds.

BLM is not obligated to make any Federal award as a result of the announcement and only Grants Management Officers and Agreement Specialists can bind the Federal Government to the expenditure of funds

BLM reserves the right to fund projects in the following fiscal year. These awards will not require further competition.

B2. Expected Award Amount

The award size will depend on the number of meritorious applications and the availability of appropriated funds. BLM anticipates the average dollar amount of awards made under this announcement to be between $300,000 to $500,000.

B3. Anticipated Award Funding and Dates

Projects funded through this NOFO will start upon issuance of a notice of award by the BLM Grants Management Officer (GMO) executed through GrantSolutions. JFSP anticipates a late-August to mid-September start date for awards. Agreement terms for funded projects are estimated to range between one and no more than five years and are determined based on the period of performance as stated on the recipient's project proposal.
Projects cannot be funded for more than a five-year period

B4. Number of Awards

Anticipated Number of Awards

The actual number of awards will depend on the number of meritorious applications and the availability of appropriated funds.

B5. Type of Award

Funding Instrument Type

In accordance with the Legislative Authority, an inter-agency agreement will be used for awards issued to federal entities.

A cooperative agreement will be used for non-federal awards and substantive Bureau of Land Management (BLM) involvement will consist of the following:

- The BLM Program Officer (PO) will collaborate with the recipient's Project Manager/Principal Investigator (RPM/PI) to manage technical execution of the project, recommended changes to objectives or technical execution.
- The JFSP program office is in contact with Principal Investigators to ensure projects are progressing according to the submitted proposals including occasional field trips and meetings with Project Manager/Principal Investigator.
- Responsibility for project management, control, and direction will be shared by the recipient and the BLM, however the BLM will have the right to intervene by modifying the project management plan if the project is not staying on schedule and/or technical issues arise.

Cooperative agreement awards cannot be finalized, until awardee completes their enrollment in the Department of the Treasury, ASAP System. See following website: http://www.fms.treas.gov/asap.

If your organization is not enrolled in ASAP, contact the GMO. Federal Awarding Agency Contacts of this funding opportunity.

B6. Additional Funding Information

Funding for projects is not guaranteed and is subject to the availability of funds. Evaluation of proposals is based on the criterion in this NOFO. In appropriate circumstances, BLM reserves the right to partially fund proposals in discrete portions or phases of proposed projects. If BLM chooses to partially fund a proposal, it will do so in a manner that does not prejudice any applicants or affect the basis upon which the proposal or portion thereof, was evaluated and selected for award, and therefore maintains the integrity of the competition and selection process. Funded proposals through this competitive NOFO is not a guarantee of future funding. When or if additional funding becomes available, BLM reserves the right to issue additional awards under this NOFO through the next fiscal year. These awards will not require further competition. Any additional selections will be made in accordance with the terms of this NOFO

and BLM policy. Only Grants Management Officers can bind the Federal Government to the expenditure of funds.

C. Eligibility Information

C1. Eligible Applicants

Eligible Applicants

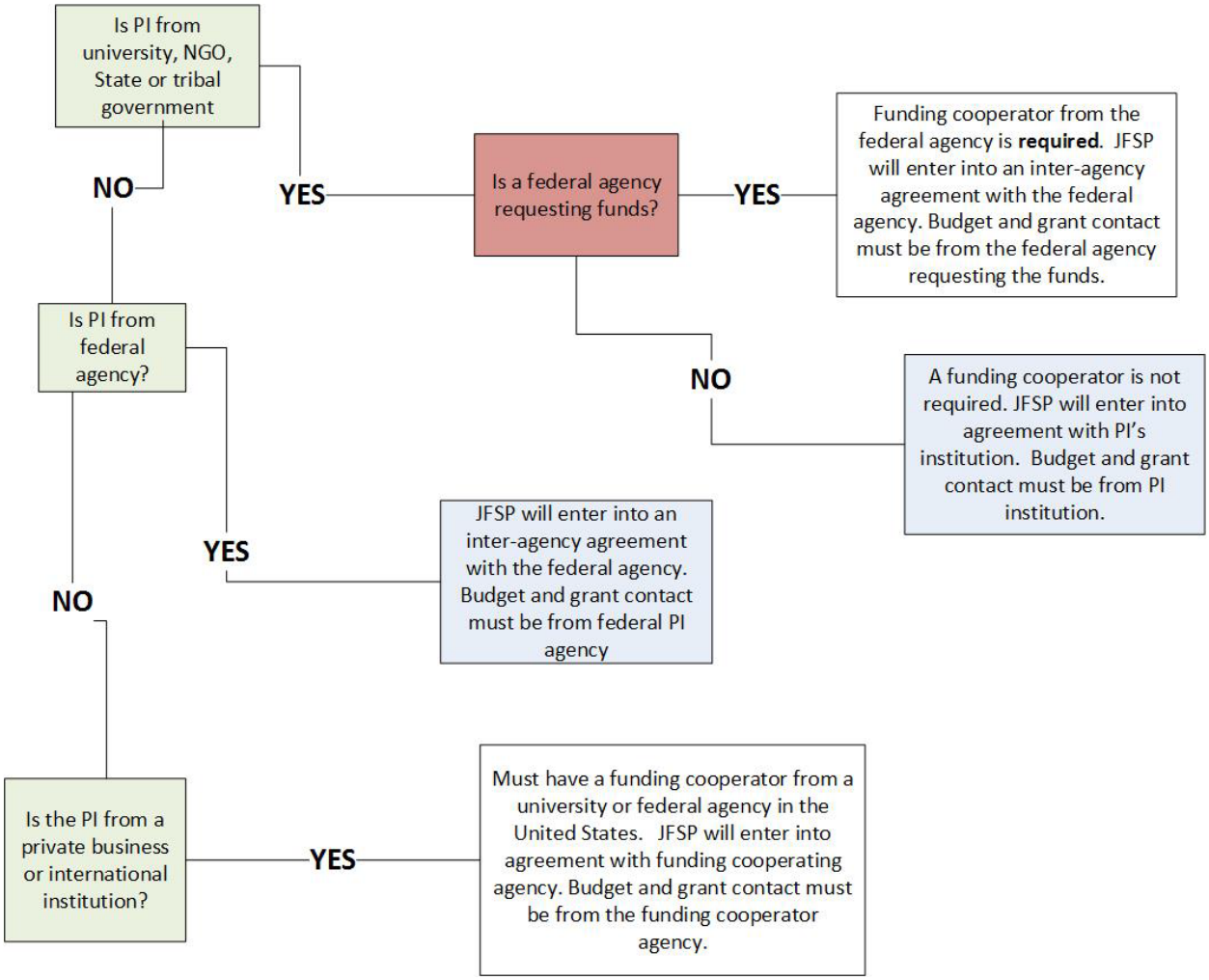
00 – State governments
01 – County governments
02 – City or township governments
04 – Special district governments
05 – Independent school districts
06 – Public and State controlled institutions of higher education
07 – Native American tribal governments (Federally recognized)
12 – Nonprofits having a 501(c)(3) status with the IRS, other than institutions of higher education
13 – Nonprofits without 501(c)(3) status with the IRS, other than institutions of higher education
20 – Private institutions of higher education
11 – Native American tribal organizations (other than Federally recognized tribal governments)
08 – Public housing authorities/Indian housing authorities

- Proposals with a PI from states or that have any international funding, also must identify a funding cooperator from the United States to receive and process the funds.
- Proposals with a university, tribal government, or NGO PI that do not include funding for federal agencies do not need a funding cooperator and funds will route through the PI's institution.
- Proposals that include budgeted funds to be spent by a federal agency and that do not have a federal PI, must list a funding cooperator from the federal agency requesting funds. **Any funds awarded to a federal agency will be issued under an Interagency Agreement.**
- JFSP encourages proposals from any eligible party or partner that is part of a Cooperative Ecosystem Studies Unit (CESU) program. CESUs are partnerships that provide research, technical assistance, and education. If a cooperative agreement is awarded to a CESU partner under a formally negotiated Master CESU agreement, indirect costs are limited to a rate of no more than 17.5 percent of the indirect cost base recognized in the partner's Federal Agency-approved Negotiated Indirect Cost Rate Agreement (NICRA).

JFSP will enter into only one agreement per project with the PI institution or the funding cooperator institution.

- The PI institution or funding cooperator institution will be responsible for entering into sub-agreements with collaborating institutions.
- Budgets must be reviewed and approved by the institution's Budget contact and Agreements contact prior to proposal submission. If a funding cooperator is involved, the Agreements contact and Budget contact must be from the funding cooperator's institution.
- If the funding cooperator is from the Forest Service, the cooperator must be from a Forest Service Research Station. Work with your station funding cooperator to ensure you meet the station requirements for submission.
- JFSP will not provide additional funds to cover budget errors discovered after the proposal submission deadline.
- The end date and indirect costs for all sub-awards must match the end date and indirect costs in the original funding award document. The PI's institution should take into account any potential delays anticipated in executing sub-agreements when proposing project timelines. **(See funding cooperator flowchart below)**

Funding Cooperator Flowchart



Additional Information on Eligibility
Explanation required if "Others" is selected.
Individuals and for-profit organizations are ineligible to apply for awards under this NOFO.

C2. Cost Sharing or Matching

Cost Sharing / Matching Requirement
Cost sharing or matching is not required for this funding opportunity; however, it is strongly encouraged.

Percentage of Cost Sharing / Matching

CESU partners are encouraged to show the difference between their formal Negotiated Indirect Cost Rate and the 17.5% rate agreed upon as a CESU partner as their voluntary cost share.

Applicants may attribute the difference between the JFSP approved indirect cost rate deviation and their formal negotiated indirect cost rate as a voluntary committed cost-share/match (see below).

C3. Other

Foreign Entities or Projects:
This program does not provide funding to foreign entities or for projects conducted outside the United States.

Excluded Parties:
The DOI conducts a review of the SAM.gov Exclusions database for all applicant entities and their key project personnel prior to award. The DOI cannot award funds to entities or their key project personnel identified in the SAM.gov Exclusions database as ineligible, prohibited/restricted or otherwise excluded from receiving Federal contracts, certain subcontracts, and certain Federal assistance and benefits, as their ineligibility condition applies to this Federal program.

Projects being funded under this program do not qualify as youth conservation projects under the Public Lands Corps Act of 1993, 16 U.S.C. §1723(c)(1) (PLCA). Therefore, participants do not qualify for non-competitive hiring status. Projects specifically set aside under the PLCA will be made available under BLM's Assistance Listing (formerly known as CFDA) 15.243 Youth Conservation Opportunities on Public Lands.

JFSP approved indirect cost rate deviation: JFSP has an approved indirect cost rate deviation that limits proposals to a maximum of twenty (20) percent of the direct costs for each institution. Proposals requesting funds for indirect rates higher than twenty (20) percent will not be considered. This memo can be found on the JFSP website at this link: http://www.firescience.gov/documents/BLM_Iindirect_cost_rate_exception_signed.pdf. Proposal funding through a federal funding cooperator must reflect either the prevailing indirect rate for the cooperating federal agency or the JFSP maximum limit of twenty (20) percent, whichever is less.

For non-federal institutions pass-through costs for subawards need to be included as a part of the direct cost calculation for each institution. Your institution must apply this reduced rate of no more than 20% against the same direct cost base identified on your approved indirect cost rate agreement. If your institution uses MTDC (modified total direct costs) as the direct cost base, the indirect cost rate can only be applied to all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and *s*ubawards and subcontracts up to the first $25,000 of each subaward or subcontract (regardless of the period of performance of the subawards and subcontracts under the award). MTDC excludes equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward and subcontract in excess of $25,000.

