

Announcement for Proposals, 2007-1

Joint Fire Science Program

United States Department of the Interior

**Bureau of Indian Affairs
Bureau of Land Management
Fish and Wildlife Service
Geological Survey
National Park Service**

United States Department of Agriculture

Forest Service

Opens October 13, 2006

Closes December 13, 2006

NOTE TO PROPOSERS:

**There are significant changes in requirements for proposals.
Please read the AFP carefully.**

There are six task statements within three areas of interest in this Announcement for Proposals.

Areas of interest include:

1. Rapid Response
2. Managers Request
3. Fire in the Wildland Urban Interface

A. Program Description

The Joint Fire Science Program (JFSP) is a partnership of six federal wildland management and research agencies with a need to address problems associated with managing accumulating wildland fuels, fire regimes, and fire-impacted ecosystems. The partner agencies include the USDA Forest Service and five bureaus in the Department of the Interior (Bureau of Indian Affairs, Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and the U.S. Geological Survey). For the purpose of this Announcement for Proposals (AFP), "wildland fuels" are considered to be living and dead plant material associated with forests, woodlands, shrublands, grasslands, wetlands, and riparian areas.

Wildland fuels have been accumulating during at least the past half-century due to wildland fire management policies, wildland management practices, and other factors. As demonstrated in recent years, the additional fuels contribute to intense fire behavior and increase the resistance of fires to control. Consequently, property and natural resources have been destroyed, costs of fire management have escalated, fire dependent ecosystems have deteriorated, and the risks to human life and property continue to escalate.

Congress, agency administrators, JFSP partners, and others have recognized that the accumulation of wildland fuels must be reduced in order to reduce the human threat from fire and maintain natural resource values. Congress directed the Department of the Interior and the USDA Forest Service to develop a Joint Fire Science Plan to provide science-based support to land management agencies as they address this need. The JFSP was established with the 1998 Appropriation for Interior and Related Agencies to help ensure that cooperating federal land management agencies expedite scientifically sound, efficient, systematic, and effective solutions and monitoring programs that cross agency jurisdictions and fuel types.

The 1998 Joint Fire Science Plan addressed four issues critical to the success of the fuels management and fire use programs. These included wildland fuels inventory and mapping, evaluation of fuels treatments, scheduling of fuels treatments, and monitoring and evaluation. Congress included additional direction in the 2001 Appropriation for Interior and Related Agencies on issues such as protocols for evaluating post fire stabilization and rehabilitation projects, aircraft based remote sensing, and regional/local issues.

For further background on the goals of the JFSP, those considering submitting proposals and other interested parties are encouraged to review the Joint Fire Science Plan, which is available via the Internet at: <http://jfsp.nifc.gov>. The JFSP has issued AFPs every year since 1998 and has selected and funded more than 300 projects. Previous AFPs and lists of funded projects can be found on the program Web site. Historically, approximately 15-25% of submitted proposals have received funding.

The Governing Board does not fund projects that are or should be internally funded 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.

The JFSP encourages proposals from all interested parties. However, because the focus of the JFSP is on wildland fire and fuels issues on federal wildlands, evidence of direct involvement by federal scientists or land managers in the development of proposals must be included in all proposals. **Proposals that do not have evidence of direct involvement by federal land managers or scientists will not be considered for funding.**

Examples of direct involvement by land managers or scientists include participation as a principal investigator (PI), cooperator, or collaborator; letters of commitment and support; or

written evidence from a manager that the proposal is responding to an urgent fire or fuels problem related to the land manager's unit. In addition we encourage letters of commitment and support from organizations such as the National Association of State Foresters, Western Forestry Leadership Coalition, National Association of Conservation Districts and additional non-governmental stakeholder organizations or professional societies.

B. Proposal Submission

The JFSP program office must receive the complete proposal package (including all items in the checklist in Section F) by close of business (5:00 pm Mountain Standard Time) December 13, 2006. There will be no exceptions to this closing date.

Please note:

- **Incomplete proposals will not be considered.**
- **Faxed or e-mailed proposals will not be accepted.**
- **Proposals longer than 12 pages (excluding Budget Detail, Curriculum Vitae, Salary Justification and Letters of Support) will not be accepted (see Section E, Format for Proposals).**

All proposals must include the following items to be considered.

1. One original and **five** stapled unbound copies of complete proposal packet including all material.
2. An electronic version on a compact disk (in MS Word or editable pdf format) must be included. Proposals must be submitted without MSWord "Track Changes" artifacts.
3. Signature and complete address including phone number, mailing address, surface mail address (if different than mail address) and e-mail address of principal investigator, federal cooperator, and Federal Fiscal Representative (see definition Section H).
4. Letters of support are not required but are considered in the peer review process. However, all letters of support must be included with the hard copy proposal package and received by the due date. Each letter must clearly state the title of the project and the principal investigator of the proposed work.

Proposals must clearly state the primary task statement being addressed. The proposal will be reviewed and its merits judged in the context of this one task statement. Proposals may mention other task statements that relate to proposed work, but these ancillary task statements will not form the basis on which the proposal will be reviewed.

Questions and proposals should be directed to:

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Joint Fire Science Program
National Interagency Fire Center
3833 S. Development Ave.
Boise ID 83705
phone (208) 387-5958
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C. Areas of Interest

There are three areas of interest in this Announcement for Proposals, each with two Task Statements:

- Rapid Response
- Managers Request
- Fire in the Wildland Urban Interface

Note: The Governing Board anticipates that these projects can be accomplished within three years or less. The Governing Board does not anticipate funding projects that are or should be internally funded from existing accounts (such as routine agency monitoring, development of fire management plans or NEPA compliance) or operational portions (such as the installation of fuels treatments) or other similar projects.