Federal institutions may include administrative costs for managing subawards of no more than 10% of the amount passed through to the subawardee.

Unrecovered indirect costs can be used as contributed funds in the budget

D. Application and Submission Information

D1. Address to Request Application Package

All proposals must be submitted through the JFSP electronic submission process provided on the JFSP website (https://www.firescience.gov). This announcement includes all information and documents needed to submit an application. Paper copies will not be considered.

Proposals must meet all of the following requirements to be considered. Incomplete proposals will not be considered. No exceptions will be made to either the submission deadline or other submission requirements.

A. Proposal Submission

Proposals must be submitted electronically via the JFSP website (https://www.firescience.gov). Proposals cannot be submitted in Grants.gov. Hard copy, email, or facsimile proposals will not be accepted. Proposals can be created in the database at any time and saved as a draft for submission any time prior to the closing date and time.

- A JFSP database login and password is required to submit a proposal (see section B below). Requests for profiles will be processed in approximately 24 hours.
- The Budget contact must sign into the system and certify the budget is correct before the proposal can be submitted. **Note that the PI will not be able to complete this task for the Budget contact**. The PI must assign this contact on the contact tab before the Budget contact can sign in to complete this process.
- The Agreements contact must sign into the system and certify the budget is correct before the proposal can be submitted. **Note that the PI will not be able to complete this task for the Agreements contact**. The PI must assign this contact on the contact tab before the Agreements contact can sign in to complete this process. Only the PI can submit the proposal.
- Proposals can be saved in the JFSP system and submitted prior to the closing date and time. Submitted proposals can be reverted back to Final Draft by the PI prior to the closing date. If you revert a proposal back to Final Draft you must resubmit the proposal before the closing date and time.
- The JFSP proposal submittal system will not allow proposals to be submitted after the closing date and time.

B. Profiles

- **All** contacts must have a profile in the JFSP database that must be entered on the contacts tab by the PI.
- Proposals cannot be submitted if all required contacts (see Contacts below) are not entered on the contacts tab by the PI.
- It can take up to 24 hours to get a profile created. It is advisable to request profiles early in the process.

- To request a profile or password reset go to the JFSP website and click on the sign in link in the upper right-hand corner of the page. Use the appropriate link for requesting a password reset or requesting a new user registration.

C. Contacts

Proposals may be required to have the following contacts on the contacts tab (see Section IX. Other Information for definitions to understand the role of each contact) assigned to a proposal:

- Principal Investigator (required, only one Principal Investigator can be assigned)
- Funding Cooperator (may be required)
- Budget Contact (required); in some cases, this may be the same as the Agreements contact
- Agreements Contact (required); in some cases, this may be the same as the Budget Contact
- Co-PIs and Collaborators (required, when applicable).

It is the PI's responsibility to ensure all correct contacts are entered into the proposal database. Please read definitions carefully to ensure you have the correct contact from the correct institution listed.

D. Confirmation Page

When the PI submits the proposal, they will receive a confirmation page. It is highly recommended that PIs save or print that page for their records. If this confirmation page is not received the proposal has not been submitted correctly. It is the responsibility of the PI to ensure the proposal has been submitted correctly by the closing date and time.

E. Abstract

Proposers must copy and paste the first three subsections of the proposal overview template (Problem Statement, Objectives, and Benefits) into the Abstract field in the Details tab of the JFSP database. The abstract will become the publicly accessible description of the project.

F. Task Statement Relevancy

Proposers must copy and paste the fourth subsection of the proposal overview template (Task Statement Relevancy) into the Task Statement Relevancy field in the Details tab.

G. Attachments

All required documents and templates must be attached before the proposal can be submitted. All attachments except the budget must be attached as an adobe pdf document; the budget template is in an Excel format. The PI should ensure that no loss of information occurred upon conversion to a pdf document. Attachments over the page limits cannot be submitted. All information in a template must be included as part of that attachment and must be within the page limit. Extraneous materials (e.g., extra graphs and text) are not permitted and will not be reviewed.

Required attachments for all proposals must use templates provided to be considered:

- Proposal overview

- Proposal body
- Literature cited
- Budget spreadsheet (Excel spreadsheet; include a separate worksheet for each institution or contracted costs greater than $10,000)
- Budget narrative (explanation of specific budget assumptions and costs by institution)
- Science Exchange Plan
- Data Management Plan (see below)
- Curriculum Vitae for PIs and Co-PIs (two pages maximum for each person; include relevant publications)

Additional attachments:

- Letter(s) of support (optional, but recommended)
- List of acronyms (optional, but recommended)
- Specific to a task statement (check this year's task statement for additional requirements, if any)

H. Data Management Plan

All proposals are required to submit a Data Management Plan (DMP) using the instructions, template, and example provided (See Section IV.B.5) above).

I. Budget

Budget summary numbers summarized by institution type requesting funds must be entered in the JFSP database on the Budget tab. The budget spreadsheet and budget narrative must be attached on the attachments tab using the spreadsheet template provided.

Proposals cannot be submitted without completing these required fields and attachments. Do not edit spreadsheet formulas and formatting without first contacting Becky Jenison (bjenison@blm.gov).

J. Task Statement Intent

Proposals that do not clearly and directly meet the intent of the task statement will not be forwarded to peer review or considered for funding. The PI for a proposal that does not meet the intent of the task statement will receive a rejection notice after the administrative review has been completed. In addition, PIs should ensure they are submitting their proposal for the correct task statement in the JFSP database.

K. Format

Proposals not following the required template(s) will not be considered. Proposals must use an 11-point font or larger. Additional guidance is included in the beginning of each template.

L. Page Limits

Attachments exceeding the page limits cannot be submitted. Check the page limit in the template and JFSP database. Everything required as part of the template is included in the page limit.

M. Project Location

Project location fields must be completed on the location tab for a proposal to be successfully submitted. Instructions are listed on the project location tab.

N. Signatures

Handwritten signatures are not required. When Principal Investigators (PIs) submit proposals, they will be prompted to enter their password. By typing in the password and submitting a proposal, PIs are certifying that all contacts on the proposal have reviewed the proposal and understand the requirements of their respective roles.

O. Indirect Costs

Proposals must follow JFSP indirect cost guidelines.

P. Contributed Costs

See contributed costs section.

Q. Support Letters

Support letters from intended science end users are not required, but are encouraged, especially for those projects proposing active and sustained engagement with end users. Support letters are useful if they demonstrate existing partnerships, show understanding of the proposed work, articulate how the work will benefit the end user. Support letters that appear to be ghost-written by the PI or are form letters are much less useful. If submitted, letters must be combined into one pdf document and attached on the attachments tab. Support letters sent by hard copy or email directly to JFSP will not be considered.

R. Past-Due Projects

No proposals will be considered if the work includes a PI or Co-PI who is a PI or Co-PI on a JFSP project that is past due as of the closing date of this announcement. See the JFSP website for the complete JFSP past-due and extension request policy.

D2. Content and Form of Application Submission

1. Steps to Create and Complete a JFSP Proposal

Multiple steps are necessary to create a JFSP proposal, some of which are dependent on prior steps. **Proposals must be submitted electronically via the JFSP website (**https://www.firescience.gov **)**.

Step 1 – PI establishes profile, updates password.

Step 2 – PI initiates proposal (select task, receive proposal #, enter proposal title).

Step 3 – Enter contacts (all contacts establish profiles, update passwords; PI assigns roles). Once the PI enters a contact, they will have access to sign into the database and access the proposal.

Step 4 – Proposal development (templates, requirements).

Step 5 – Complete budget (template, narrative).

Step 6 – Attach all documents (proposal overview, proposal body, literature cited, budget, budget narrative, science exchange, data management plan, CVs, list of acronyms (optional), support letters (optional).

Step 7 – PI enters final details (project location, budget summary, start/end dates, abstract, task statement relevancy, and project category).

Step 8 – Budget Contact and Agreements Contact sign into the database and certify review of budget and budget narrative.

Step 9 – PI submits proposal (you must convert to Final Draft status first before hitting the Submit Proposal Button).

Notes

- Many steps can be in progress concurrently
- All information, including attachments, can be saved as Draft and edited later

2. Task Statement(s)

Task Statement I - Longevity of fuel treatment effectiveness under climate change

Objectives

The objectives of this task statement are to (1) understand patterns of fuel accumulation, vegetation change, and potential fire behavior following fuel treatments over time and (2) inform the frequency and type of treatments needed to maintain treatment effectiveness.

Background

It is understood that because of vegetation recruitment and growth and resultant fuel accumulation, fuel treatments have a limited lifespan in terms of their ability to reduce the extent, intensity, or severity of wildfire under the conditions for which they are designed to be effective (e.g., 97^{th} percentile weather). As a result, initial fuel treatments must be maintained over time with subsequent treatments. Maintenance schedules have often been informed by knowledge of historical fire regimes or available monitoring data. However, as the rate of vegetation and fuel change and fire risk is altered by factors such as warming climate, changing precipitation patterns, and spread of invasive species, historical or baseline conditions may not be appropriate benchmarks for maintenance schedules. Instead, fuel treatment maintenance should be informed by data on the accumulation of different fuel types (e.g., surface fuels, shrub cover, tree regeneration)

over time and their relationship to potential fire behavior and effects. In many cases, however, the rate of fuel accumulation and its relationship to effectiveness, and therefore the initial treatment's lifespan, are unknown.

Numerous short-term and some long-term studies have documented the effects of different fuel treatments on vegetation, fuels, and potential fire behavior and these data have been incorporated into models used to predict long-term effects of fuel treatments. Still, many factors, such as tree and shrub regeneration and recruitment, grass/forb production, and surface fuel accumulation/decomposition remain poorly represented by long-term empirical studies, even though these factors have significant impacts on the longevity of fuel treatment effectiveness. Other factors such as site productivity, disturbance history, and changing climate, are likely to influence vegetation and fuel accumulation patterns, but the impacts of these and other factors are not well understood.

Fuel treatments often incorporate additional objectives to create or maintain desired ecological conditions or processes (e.g., vegetation composition, wildlife habitat, drought resilience). Studies on the short-term response of ecological attributes, such as vegetation, soils, and wildlife, to fuel treatments are common and well-documented, but long-term studies are lacking. In addition, maintenance treatments, which often differ from the initial treatment (e.g., initial thinning with prescribed fire maintenance), may result in different ecological outcomes than what is observed in the short-term after an initial treatment. Yet, the long-term effects of maintenance treatments on different ecological attributes have received little study.

Research Needs

Research proposals are sought that re-measure existing long-term field studies to gain a deeper understanding of the patterns of fuel accumulation, vegetation change, and potential fire behavior following fuel treatments and the implications for potential fire behavior and other ecological attributes or processes.

Specific research needs include:

1. Improved understanding of vegetation change and fuel accumulation for different fuel types (e.g., grasses, tree seedlings, shrubs, canopy fuels) following fuel treatments and how rates of change vary with site characteristics (e.g., productivity, disturbance history), fuel treatment characteristics (e.g., type, season, frequency), and climate regimes.
2. Improved understanding of the longevity of fuel treatment effectiveness and long-term maintenance needs from the perspective of change over time in potential fire behavior (e.g., flame lengths, rate of spread) and other ecological attributes that are incorporated into fuel treatment objectives.
3. Incorporation of additional collected data into existing models and decision support tools that predict ecosystem change over time under different climate change scenarios and use of such models to project trends in fuel treatment effectiveness in the future.

Proposals must address the first two research needs. Addressing the third research need is optional.

Proposals must clearly describe in the Methods section the extent, format, and quality of the available pre-existing data, as well as describe the sampling design under which these data were collected. Pre-existing data should provide the appropriate baseline information necessary to address the above research needs. Proposals will be considered only if the experimental design, measurement methodology, data, and results for the prior measurement(s) have been published as a scientific manuscript or documented to an equivalent extent and are appropriate to address the research needs above.

For the purpose of this task statement, a fuel treatment may include any of all of the following: mechanical treatment (e.g., thinning, mastication), biological treatment (e.g., grazing, seeding), chemical treatment (e.g., herbicide), fuel break, and prescribed fire. A long-term study is defined as greater than 10 years after initial fuel treatment. Depending on the vegetation type and region, one or more maintenance treatments may have occurred during this timeframe. Wildfire occurrence within the area under study may be evaluated as a maintenance treatment provided its severity stayed within prescription for a comparable prescribed burn for the area.

Task Statement II - Fuels treatment effectiveness across landscapes

Objective

The objective of this task statement is to inform planning and implementation of landscape fuel treatment strategies that allow for safe and effective management of wildfire to meet protection and resource management objectives.

Background

Past studies on effectiveness of fuels treatment have largely focused on detecting changes in fire behavior or effects within the footprint of a treated area impacted by wildfire. From this work, we know that fuels treatments can be effective in meeting multiple fire and resource management objectives. Yet managers also recognize that it is neither appropriate nor possible to treat all areas that could be subject to wildfires. More recent studies focused on landscape scales have found that amount of area treated, treatment size, configuration, and strategic location are important factors influencing subsequent wildfire intensity and severity patterns and spotting distances. Case studies have shown that the change in fire behavior in wildfires as they encounter fuel treatments can lead to more effective wildfire response. However, a synthesis of such studies concluded that research on effectiveness of landscape fuel treatment strategies is still in its infancy (Jain et al. 2021). Additional studies are needed on how multiple characteristics of landscape fuel treatment strategies (e.g., treatment configuration, placement, interaction with topography, size distribution) drive wildfire outcomes both alone and in combination with wildfire suppression operations.

The Joint Fire Science Program (JFSP) is soliciting proposals for research that evaluate the effectiveness of landscape fuel treatment strategies. Studies are needed to determine how different characteristics of landscape fuel treatment strategies (e.g., size distribution, configuration, percentage area treated, saturation, incorporation of unplanned ignitions)

can affect subsequent wildfire behavior or effects and the conditions (e.g., fire weather, topography) under which such strategies are effective. If strategic landscape placement of fuel treatments can mitigate wildfire behavior, it should provide opportunities for effective fire suppression strategies that minimize costs and threats to values at risk while maximizing firefighter safety and the ecological benefits of wildfire. However, additional studies are needed to evaluate and develop metrics for how landscape fuel treatment strategies may enable firefighters to safely meet multiple resource management and protection objectives.

Research questions

1. How do the characteristics of landscape fuel treatment strategies (e.g., area treated, configuration) influence patterns of intensity, spotting, rate of spread, or severity for subsequent wildfires?
2. How does the answer to the question above vary with climatic variables (e.g., fire danger rating), treatment variables (e.g., treatment types, ages), or environmental conditions (e.g., terrain, fuel type)?
3. What landscape fuels treatment strategies best enable effective wildfire response strategies? What metrics can be used to gauge the effectiveness of landscape fuel treatment strategies for use in wildfire suppression operations?

Submitted proposals must directly address the first research question and either research question 2 or 3 above. Addressing all three questions is optional. For the purpose of this task statement, a landscape fuel treatment strategy is defined as a series of fuel treatments across a landscape, implemented over time and designed to limit wildfire extent or severity. A fuel treatment can include any of the following: mechanical treatment (e.g., thinning, mastication), biological treatment (e.g., grazing, seeding), chemical treatment (e.g., herbicide), prescribed fire, and wildfire use for resource benefit. To evaluate landscape fuel treatment strategies, studies must consider subsequent wildfire outcomes both within and outside the footprint of treated areas. It is expected that investigators will use field-based studies, interviews, modeling, or a combination thereof to address the research questions.

Jain, T.B., I. Abrahamson, N. Anderson, S. Hood, B. Hanberry, F. Kilkenny, S. McKinney, J. Ott, A, Urza, J. Chambers, M. Battaglia, J.M. Varner, and J.J. O'Brien. 2021. Effectiveness of fuel treatments at the landscape scale: State of understanding and key research gaps. JFSP Final Report 19-S-01-2.

Task Statement III - Pre-fire management actions for reducing post-fire hazards

Objective

The objective of this task statement is to gain better understanding of the factors that lead to successful cross-jurisdictional pre-fire planning aimed at reducing the potential for post-fire hazards, through synthesis and evaluation of existing tools and investigations of enabling conditions that foster successful cross-jurisdictional planning and action.

Background

Wildfires across the U.S. frequently diverge from what many consider beneficial, resulting in burns that create diverse and long-term impacts to human and natural communities. Resulting post-fire hazards—flooding, erosion, debris flows, invasive species incursion, vegetation type conversion, and loss of watershed function—can last for decades (or longer) and have profound direct and indirect impacts on communities both within and outside the original fire boundary. For example, fire-induced flooding and debris flows can damage or destroy structures and public infrastructure and impair the quality of municipal water supplies. Spread of invasive species or other vegetation type conversion facilitated by wildfire can impact multiple ecosystem services, including rangeland health and critical species habitat.

Many management actions are taken after a wildfire occurs to mitigate post-fire hazards, with often limited success. Planned management actions taken long before a wildfire occurs can also reduce the risk that post-fire hazards can pose for ecosystems, communities, or ecosystem services on which communities rely. Management actions like thinning, prescribed fire, seeding, and use of wildfire for resource benefit have been shown to be effective in this regard. For example, understory thinning and frequent low intensity prescribed fire in forested systems can deter severe wildfire and the associated the negative impacts on water quality in downstream water bodies. Resources devoted to early detection and eradication of invasive species may prevent populations from expanding in the event of a wildfire and altering ecosystem processes. To that end, many have called for a greater focus on actions taken before a wildfire occurs to reduce post-fire hazards and to collaboratively plan such action across jurisdictions impacted by post-fire hazards (e.g., land management agencies, water utilities, communities).

To inform pre-fire management actions to best reduce post-fire hazards, many have developed methodologies to map areas with coupled high risk of wildfire and potential negative post-fire effects to valued resources both within and outside wildfire boundaries. For example, some have used historical ranges of fire severity to estimate debris-flow potential. Others have combined output from fire behavior models with flooding and debris-flow models. For rangeland systems, investigators have developed maps of wildfire and invasive species risk to inform pre-fire management priorities and proposed methodologies for incorporating hydrologic data in such assessments. While many mapping methodologies have been developed that characterize coupled potential wildfire risk and post-fire impacts, it is unclear the degree to which these incorporate multiple post-fire hazards, are applicable across the diverse conditions in various jurisdictions (e.g., wildland vs. urban interface), have been utilized to inform pre-fire management actions, and can facilitate cross jurisdictional planning and collaboration. An important first step is to synthesize and evaluate the slate of existing tools and methodologies that can be used to assess the potential for wildfire and post-fire hazards. In addition, there is a need for broader understanding of the factors that facilitate cross-jurisdictional planning and implementation of management actions that proactively reduce potential post-fire hazards before wildfire occurs.

<u>Research needs:</u>

1. Synthesis and evaluation of available tools and methodologies that assess both wildfire risk and potential post-fire impacts, including the strengths and weaknesses of different approaches, how they incorporate multiple post-fire hazards, their applicability to multiple jurisdictions, and how they are utilized in pre-fire planning efforts.
2. Greater understanding of the enabling conditions that lead to cross-jurisdictional planning and implementation of management approaches aimed to proactively reduce post-fire hazards before wildfire occurs, including but not limited to, the characteristics of communities, availability of resources, or history with wildfire and post-fire hazards.

Proposers must address at least one of the research needs above to be responsive to the task statement. Addressing both research needs is optional. It is expected that investigators will use literature searches, case studies, surveys, interviews, or a combination thereof to address these research questions. The focus of syntheses and evaluations of available tools can include those applicable to a particular ecosystem type, region, or nationally.

Task Statement IV - Social and political factors that influence fire suppression and rehabilitation costs

Objective

The objective of this task statement is to evaluate understudied factors that influence costs associated with wildfire suppression and immediate post-fire rehabilitation to inform cost models and performance metrics for efficient use of fire suppression and rehabilitation resources.

Background

Federal and state agencies collectively spend billions of dollars annually on fire suppression and immediate post-fire rehabilitation and these costs have been steadily increasing over the last two decades. Increases in such costs may be inevitable as more suppression and rehabilitation resources are needed to respond to increasing wildfire acreage and threats to life, property, and other valued resources. Increasing costs also present significant strains on fire management agency budgets and likely correlate with increased exposure of firefighting personnel to dangerous conditions in the fire environment. It is often unknown if increased investment in suppression or rehabilitation resources and the associated risk to firefighting personnel is well justified in terms of increasing the likelihood of meeting incident objectives. A better understanding of the drivers of fire suppression and post-fire rehabilitation resource use and associated costs is needed to develop improved expenditure models and performance metrics to inform cost effective fire management strategies.

It is well established that fire suppression costs are correlated with fire size, fire intensity, fuel type, and proximity to the wildland urban interface and such factors are incorporated in existing expenditure models. However, these factors alone likely do not explain much of the variation in fire suppression costs seen across years, regions, and wildfires. Few

studies have evaluated the role of socio-political or institutional factors in driving suppression costs. For example, newspaper coverage and political pressure are among the important factors. The influence of additional factors, such as resource availability, demographics and other characteristics of threatened communities, presence of threatened and endangered species habitat, has received little study. Decision support tools and resources designed to inform incident management decisions, such as Risk Management Assistance and the Wildland Fire Decision Support System, may lead to more cost-effective use of suppression resources. Such tools or resources, however, have not been evaluated in this context. In addition, costs associated with post-fire rehabilitation are expected to increase with area burned, proximity to values-at-risk from post-fire erosion and flooding (e.g., roads, municipal watersheds), and natural resource value of the burned area (e.g., timber resources). Yet, no systematic study has evaluated these or other factors in relation to post-fire rehabilitation costs.

Research Needs

1. Empirical studies that evaluate how social, political, or institutional factors influence fire suppression resource use and associated costs. Studied factors should include those not currently incorporated in fire suppression expenditure models and may include, but are not limited to, expectations of management partners, community characteristics, manager experience, risk tolerances, or resource availability.
2. Empirical studies that document drivers in post-fire rehabilitation costs. Examples of driving factors may include, but are not limited to, proximity to values-at-risk, resource value of the burned area, or expectations of management partners.
3. Studies that utilize collected or existing data characterizing important social and political factors to improve fire suppression or post-fire rehabilitation expenditure models or performance metrics for cost-effective fire management strategies.

Proposers must address at least one of the research needs above to be considered responsive to this task statement. Addressing more than one research need is optional.

For the purpose of this task statement, costs associated with post-fire response are those incurred through programs such as the U.S. Forest Service Burned Area Emergency Response and the U.S. Department of the Interior Emergency Stabilization and Burned Area Rehabilitation programs to address immediate and near-term (out to five years) impacts of wildfire and wildfire suppression actions.

3. Budget and Funding Policy

a) Funding Cooperator

Proposal may require a funding cooperator. See flowchart to determine if a funding cooperator is needed.

b) Indirect Costs

The JFSP recognizes that agencies and organizations participating in the program need to recover reasonable indirect costs. Budget feasibility (cost effectiveness) of

the individual projects, however, is a determining factor in the final selection process. JFSP has an approved indirect cost rate deviation that limits proposals to a maximum of twenty (20) percent of the direct costs for each institution. Proposals requesting funds for indirect rates higher than twenty (20) percent will not be considered. This memo can be found on the JFSP website at this link: http://www.firescience.gov/documents/BLM_Iindirect_cost_rate_exception_signed.pdf. Proposal funding through a federal funding cooperator must reflect either the prevailing indirect rate for the cooperating federal agency or the JFSP maximum limit of twenty (20) percent, whichever is less.

For non-federal institutions pass-through costs for subawards need to be included as a part of the direct cost calculation for each institution. Your institution must apply this reduced rate of no more than 20% against the same direct cost base identified on your approved indirect cost rate agreement. If your institution uses MTDC (modified total direct costs) as the direct cost base, the indirect cost rate can only be applied to all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and *s*ubawards and subcontracts up to the first $25,000 of each subaward or subcontract (regardless of the period of performance of the subawards and subcontracts under the award). MTDC excludes equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward and subcontract in excess of $25,000.

Federal institutions may include administrative costs for managing subawards of no more than 10% of the amount passed through to the subawardee.

Unrecovered indirect costs can be used as contributed funds in the budget.

Indirect costs example

Scenario

- The PI is from a university or federal agency (lead institution)
- Co-PI is from a cooperating university or NGO (cooperating institution)
- The calculated expenses in the Budget for the lead institution are $200,000 (salary, fringe benefits, travel, equipment, etc.)
- The calculated expenses in the Budget for the cooperating institution are $40,000

Calculation of indirect costs

1. Cooperating institution

Maximum allowed indirect costs (20%)

$40,000 * 0.20 = $8,000

Total Budget for cooperating institution

$40,000 + $8,000 = $48,000

2. Lead institution

Maximum allowed indirect costs (20%) their direct costs

$200,000 - $23,000 (difference between $48,000 - $25,000 subaward allowed) = $177,000

$177,000 * 0.20 = $35,400

3. Total Budget = $200,000 + $35,400 = $235,400

Points of emphasis

- Lead institutions can include pass-through costs for each cooperating institution in their budget.
- Pass-through costs are calculated based on the total budget for each cooperating institution, including the indirect costs calculated by the cooperating institution.
- Cooperating institutions should not include pass-through costs in their budgets.
- Institutions should use their negotiated indirect cost rates with their cooperating institutions, but cannot exceed JFSP maximums.

c) Small Business Innovation Research (SBIR) Costs

Certain proposals may be required to pay a percentage of the project's costs into the Small Business Innovation Research (SBIR) program. Proposals for which the funds are transferred to a Forest Service institution and subsequently a portion of the total budget is awarded to a non-federal entity through a sub-agreement or sub-contract may be required to pay the prevailing rate of the total funds awarded externally to the SBIR program. PIs should check with their Agreements contact to determine if this applies to your proposal and to determine the current rate.

d) Equipment Policy

Investigators are encouraged to contribute equipment (see 2 CFR Part 200.313) to conduct research studies funded by JFSP from existing equipment inventories. Contributed equipment should be included as "contributed costs" in JFSP budget spreadsheets and on the budget tab.

If necessary, equipment is not available, JFSP will partially or fully fund equipment needed to conduct research funded by JFSP. In no case will JFSP pay more than $5,000 for a piece of equipment. If a new piece of equipment costing more than $5,000 is needed for the proposed project, proposal investigators are expected to contribute the remaining costs in excess of $5,000.

This criterion is to be applied for each and every piece of equipment.

Proposals proposing to use Unmanned Aircraft Systems (UAS) must comply with Secretarial Order 3379. Specifically, the following sections of the Secretarial Order must be addressed in the proposal.

"*In order to better ensure that the Department's minimum needs properly account for American technology and cybersecurity concerns and are based on the foregoing considerations, heads of affected Bureaus/Offices shall immediately take the following actions, consistent with governing laws, regulations, and policy and to the maximum extent practicable:*

1. *Limit Department funds from being expended for Designated UAS.*

2. *Condition all Department contracts, grants, and cooperative agreements relying on UAS for achieving approved objectives on the requirement that funds will not be expended on Designated UAS.*

3. *Condition all parties' operations pursuant to a Department contract, grant or cooperative agreement on the requirement that Designated UAS will not be operated on Department-managed lands*."

e) Salary Policy

Salaries of permanent full-time employees are not paid by JFSP and must be provided by employing institutions. This includes university faculty on 12-month tenure-track appointments that have contracted salary.

JFSP will provide salary funding for university research appointment, part-time, temporary, term, and post-doctoral employees, as well as graduate and undergraduate students. JFSP will pay salary for academic employees on a 9-month appointment, but only for the months they are not funded by their institution and only for the time focused on their JFSP project. JFSP will not pay salary for other personnel to fill in for employees working on a JFSP project.

Contractors can request salary support to complete contracted work. Salary costs must be limited to only salary and fringe. Other salary cost burdens must be included as indirect costs and are subject to the indirect rate exception that cannot exceed in total 20% of direct costs. See https://www.firescience.gov/documents/BLM_Iindirect_cost_rate_exception_signed.pdf

Student stipends are acceptable costs, but **tuition and other university fees will not be funded**.

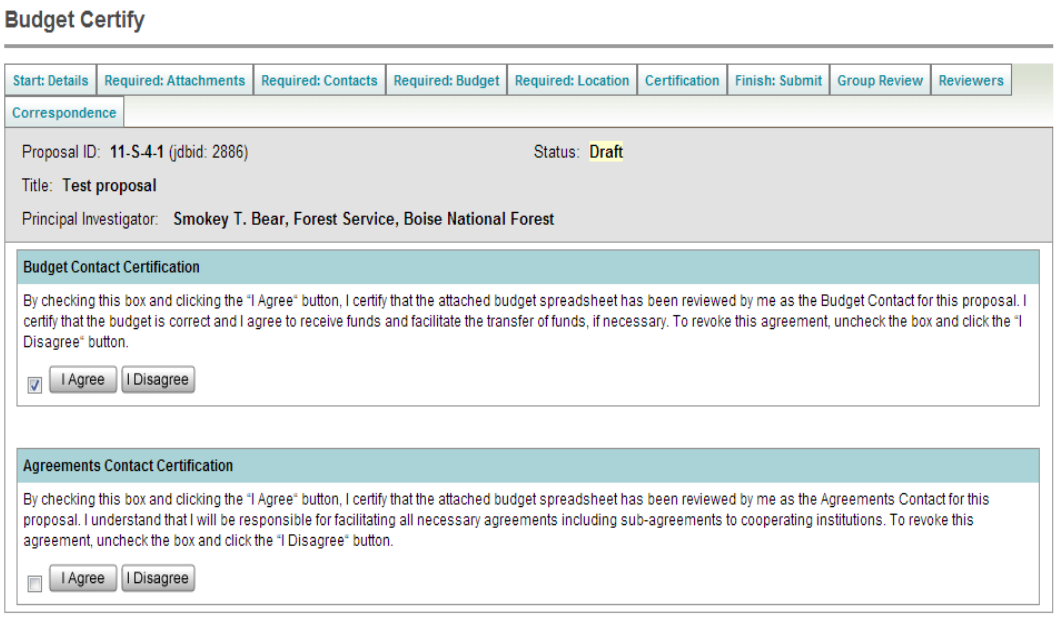
f) Budget

The budget spreadsheet and narrative must be reviewed by the Budget contact and Agreements contact to ensure all costs have been included and the budget is correct, including indirect charges. JFSP will not provide additional funds to cover errors discovered after the proposal submission deadline.

Budget spreadsheet must use the provided template and have a separate worksheet for each institution requesting or contributing funds, including all sub-agreements and contracted costs over $10,000. Identify all work that will be accomplished, including a breakdown of all tasks to be completed, and provide a detailed budget estimate in accordance with 2 CFR Parts 200.317 through 200.326. Contracted indirect costs and fees are subject to the indirect rate exception. Contracted costs under $10,000 must still be explained in detail in the budget narrative but do not require a separate worksheet in the budget template.

Budget narratives must have the level of detail provided in the example in the budget narrative template. Lump sum costs are not acceptable in any category, without a detail breakdown of how the costs were determined. Funded proposals will be closely scrutinized for allowable and reasonable costs before an award is issued. The JFSP also reserves the right to negotiate final budget numbers based on the final approved work scope.

The Budget contact and Agreements contact must sign in to the JFSP system and certify the budget is correct and that they understand their role in receiving funds and facilitating agreements. Proposals cannot be submitted by the PI if both contacts have not completed this task in the database. (**See screen print below**)



Proposals will be funded via cooperative agreement or Interagency Agreement. Budget contact and agreements contact must ensure that budgets have the correct indirect rates for your circumstances.

The JFSP does not fund projects that are, or should be, funded internally from existing accounts (such as routine agency monitoring) or operational portions

(such as the installation of fuels treatments or development of fire management plans) of other projects.

Funding is usually distributed in late summer or early fall. Budgets should be planned with this timing in mind.

5. Data Management Plan (DMP)

It is the intent of JFSP that all data collected, generated, or compiled through JFSP funds are of high quality and made freely available to others within a reasonable time period. The JFSP recognizes that preparation of data and metadata for publication is a time consuming process. Adequate funds to support this work should be included in proposal budgets.

A Data Management Plan (DMP) must be attached as a separate document and is limited to two pages maximum. The DMP will be considered in the proposal review process. See the DMP template and instructions for further details.

Submission of initial metadata to the JFSP, to be provided ultimately to the Forest Service R&D data archive (http://www.fs.usda.gov/rds/archive/), will be required at the time of final report submission with data set delivery to a data repository due within six months after that. The JFSP will review the metadata to ensure that all required information is provided (including a pointer to the archival location of the data). Projects will not be considered complete until the metadata have been reviewed and accepted.

To discuss the Archive's services, please contact editor-in-chief Dave Rugg (dave.rugg@usda.gov) or associate editor Laurie Porth (laurie.s.porth@usda.gov).

The FS-RDA will provide the central metadata catalog for all JFSP projects. Upon project completion, investigators are required to submit initial metadata along with their final report to JFSP. To facilitate the required data publishing and cataloging, investigators are strongly encouraged to use metadata standards accepted by the FS-RDA; currently the Federal Geographic Data Committee's Content Standard for Digital Geospatial Metadata - Biological Data Profile. The JFSP will review these initial metadata to ensure that all required information is provided (including a pointer to the intended archival location of the data). Projects will not be considered completed until these metadata have been reviewed and accepted by the JFSP. Failure to meet the preceding submittal requirements may affect eligibility to submit for consideration future JFSP proposals.

Submission of the project's metadata and associated data sets to the chosen repository should occur within six months of final report acceptance. For submittals to the FS-RDA, the editor-in-chief or associate editor will work with

the PI to ensure final acceptability of the metadata and associated data sets. No matter the chosen repository, the PI is responsible for ensuring that final metadata are provided to the FS-RDA. For all collected, generated, or compiled data PIs must ensure that they are evaluated for errors, as well as subjected to data proofing and validation procedures, prior to submittal. The PI is responsible for keeping the metadata in the official catalog current over time.

It is JFSP's policy that PIs can limit release of data sets for up to two years following submission and acceptance of the project's final report and metadata for their personal publication in peer-reviewed journals and for quality assurance purposes. At the end of this period, all data sets must be made publicly available no matter where they are archived.

If a proposal is selected for funding and the award mechanism is a cooperative agreement the following forms will be required at a later date by the issuing Grants Management Officer:

Form Name and Number	✓
SF-424 Application for Federal Assistance	
SF-424A Budget Information - Non-Construction Programs	
SF-LLL, Disclosure of Lobbying Activities (when applicable)	
Project Proposal	
Budget Detail	
Indirect Cost Statement and related Federal Agency-approved Negotiated Indirect Cost Rate Agreement (NICRA) (when applicable)	
Overlap or Duplication of Effort Statement	
Conflict of Interest Disclosure (when applicable)	
Single Audit Reporting Statement (when applicable)	

NOTE: Failure to provide complete information may cause delays, postponement, or rejection of the application.

Conflict of Interest Disclosure

Per the Financial Assistance Interior Regulation (FAIR), 2 CFR §1402.112, applicants must state in their application if any actual or potential conflict of interest exists at the time of submission.

a. *Applicability*.

1. This section intends to ensure that non-Federal entities and their employees take appropriate steps to avoid conflicts of interest in their responsibilities under or with respect to Federal financial assistance agreements.
2. In the procurement of supplies, equipment, construction, and services by recipients and by sub recipients, the conflict of interest provisions in 2 CFR §200.318 apply.

b. *Notification*.
    1. Non-Federal entities, including applicants for financial assistance awards, must disclose in writing any conflict of interest to the DOI awarding agency or pass-through entity in accordance with 2 CFR §200.112.
    2. Recipients must establish internal controls that include, at a minimum, procedures to identify, disclose, and mitigate or eliminate identified conflicts of interest. The recipient is responsible for notifying the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by sub recipients.

c. *Restrictions on lobbying*. Non-Federal entities are strictly prohibited from using funds under a grant or cooperative agreement for lobbying activities and must provide the required certifications and disclosures pursuant to 43 CFR §18 and 31 U.S.C. §1352.
d. *Review procedures*. The Financial Assistance Officer will examine each conflict of interest disclosure on the basis of its particular facts and the nature of the proposed grant or cooperative agreement, and will determine whether a significant potential conflict exists and, if it does, develop an appropriate means for resolving it.

Enforcement. Failure to resolve conflicts of interest in a manner that satisfies the government may be cause for termination of the award. Failure to make required disclosures may result in any of the remedies described in 2 CFR §200.339, Remedies for noncompliance, including suspension or debarment (see also 2 CFR §180).

Uniform Audit Reporting Statement

All U.S. states, local governments, federally recognized Indian tribal governments, institutions of higher education, and non- profit organizations expending $750,000 USD or more in Federal award funds in the applicant's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System, in accordance with 2 CFR 200 subpart F. U.S. state, local government, federally recognized Indian tribal government, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the EIN associated with that report and state if it is available through the Federal Audit Clearinghouse website.

Certification Regarding Lobbying

Applicants requesting more than $100,000 in Federal funding must certify to the statements in 43 CFR Part 18, Appendix A-Certification Regarding Lobbying. If this application requests more than $100,000 in Federal funds, the Authorized Official's signature on the appropriate SF-424, Application for Federal Assistance form also represents the entity's certification of the statements in 43 CFR Part 18, Appendix A.

Disclosure of Lobbying Activities

Applicants and recipients must not use any federally appropriated funds (annually appropriated or continuing appropriations) or matching funds under a Federal award to pay any person for lobbying in connection with the award. Lobbying is influencing or attempting to influence an officer or employee of any U.S. agency, a Member of the U.S. Congress, an officer or employee of the U.S. Congress, or an employee of a Member of the U.S. Congress connection with the award. Cooperative agreement funded applicants and recipients that are selected for funding will be asked to complete and submit the SF-LLL, "Disclosure of Lobbying Activities" form if the Federal share of the proposal or award is more than $100,000 and the applicant or recipient has made or has agreed to make any payment using non- appropriated funds for lobbying in connection with the application or award. The SF-LLL form is available with this Funding Opportunity on Grants.gov. See 43 CFR, Subpart 18.100 for more information on when additional submission of this form is required.

Overlap or Duplication of Effort Statement

Applicants must provide a statement indicating if there is any overlap between this Federal application and any other Federal application, or funded project, in regard to activities, costs, or time commitment of key personnel. If no such overlap or duplication exists, state, "There are no overlaps or duplication between this application and any of our other Federal applications or funded projects, including in regard to activities, costs, or time commitment of key personnel". If any such overlap exists, provide a complete description of overlaps or duplications between this proposal and any other federally funded project or application in regard to activities, costs, and time commitment of key personnel, as applicable. Provide a copy of any overlapping or duplicative proposal submitted to any other potential funding entity and identify when that proposal was submitted, to whom (entity name and program), and when you anticipate being notified of their funding decision. When overlap exists, your statement must end with "We understand that if at any time we receive funding from another source that is duplicative of the funding we are requesting from the Bureau of Land Management in this application, we will immediately notify the Bureau of Land Management point of contact identified in this Funding Opportunity in writing."

D3. Unique Entity Identifier and System for Award Management (SAM)

Identifier and System for Award Management (SAM.gov) Registration: This requirement does not apply to individuals applying for funds as an individual (i.e., unrelated to any business or nonprofit organization you may own, operate, or work within), or any entity with an exception to bypass SAM.gov registration with prior approval from the funding bureau or office in accordance with bureau or office policy. All other applicants are required to register in SAM.gov prior to submitting a Federal award application and obtain a Unique Entity Identifier (UEI) which will replace Data Universal Numbering System (DUNS) number from Dun & Bradstreet In April 2022. A Federal award may not be made to an applicant that has not completed the SAM.gov registration. If an applicant selected for funding has not completed their SAM.gov registration by the time the program is ready to make an award, the program may determine the applicant is not qualified to receive an award. Applicants registering in SAM.gov prior to April 2022, may still be required to obtain a DUNS number prior to completing the registration process within SAM.gov. Federal award recipients must also continue to maintain an active SAM.gov registration with current information through the life of their Federal

award(s). See the "Submission Requirements" section of this document below for more information on SAM.gov registration. **There is no cost to register with Dun & Bradstreet or SAM.gov**. There are third-party vendors who will charge a fee in exchange for registering entities with Dun & Bradstreet and SAM.gov; **please be aware you can register and request help for free**.

Obtain a DUNS Number

In April 2022, the Federal Government will stop requiring DUNS numbers. At that point, entities doing business with the government will use the Unique Entity Identifier (UEI) created in SAM.gov in place of a DUNS number. A UEI will be assigned to entities upon registering with SAM. If an entity is applying for federal financial assistance prior to April 2022, a DUNS number may still be required as part of the SAM registration process. A DUNS Number can be requested through the Dun & Bradstreet website. The official website address is http://fedgov.dnb.com/webform. For technical difficulties, send an email to the D&B SAM Help Desk. Please ensure that you are able to receive emails from SAMHelp@dnb.com. The Grants.gov "Obtain a DUNS Number" webpage also provides detailed instructions. Once assigned a DUNS number, your organization must maintain up-to-date information with Dun & Bradstreet. Applicants must enter their DUNS number in the "Organizational DUNS" field on the SF-424, Application for Federal Assistance form (version 3).

Register with the System for Award Management (SAM)

Applicants can register on the SAM.gov website. The "Help" tab on the website contains User Guides and other information to assist you with registration. The Grants.gov "Register with SAM" page also provides detailed instructions. Applicants can contact the supporting Federal Service Desk for help registering in SAM. Once registered in SAM, entities must renew and revalidate their SAM registration at least once every 12 months from the date previously registered. Entities are strongly encouraged to revalidate their registration as often as needed to ensure their information is up to date and reflects changes that may have been made to the entity's IRS information. If applicable, foreign entities who want to receive payment directly to a U.S. bank account must enter and maintain valid, current banking information in SAM.

D4. Submission Dates and Times

Late applications will not be accepted or reviewed.

Applications must be submitted in English.

Applicants must submit their applications online using the electronic submission process provided on the JFSP website (https://www.firescience.gov).

Due Date for Applications

Application Due Date Explanation

All proposals must be submitted by **December 20, 5:00 p.m. MT**. No exceptions are allowed to this closing date and time.

D5. Intergovernmental Review

An intergovernmental review may be required for applications submissions from a U.S. state or local government prior to submission. Applicants must contact their State's Single Point of Contact (SPOC) to comply with the state's process under Executive Order 12372.

D6. Funding Restrictions

The JFSP recognizes that agencies and organizations participating in the program need to recover reasonable indirect costs. Budget feasibility (cost effectiveness) of the individual projects, however, is a determining factor in the final selection process. JFSP has an approved indirect cost rate deviation that limits proposals to a maximum of twenty (20) percent of the direct costs for each institution. Proposals requesting funds for indirect rates higher than twenty (20) percent will not be considered. This memo can be found on the JFSP website at this link: http://www.firescience.gov/documents/BLM_Iindirect_cost_rate_exception_signed.pdf. Proposal funding through a federal funding cooperator must reflect either the prevailing indirect rate for the cooperating federal agency or the JFSP maximum limit of twenty (20) percent, whichever is less.

For non-federal institutions pass-through costs for subawards need to be included as a part of the direct cost calculation for each institution. Your institution must apply this reduced rate of no more than 20% against the same direct cost base identified on your approved indirect cost rate agreement. If your institution uses MTDC (modified total direct costs) as the direct cost base, the indirect cost rate can only be applied to all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and *s*ubawards and subcontracts up to the first $25,000 of each subaward or subcontract (regardless of the period of performance of the subawards and subcontracts under the award). MTDC excludes equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward and subcontract in excess of $25,000.

Federal institutions may include administrative costs for managing subawards of no more than 10% of the amount passed through to the subawardee.

Unrecovered indirect costs can be used as contributed funds in the budget.

All applicants must include in their budget justification narrative the following indirect cost rate statement and attach to their application any required documentation identified in the applicable statement:

A [insert your organization type] that is submitting this proposal for consideration under the "Wildland Fire Research and Studies" which has a Department of the Interior-approved indirect cost rate cap of 20% rate. If we have an approved indirect cost rate with our cognizant agency, we understand that we must apply this reduced rate against the same direct cost base as identified in our approved indirect cost rate agreement. If we do not have an approved indirect cost rate with our cognizant agency, we understand that we must charge indirect costs against the modified total direct cost base defined in 2 CFR 200.68 "Modified Total Direct Cost (MTDC)". We understand that we must request prior approval

from the BLM to use the 2 CFR 200 MTDC base instead of the base identified in our approved indirect cost rate agreement. We understand that BLM approval of such a request will be based on: 1) a determination that our approved base is only a subset of the MTDC (such as salaries and wages); and 2) that use of the MTDC base will still result in a reduction of the total indirect costs to be charged to the award. In accordance with 2 CFR 200.405, we understand that indirect costs not recovered due to a voluntary reduction to our federally negotiated rate are not allowable for recovery via any other means.

D7. Other Submission Requirements

Proposals must be submitted electronically via the JFSP website (https://www.firescience.gov). Proposals cannot be submitted in Grants.gov. Hard copy, email, or facsimile proposals will not be accepted. Proposals can be created in the database at any time and saved as a draft for submission any time prior to the closing date and time.

E. Application Review Information

E1. Criteria

The Government reserves the right to reject any and all proposals that do not meet the requirements of this NOFO and are determined to be outside the scope of the authority under which this announcement is posted.

The evaluation process will consist of the following four screening levels:

1. First Level Screening—Basic Eligibility

a. Applications will be screened to ensure that applications meet basic eligibility requirements. Depending on the specifics of the opportunity, screening may include, but is not limited to, the following:

1) Program administrative requirements are met, including task statement intent;

2) Submission is timely;

3) Complete and properly executed application package documents are included;

b. Applications must satisfy basic eligibility screening requirements to be considered for further review.

Note: The relevancy check includes assessing whether the proposal (1) responds to the intent of the task statement and (2) falls within JFSP's mission to support fundamental and applied research and science exchange. The relevancy check is a threshold review and if determined not to be relevant, no further evaluation of the proposal will occur.

2. Second Level Evaluation—Merit Review Evaluation via External Peer Review

Review Criteria
Note: Review criteria are not arithmetically scored or weighted. Applicants, however, should note that the scientific merit criterion is given particular attention. Proposals that do not receive strong scientific merit reviews are unlikely to be funded.

Task statement responsiveness
- Does the proposal strongly or only weakly address the intent of the task statement?
- Are significant elements of the proposal extraneous to the intent of the task statement?
- Will the intended results be useful to a broad cross-section of the fire, fuels, and resource management or research community?

Technical Merit
- Does the proposal address scientifically important questions and indicate how it will advance the state of the science?
- Does the proposal reflect the relevant literature that relates to the research issue and provides a basis for the proposed study design?
- Are objectives, questions and hypotheses clearly articulated? For hypotheses, are they stated in a testable manner?
- Is the study design adequate and associated with clear and defensible proposed analytical methods?
- Are the methods overall sufficiently rigorous to produce credible results?
- Is the proposal innovative or contain elements of risk that are justifiable in terms of potential benefits?
- Does the data management plan adequately capture the data management aspects of proposed work?

Science Exchange and End User Engagement
- Are important and useful applications and science exchange products described in the proposal?
- Is the scope and scale of planned applications and products sufficient to have meaningful impact?
- Does a sufficient plan exist to exchange results with relevant audiences?
- When relevant, is the maturity of existing science and manager partnerships and level of engagement with end users sufficient given the intended outcomes of the proposed project in terms of science application?
- When relevant, does the proposal provide evidence that investigators intend to collaborate with the JFSP Fire Exchange Network to develop and implement science exchange plans?

Budget
- Is the requested budget reasonable and realistic for the scope and scale of the proposed work?

- Does the budget narrative provide sufficient explanation and justification for the requested budget?

Feasibility/Personnel

- Does the project team have the skills and qualifications to execute the proposed work?
- Is the schedule reasonable?
- Have all likely barriers to project execution been identified and mitigated (e.g., National Environmental Policy Act or Endangered Species Act permit requirements?
- Have managers been involved when appropriate?
- When relevant, is project execution subject to the vagaries of weather or other environmental conditions? Have appropriate contingencies or mitigations been identified?

3. Third Level Review—Program Review

The JFSP Office and Governing Board assess the external peer review. The Board makes selection decisions based on the peer review and programmatic priorities.

4. Fourth Level Review—Pre-award Clearance and Approvals

Following the described preceding, three-level review process above, BLM also will complete a business evaluation and determination of responsibility. During these evaluations, the Grants Management Officer will evaluate variables such as:

a. Risk Management. The BLM uses a risk-based approach to evaluate the risk posed by the supporting applicants' projects before it awards Federal funds.

1) BLM is required to review information available through OMB-designated eligibility and/or financial integrity databases, such as the Federal Awardee Performance and Integrity Information System (FAPIIS). The BLM considers factors such as:

(a) Financial stability;

(b) Quality of management systems;

(c) History of performance managing Federal awards, timeliness of compliance with reporting requirements, conformance to the terms and conditions of previous Federal awards, etc.;

(d) Reports and findings from audits performed; and

(e) The applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities.

2) Budget review is based on the following:

(a) Budget line items must be allowable, allocable, reasonable in price, and appropriate for the level of effort needed to accomplish the project

(b) Budget details and narrative must provide adequate explanation of, and justification for, each estimated cost

(c) Requested equipment must be justified and necessary for completion of the project

(d) Cost Sharing/Matching funds must not come from Federal funds, if applicable.

If the results of all pre-award reviews and clearances are satisfactory, an award of funding will be made once the agreement is finalized. If the BLM determines that a Federal award will be made, special conditions that correspond to the degree of risk assessed may be applied to the Federal award

If the results of pre-award reviews and clearances are unsatisfactory, consideration of funding for the project may be withdrawn.

E2. Review and Selection Process

Prior to award, the program will review any applicant statement regarding potential overlap or duplication between the project to be funded and any other funded or proposed project in terms of activities, funding, or time commitment of key personnel. Depending on the circumstances, the program may request modification to the application, other pending applications, or an active award, as needed to eliminate any duplication of effort, or the Bureau may choose not to fund the selected project.

The program may not make a Federal award to an applicant that has not completed the SAM.gov registration. If an applicant selected for funding has not completed their SAM.gov registration by the time the Bureau is ready to make an award, the program may determine that the applicant is not qualified to receive an award. The program can use that determination as a basis for making an award to another applicant.

Prior to award, the program will evaluate the risk posed by applicants as required in 2 CFR 200.205. Programs document applicant risk evaluations using the Bureau's "Financial Assistance Recipient Risk Assessment" form. Prior to approving awards for Federal funding in excess of the simplified acquisition threshold (currently $250,000), the Bureau is required to review and consider any information about or from the applicant found in the Federal Awardee Performance and Integrity Information System. The Bureau will consider this information when completing the risk review. The Bureau uses the results of the risk evaluation to establish monitoring plans, recipient reporting frequency requirements, and to determine if one or more of the specific award conditions in 2 CFR 200.207 should be applied the award.

Applications eligible for merit review will be evaluated by a peer review panel assembled to review, rate, and recommend applications to the JFSP Governing Board for final selection using the above evaluation criteria.

Reviews are treated as confidential documents. Once award decisions are made, applicants will be able to see reviews through the JFSP proposal database.

E3. CFR – Regulatory Information

See the **BLM's General Award Terms and Conditions** for the general administrative and national policy requirements applicable to BLM awards. The BLM will communicate any other program- or project-specific special terms and conditions to recipients in their notices of award.

E4. Anticipated Announcement and Federal Award Dates

Projects funded through this Notice of Funding Opportunity will start once funding is secured and awards issued. Agreements are not effective until fully executed with signature from the BLM Grants Management Officer (GMO). Funding is usually distributed in late summer or early fall. Budgets should be planned with this timing in mind.

F. Federal Award Administration Information

F1. Federal Award Notices

Awards are based on the application submitted to, and approved by, the BLM and are subject to the terms and conditions incorporated into the Notice of Award either by direct citation or by reference to the following: Federal regulations; program legislation or regulation; and special award terms and conditions. *The duration of an agreement is based on the period of performance as stated on the project proposal*.
Recipient will be notified in GrantSolutions with a fully executed Notice of Award with the required terms and conditions. Recipient acceptance of a Federal award from the BLM carries with it the responsibility to be aware of and comply with all terms and conditions applicable to the award. Recipients indicate their acceptance of the Federal award by starting work, drawing down funds, or accepting the award via electronic means.
Final award cannot be finalized, until awardee completes their enrollment in the Department of the Treasury, ASAP System. See following website: https://www.fiscal.treasury.gov/asap.

If your organization is not enrolled in ASAP, contact the Grants Management Officer identified in Section G3 of this funding opportunity.

F2. Administrative and National Policy Requirements

See the "DOI Standard Terms and Conditions" for the administrative and national policy requirements applicable to DOI awards.

Data Availability
Per the Financial Assistance Interior Regulation (FAIR), 2 CFR §1402.315:
(a) All data, methodology, factual inputs, models, analyses, technical information, reports, conclusions, valuation products or other scientific assessments in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual, resulting from a financial assistance agreement is available for use by the Department of the Interior, including being available in a manner that is sufficient for independent verification.
(b) The Federal Government has the right to:
(1) Obtain, reproduce, publish, or otherwise use the data, methodology, factual inputs, models, analyses, technical information, reports, conclusions, or other scientific assessments, produced under a Federal award; and
(2) Authorize others to receive, reproduce, publish, or otherwise use such data, methodology, factual inputs, models, analyses, technical information, reports, conclusions, or other scientific assessments, for Federal purposes, including to allow for meaningful third-party evaluation.

See the **BLM's General Award Terms and Conditions** for the general administrative and national policy requirements applicable to BLM awards. The BLM will communicate any other program- or project-specific special terms and conditions to recipients in their notices of award.

F3. Reporting

Financial Reports
All recipients must use the Standard Forms SF-425, Federal Financial Report, for financial reporting. At a minimum, all recipients must submit a **final** financial report. Final reports are due no later than 120 calendar days after the award period of performance end date or termination date. For awards with periods of performance longer than 12 months, recipients are required to submit **interim** financial reports on the frequency established in the Notice of Award. The only exception to the interim financial reporting requirement is if the recipient is required to use the SF 270/271 to request payment and requests payment at least once annually through the entire award period of performance. We will describe all financial reporting requirements in the Notice of Award.

Performance Reports
Performance reports must contain a comparison of actual accomplishments with the established goals and objectives of the award; a description of reasons why established goals were not met, if appropriate; and any other pertinent information relevant to the project results. Final reports are due no later than 120 calendar days after the award period of performance end date or termination date. For awards with periods of performance longer than 12 months, recipients are required to submit **interim** financial reports on the frequency established in the Notice of Award.

Significant Development Reports
Events may occur between the scheduled performance reporting dates which have significant impact upon the supported activity. In such cases, recipients are required to notify the Bureau in writing as soon as the recipient becomes aware of any problems, delays, or adverse conditions that will materially impair the ability to meet the objective of the Federal award. This disclosure must include a statement of any corrective action(s) taken or contemplated, and any assistance needed to resolve the situation. The recipient should also notify BLM in writing of any

favorable developments that enable meeting time schedules and objectives sooner or at less cost than anticipated or producing more or different beneficial results than originally planned.

Real Property Reports
Recipients and subrecipients are required to submit status reports on the status of real property acquired under the award in which the Federal government retains an interest. The required frequency of these reports will depend on the anticipated length of the Federal interest period. The Bureau will include recipient-specific real property reporting requirements, including the required data elements, reporting frequency, and report due dates, in the Notice of Award when applicable.

Conflict of Interest Disclosures
Recipients must notify the Grants Management Officer immediately in writing of any conflict of interest that arise during the life of their Federal award, including those reported to them by any subrecipient under the award. Recipients must notify the program in writing if any employees, including subrecipient and contractor personnel, are related to, married to, or have a close personal relationship with any Federal employee in the Federal funding program or who otherwise may have been involved in the review and selection of the award. The term employee means any individual engaged in the performance of work pursuant to the Federal award. Recipients may not have a former Federal employee as a key project official, or in any other substantial role related to their award, whose participation put them out of compliance with the legal authorities addressing post-Government employment restrictions. See the U.S. Office of Government Ethics websitefor more information on these restrictions. BLM will examine each conflict of interest disclosure based on its particular facts and the nature of the project and will determine if a significant potential conflict exists. If it does, BLM will work with the recipient to determine an appropriate resolution. Failure to disclose and resolve conflicts of interest in a manner that satisfies the BLM may result in any of the remedies described in 2 CFR 200.339 Remedies for Noncompliance, including termination of the award.

Other Mandatory Disclosures
The Non-Federal entity or applicant for a Federal award must disclose, in a timely manner, in writing to the Federal awarding agency or pass-through entity all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award. Non-Federal entities that receive a Federal award including the terms and conditions outlined in 2 CFR 200, Appendix XII—Award Term and Condition for Recipient Integrity and Performance Matters are required to report certain civil, criminal, or administrative proceedings to SAM. Failure to make required disclosures can result in any of the remedies described in 2 CFR 200.339 Remedies for Noncompliance, including suspension or debarment.

Reporting Matters Related to Recipient Integrity and Performance
If the total value of your currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds $10,000,000 for any period of time during the period of performance of this Federal award, then you as the recipient during that period of time must maintain the currency of information reported to the System for Award Management (SAM) that is made available in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System (FAPIIS)) about civil, criminal, or administrative proceedings in accordance with Appendix XII to 2 CFR 200.

G. Federal Awarding Agency Contact(s)

G1. Program Technical Contact

For **programmatic technical assistance**, contact:

Administrative questions:
Becky Jenison, Program Analyst
Phone: 208-387-5958
Email: bjenison@blm.gov

Task statement questions:
Ed Brunson, Program Manager
Phone: 208-387-5975
Email: ebrunson@blm.gov

G2. Grants Management Officer Contact

For **Grants Management Officer assistance,** contact:

First and Last Name: Patricia Glass

Telephone: 801-539-4194

Email: pglass@blm.gov

G3. Application System Technical Support

For **https://www.firescience.gov technical questions contact:**
Becky Jenison, Program Analyst
Phone: 208-387-5958
Email: bjenison@blm.gov

H. Other Information

Payments:
Domestic recipients are required to register in and receive payment through the U.S. Treasury's Automated Standard Application for Payments (ASAP), unless approved for a waiver by the BLM program. Foreign recipients receiving funds to a final destination bank outside the U.S. are required to receive payment through the U.S. Treasury's International Treasury Services (ITS) System. Foreign recipients receiving funds to a final destination bank in the U.S. are required to enter and maintain current banking details in their SAM.gov entity profile and receive payment through the Automated Clearing House network by electronic funds transfer (EFT). The Bureau will include recipient-specific instructions on how to request payment, including identification of any additional information required and where to submit payment requests, as applicable, in all Notices of Award.

DEFINITIONS:

Agreements Contact: Person from institution receiving funds from JFSP that is responsible for facilitating the receipt of funds and the execution of any agreements necessary for a proposal if it is selected for funding. If a federal agency is requesting funds the Agreements contact must be from the federal cooperating agency.

Budget Contact: Budget contact must be from the institution receiving funds from JFSP. This person is responsible for ensuring the budget details are correct prior to proposal being submitted and agrees to receive funds and facilitate the transfer of funds, if necessary. If a federal agency is requesting funds the Budget contact must be from the federal cooperating agency.

Collaborator/Contributor: An individual that advises investigators, but is not involved at a level expected of a Co-Principal Investigator. For example, a collaborator may make recommendations on how best to involve fire and fuels managers in a project or consult regarding the statistical design of a study. Individuals that serve as an author or co-author of a manuscript for a scientific journal are normally a Co-Principal Investigator.

Co-Principal Investigator (Co-PI): The individual(s) identified in a proposal who will work with the research lead on the project and makes a substantial contribution to the project. Co-PIs are responsible for communicating and coordinating with the PI.

Funding Cooperator: The funding cooperator receives funds from JFSP and is responsible for distributing funds to other cooperators. A funding cooperator is only required if the PI is non-federal and a federal institution is requesting funding, if the work is being completed through a private business, or includes international funding. The funding cooperator is responsible for coordinating with the PI, the Agreements contact, and the Budget contact on administrative activities for this project and must concur with the proposed budget. The funding cooperator is one of the primary contacts for the project and should stay informed and involved in project activities. If a federal agency is requesting funds the funding cooperator must be from the federal cooperating agency.

Notice of Funding Opportunity (NOFO): The official label for the Joint Fire Science Program method of requesting project proposals. The NOFO includes task statements for which proposals are sought, instructions for proposal submission, and related information.

Indirect Costs: Those costs used to pay for overhead/administrative costs attributable to a specific research project. Examples include the costs of operations and maintenance such as janitorial, phone, and clerical services.

Joint Fire Science Program Governing Board: An appointed 12-person Board representing the JFSP partnering agencies. The Board provides strategic direction and oversight to JFSP, identifies important research questions, and, in coordination with the Program Office, selects proposals for funding.

Principal Investigator (PI): The individual identified in a proposal who is the research lead for the project. This individual is responsible for coordinating all research related activities and will be the primary science contact for the project. In addition, the PI is responsible for communicating and coordinating with Co-PIs and others on the research team. The PI is

responsible to JFSP for completion of the project as determined by submission of all required deliverables.

Science Exchange, Application, and End User Engagement: The exchange of information, materials, models and other research findings to end users, along with adequate information and training to apply the science. Examples of active methods include workshops, training sessions, guided field tours, conferences, meetings, and symposia. Examples of passive methods include published papers and websites. A combination of active and passive methods is encouraged. Collaboration with the JFSP Fire Exchange Network is recommended https://www.firescience.gov/JFSP_exchanges.cfm.

Student Investigator (relevant to the GRIN announcement only): A current student with an approved dissertation or thesis plan responsible for leading and delivering the research proposed in a GRIN proposal.

Task Statement: A specific area of interest identified in the NOFO, for which project applications are sought.

Synopsis

FA-NOFO0023-002

General Information

Summary

Opportunity Category
D (Discretionary)

Opportunity Category Explanation

CFDA
15.232

Funding Instrument Type
CA - Cooperative Agreement

Funding Activity Category
Joint Fire Science Program

Funding Activity Category Explanation

Award Information

Cost Sharing / Matching Requirement
No

Percentage of Cost Sharing / Matching Requirement

Expected Number of Awards 10 to 35

Estimated Total Program Funding 1,500,000 to $6,000,000

Estimated Award Ceiling $300,000 to $500,000

Estimated Award Floor

Project Period | Expected Duration in Months
Agreement terms for funded projects are estimated to range between one and three years, depending on the negotiated project proposal.

Key Dates

Estimated Post Date October 20, 2022

Application Due Date December 20, 2022

Application Due Date Explanation
Electronically submitted applications must be submitted no later than 5:00 p.m., MT, on the listed application due dates

Estimated Award Date The JFSP anticipates a late August to mid-September start date for awards

Eligibility Information

Eligibility Category

00 – State governments
01 – County governments
02 – City or township governments
04 – Special district governments
05 – Independent school districts
06 – Public and State controlled institutions of higher education
07 – Native American tribal governments (Federally recognized)
08 – Public housing authorities/Indian housing authorities
11 – Native American tribal organizations (other than Federally recognized tribal governments)
12 – Nonprofits having a 501(c)(3) status with the IRS, other than institutions of higher education
13 – Nonprofits without 501(c)(3) status with the IRS, other than institutions of higher education
20 – Private institutions of higher education

Additional Information on Eligibility (Grants.gov 4,000/GMM 2,500 character limit)
Individuals and for-profit organizations are ineligible to apply for awards under this NOFO.

Additional Information

Description (Grants.gov/Forecast) (18,000 character limit)

Task Statement I - Longevity of fuel treatment effectiveness under climate change

Objectives
The objectives of this task statement are to (1) understand patterns of fuel accumulation, vegetation change, and potential fire behavior following fuel treatments over time and (2) inform the frequency and type of treatments needed to maintain treatment effectiveness.

Background
It is understood that because of vegetation recruitment and growth and resultant fuel accumulation, fuel treatments have a limited lifespan in terms of their ability to reduce the extent, intensity, or severity of wildfire under the conditions for which they are designed to be effective (e.g., 97th percentile weather). As a result, initial fuel treatments must be maintained over time with subsequent treatments. Maintenance schedules have often been informed by knowledge of historical fire regimes or available monitoring data. However, as the rate of vegetation and fuel change and fire risk is altered by factors such as warming climate, changing precipitation patterns, and spread of invasive species, historical or baseline conditions may not be appropriate benchmarks for maintenance schedules. Instead, fuel treatment maintenance should be informed by data on the accumulation of different fuel types (e.g., surface fuels, shrub cover, tree regeneration) over time and their relationship to potential fire behavior and effects. In many cases, however, the rate of fuel accumulation and its relationship to effectiveness, and therefore the initial treatment's lifespan, are unknown.

Numerous short-term and some long-term studies have documented the effects of different fuel treatments on vegetation, fuels, and potential fire behavior and these data have been incorporated into models used to predict long-term effects of fuel treatments. Still, many factors, such as tree and shrub regeneration and recruitment, grass/forb

production, and surface fuel accumulation/decomposition remain poorly represented by long-term empirical studies, even though these factors have significant impacts on the longevity of fuel treatment effectiveness. Other factors such as site productivity, disturbance history, and changing climate, are likely to influence vegetation and fuel accumulation patterns, but the impacts of these and other factors are not well understood.

Fuel treatments often incorporate additional objectives to create or maintain desired ecological conditions or processes (e.g., vegetation composition, wildlife habitat, drought resilience). Studies on the short-term response of ecological attributes, such as vegetation, soils, and wildlife, to fuel treatments are common and well-documented, but long-term studies are lacking. In addition, maintenance treatments, which often differ from the initial treatment (e.g., initial thinning with prescribed fire maintenance), may result in different ecological outcomes than what is observed in the short-term after an initial treatment. Yet, the long-term effects of maintenance treatments on different ecological attributes have received little study.

Research Needs

Research proposals are sought that re-measure existing long-term field studies to gain a deeper understanding of the patterns of fuel accumulation, vegetation change, and potential fire behavior following fuel treatments and the implications for potential fire behavior and other ecological attributes or processes.

Specific research needs include:

4. Improved understanding of vegetation change and fuel accumulation for different fuel types (e.g., grasses, tree seedlings, shrubs, canopy fuels) following fuel treatments and how rates of change vary with site characteristics (e.g., productivity, disturbance history), fuel treatment characteristics (e.g., type, season, frequency), and climate regimes.
5. Improved understanding of the longevity of fuel treatment effectiveness and long-term maintenance needs from the perspective of change over time in potential fire behavior (e.g., flame lengths, rate of spread) and other ecological attributes that are incorporated into fuel treatment objectives.
6. Incorporation of additional collected data into existing models and decision support tools that predict ecosystem change over time under different climate change scenarios and use of such models to project trends in fuel treatment effectiveness in the future.

Proposals must address the first two research needs. Addressing the third research need is optional.

Proposals must clearly describe in the Methods section the extent, format, and quality of the available pre-existing data, as well as describe the sampling design under which these data were collected. Pre-existing data should provide the appropriate baseline information necessary to address the above research needs. Proposals will be considered only if the experimental design, measurement methodology, data, and results for the prior

measurement(s) have been published as a scientific manuscript or documented to an equivalent extent and are appropriate to address the research needs above.

For the purpose of this task statement, a fuel treatment may include any of all of the following: mechanical treatment (e.g., thinning, mastication), biological treatment (e.g., grazing, seeding), chemical treatment (e.g., herbicide), fuel break, and prescribed fire. A long-term study is defined as greater than 10 years after initial fuel treatment. Depending on the vegetation type and region, one or more maintenance treatments may have occurred during this timeframe. Wildfire occurrence within the area under study may be evaluated as a maintenance treatment provided its severity stayed within prescription for a comparable prescribed burn for the area.

Task Statement II - Fuels treatment effectiveness across landscapes

Objective

The objective of this task statement is to inform planning and implementation of landscape fuel treatment strategies that allow for safe and effective management of wildfire to meet protection and resource management objectives.

Background

Past studies on effectiveness of fuels treatment have largely focused on detecting changes in fire behavior or effects within the footprint of a treated area impacted by wildfire. From this work, we know that fuels treatments can be effective in meeting multiple fire and resource management objectives. Yet managers also recognize that it is neither appropriate nor possible to treat all areas that could be subject to wildfires. More recent studies focused on landscape scales have found that amount of area treated, treatment size, configuration, and strategic location are important factors influencing subsequent wildfire intensity and severity patterns and spotting distances. Case studies have shown that the change in fire behavior in wildfires as they encounter fuel treatments can lead to more effective wildfire response. However, a synthesis of such studies concluded that research on effectiveness of landscape fuel treatment strategies is still in its infancy (Jain et al. 2021). Additional studies are needed on how multiple characteristics of landscape fuel treatment strategies (e.g., treatment configuration, placement, interaction with topography, size distribution) drive wildfire outcomes both alone and in combination with wildfire suppression operations.

The Joint Fire Science Program (JFSP) is soliciting proposals for research that evaluate the effectiveness of landscape fuel treatment strategies. Studies are needed to determine how different characteristics of landscape fuel treatment strategies (e.g., size distribution, configuration, percentage area treated, saturation, incorporation of unplanned ignitions) can affect subsequent wildfire behavior or effects and the conditions (e.g., fire weather, topography) under which such strategies are effective. If strategic landscape placement of fuel treatments can mitigate wildfire behavior, it should provide opportunities for effective fire suppression strategies that minimize costs and threats to values at risk while maximizing firefighter safety and the ecological benefits of wildfire. However, additional studies are needed to evaluate and develop metrics for how landscape fuel treatment strategies may enable firefighters to safely meet multiple resource management and protection objectives.

Research questions

4. How do the characteristics of landscape fuel treatment strategies (e.g., area treated, configuration) influence patterns of intensity, spotting, rate of spread, or severity for subsequent wildfires?
5. How does the answer to the question above vary with climatic variables (e.g., fire danger rating), treatment variables (e.g., treatment types, ages), or environmental conditions (e.g., terrain, fuel type)?
6. What landscape fuels treatment strategies best enable effective wildfire response strategies? What metrics can be used to gauge the effectiveness of landscape fuel treatment strategies for use in wildfire suppression operations?

Submitted proposals must directly address the first research question and either research question 2 or 3 above. Addressing all three questions is optional. For the purpose of this task statement, a landscape fuel treatment strategy is defined as a series of fuel treatments across a landscape, implemented over time and designed to limit wildfire extent or severity. A fuel treatment can include any of the following: mechanical treatment (e.g., thinning, mastication), biological treatment (e.g., grazing, seeding), chemical treatment (e.g., herbicide), prescribed fire, and wildfire use for resource benefit. To evaluate landscape fuel treatment strategies, studies must consider subsequent wildfire outcomes both within and outside the footprint of treated areas. It is expected that investigators will use field-based studies, interviews, modeling, or a combination thereof to address the research questions.

Jain, T.B., I. Abrahamson, N. Anderson, S. Hood, B. Hanberry, F. Kilkenny, S. McKinney, J. Ott, A, Urza, J. Chambers, M. Battaglia, J.M. Varner, and J.J. O'Brien. 2021. Effectiveness of fuel treatments at the landscape scale: State of understanding and key research gaps. JFSP Final Report 19-S-01-2.

Task Statement III - Pre-fire management actions for reducing post-fire hazards

Objective

The objective of this task statement is to gain better understanding of the factors that lead to successful cross-jurisdictional pre-fire planning aimed at reducing the potential for post-fire hazards, through synthesis and evaluation of existing tools and investigations of enabling conditions that foster successful cross-jurisdictional planning and action.

Background

Wildfires across the U.S. frequently diverge from what many consider beneficial, resulting in burns that create diverse and long-term impacts to human and natural communities. Resulting post-fire hazards—flooding, erosion, debris flows, invasive species incursion, vegetation type conversion, and loss of watershed function—can last for decades (or longer) and have profound direct and indirect impacts on communities both within and outside the original fire boundary. For example, fire-induced flooding and debris flows can damage or destroy structures and public infrastructure and impair the quality of municipal water supplies. Spread of invasive species or other vegetation

type conversion facilitated by wildfire can impact multiple ecosystem services, including rangeland health and critical species habitat.

Many management actions are taken after a wildfire occurs to mitigate post-fire hazards, with often limited success. Planned management actions taken long before a wildfire occurs can also reduce the risk that post-fire hazards can pose for ecosystems, communities, or ecosystem services on which communities rely. Management actions like thinning, prescribed fire, seeding, and use of wildfire for resource benefit have been shown to be effective in this regard. For example, understory thinning and frequent low intensity prescribed fire in forested systems can deter severe wildfire and the associated the negative impacts on water quality in downstream water bodies. Resources devoted to early detection and eradication of invasive species may prevent populations from expanding in the event of a wildfire and altering ecosystem processes. To that end, many have called for a greater focus on actions taken before a wildfire occurs to reduce post-fire hazards and to collaboratively plan such action across jurisdictions impacted by post-fire hazards (e.g., land management agencies, water utilities, communities).

To inform pre-fire management actions to best reduce post-fire hazards, many have developed methodologies to map areas with coupled high risk of wildfire and potential negative post-fire effects to valued resources both within and outside wildfire boundaries. For example, some have used historical ranges of fire severity to estimate debris-flow potential. Others have combined output from fire behavior models with flooding and debris-flow models. For rangeland systems, investigators have developed maps of wildfire and invasive species risk to inform pre-fire management priorities and proposed methodologies for incorporating hydrologic data in such assessments. While many mapping methodologies have been developed that characterize coupled potential wildfire risk and post-fire impacts, it is unclear the degree to which these incorporate multiple post-fire hazards, are applicable across the diverse conditions in various jurisdictions (e.g., wildland vs. urban interface), have been utilized to inform pre-fire management actions, and can facilitate cross jurisdictional planning and collaboration. An important first step is to synthesize and evaluate the slate of existing tools and methodologies that can be used to assess the potential for wildfire and post-fire hazards. In addition, there is a need for broader understanding of the factors that facilitate cross-jurisdictional planning and implementation of management actions that proactively reduce potential post-fire hazards before wildfire occurs.

<u>Research needs:</u>

3. Synthesis and evaluation of available tools and methodologies that assess both wildfire risk and potential post-fire impacts, including the strengths and weaknesses of different approaches, how they incorporate multiple post-fire hazards, their applicability to multiple jurisdictions, and how they are utilized in pre-fire planning efforts.
4. Greater understanding of the enabling conditions that lead to cross-jurisdictional planning and implementation of management approaches aimed to proactively reduce post-fire hazards before wildfire occurs, including but not limited to, the

characteristics of communities, availability of resources, or history with wildfire and post-fire hazards.

Proposers must address at least one of the research needs above to be responsive to the task statement. Addressing both research needs is optional. It is expected that investigators will use literature searches, case studies, surveys, interviews, or a combination thereof to address these research questions. The focus of syntheses and evaluations of available tools can include those applicable to a particular ecosystem type, region, or nationally.

Task Statement IV - Social and political factors that influence fire suppression and rehabilitation costs

Objective

The objective of this task statement is to evaluate understudied factors that influence costs associated with wildfire suppression and immediate post-fire rehabilitation to inform cost models and performance metrics for efficient use of fire suppression and rehabilitation resources.

Background

Federal and state agencies collectively spend billions of dollars annually on fire suppression and immediate post-fire rehabilitation and these costs have been steadily increasing over the last two decades. Increases in such costs may be inevitable as more suppression and rehabilitation resources are needed to respond to increasing wildfire acreage and threats to life, property, and other valued resources. Increasing costs also present significant strains on fire management agency budgets and likely correlate with increased exposure of firefighting personnel to dangerous conditions in the fire environment. It is often unknown if increased investment in suppression or rehabilitation resources and the associated risk to firefighting personnel is well justified in terms of increasing the likelihood of meeting incident objectives. A better understanding of the drivers of fire suppression and post-fire rehabilitation resource use and associated costs is needed to develop improved expenditure models and performance metrics to inform cost effective fire management strategies.

It is well established that fire suppression costs are correlated with fire size, fire intensity, fuel type, and proximity to the wildland urban interface and such factors are incorporated in existing expenditure models. However, these factors alone likely do not explain much of the variation in fire suppression costs seen across years, regions, and wildfires. Few studies have evaluated the role of socio-political or institutional factors in driving suppression costs. For example, newspaper coverage and political pressure are among the important factors. The influence of additional factors, such as resource availability, demographics and other characteristics of threatened communities, presence of threatened and endangered species habitat, has received little study. Decision support tools and resources designed to inform incident management decisions, such as Risk Management Assistance and the Wildland Fire Decision Support System, may lead to more cost-effective use of suppression resources. Such tools or resources, however, have not been

evaluated in this context. In addition, costs associated with post-fire rehabilitation are expected to increase with area burned, proximity to values-at-risk from post-fire erosion and flooding (e.g., roads, municipal watersheds), and natural resource value of the burned area (e.g., timber resources). Yet, no systematic study has evaluated these or other factors in relation to post-fire rehabilitation costs.

Research Needs

4. Empirical studies that evaluate how social, political, or institutional factors influence fire suppression resource use and associated costs. Studied factors should include those not currently incorporated in fire suppression expenditure models and may include, but are not limited to, expectations of management partners, community characteristics, manager experience, risk tolerances, or resource availability.
5. Empirical studies that document drivers in post-fire rehabilitation costs. Examples of driving factors may include, but are not limited to, proximity to values-at-risk, resource value of the burned area, or expectations of management partners.
6. Studies that utilize collected or existing data characterizing important social and political factors to improve fire suppression or post-fire rehabilitation expenditure models or performance metrics for cost-effective fire management strategies.

Proposers must address at least one of the research needs above to be considered responsive to this task statement. Addressing more than one research need is optional.

For the purpose of this task statement, costs associated with post-fire response are those incurred through programs such as the U.S. Forest Service Burned Area Emergency Response and the U.S. Department of the Interior Emergency Stabilization and Burned Area Rehabilitation programs to address immediate and near-term (out to five years) impacts of wildfire and wildfire suppression actions.

Awarding Officer Contact Name: Patricia Glass

Awarding Officer Contact Phone: 801-539-4194

Awarding Officer Email Address: pglass@blm.gov

Awarding Officer Email Description

Link to Additional Information