Proposals submitted should clearly state which Task Statement is being addressed such as **Rapid Response Task 1: Future Wildland Fires AFP 2007 - 1 - 1**.

Rapid Response

The two Task Statements for this area are:

- Rapid response projects for future wildland fires (wildfires and wildland fire use fires);
- Rapid response projects for past (2006) wildland fires (wildfires and wildland fire use fires).

Rapid Response Task 1: Future Wildland Fires AFP 2007 – 1 – 1

Background

Certain types of information or data that are essential to our understanding of wildland fire can only be obtained during or immediately after a fire. For example, estimates of flame length or fire spread are more precise and reliable if measured *in situ* rather than inferred from general documentation, poorly validated models, or indirect methods such as stem char heights.

Similarly, certain impacts such as water-borne erosion, sedimentation, and changes in stream chemistry occur within days to weeks after a fire.

These situations have in common the need for a rapid, well organized, and pre-planned response from the science community. In the past, this type of work has often been hampered by lack of funding and by lack of adequate pre-incident planning. To meet this need, the Governing Board envisions the development of rapid deployment teams of research scientists and technical specialists that can mobilize quickly to investigate and document various aspects of fire behavior or fire effects on uncontrolled wildland fire incidents.

Proposals are sought to obtain, document, and evaluate critical, time-sensitive information or data during or immediately following future wildland fire incidents (wildfires and wildland fire use fires). Proposals should respond to one or more of the following needs:

- **Validate or extend the capabilities of wildland fire and fuels models.**
- **Validate smoke production and transport models and/or predict the impacts of wildland fire-generated smoke.**
- **Evaluate the effects, effectiveness, and costs of post-fire restoration and/or rehabilitation methods, processes and tools.**
- **Address wildland urban interface issues.**
- **Evaluate the effects of previous land management activities or natural disturbances (such as post-fire logging, other mechanical treatments and/or prescribed burning that removed biomass, wildfire, insect or disease infestations, ice damage, and blow-down) on fire behavior, fire severity, and/or fire effects.**

General guidelines

- Proposals must clearly describe data needs, research objectives and experimental design, and must identify the types of fire incidents and site conditions required to complete the work.

- Proposals must identify clear criteria for selection of fire incidents and study sites that reflect the needs of the particular study.
- Proposals addressing resource effects should also include provisions in the study design to take maximum advantage of sites where pre-fire data is available to evaluate the effects of previous land management activities (such as mechanical treatment and/or prescribed burning that removed biomass) on fire behavior, fire severity, and/or fire effects. **Proposals to evaluate the effects of previous land management activities on fire behavior, fire severity, and/or fire effects are of particular interest to the Board.**
- **Proposals must clearly demonstrate the need to evaluate the information or data during or immediately following future wildland fire incidents.**
- Response teams must meet the requirements described in Section D – Special Requirements

Rapid Response Task 2: Past (2006) Wildland Fires

AFP 2007 – 1 – 2

Background

This task reflects the urgent need to gather, evaluate, and validate information and data garnered from 2006 wildland fires. Clearly, having information on pre-fire conditions would strengthen proposed investigations. The Board is particularly interested in proposals that focus on 2006 fires that burned over experimental sites and other areas where extensive pre-fire data are available on fuel treatments, pre-fire stand structure, fuel characteristics or other resource attributes.

Proposals for sites where reliable fire behavior observations exist are strongly encouraged. Such sites can provide unique opportunities for post-fire studies to evaluate the effects of pre-fire condition on fire behavior, fire severity, ecosystem impacts or other resource impacts.

Effects to be studied may be physical, biological, social, cultural, or economic. Proposals should not develop new techniques but should focus on previously developed measurement tools. Proposals that build on previous assessments in communities affected by wildfire are encouraged.

Proposals are sought for fires that occurred during the 2006 fire season that:

- **Validate or extend the capabilities of wildland fire and fuels models through retrospective investigations.**
- **Evaluate the effects, effectiveness, and costs of post-fire restoration and/or rehabilitation methods, processes and tools.**
- **Evaluate the effects of previous land management activities or natural disturbances (such as post-fire logging, other mechanical treatments and/or prescribed burning that removed biomass, wildfire, insect or disease infestations, ice damage, and wind damage) on fire behavior, fire severity, and/or fire effects.**
- **Evaluate the physical, biological, social, cultural, or economic effects of wildland fires (wildfires and wildland fire use fires).**
- **Address wildland urban interface issues.**

General guidelines

- Proposals must clearly articulate compelling reasons for rapid response research and describe the opportunity presented by the fire, previous treatments, and pre-existing data.
- Proposals must document the extent and quality of pre-fire data, describe pre-fire experimental design or sampling design, and describe pre-fire treatments

- Proposals must describe pre-fire vegetation composition and structure.

Managers Request

The two Task Statements for this area are:

- Reestablishment of native vegetation after fires on arid lands;
- Fire and deep organic soils

Note: Managers Requests focus on problems at the regional landscape level rather than on local landscapes, and have been identified as priority information needs by senior management at the State, Regional, or National levels.

Managers Request Task 3: Reestablishment of native vegetation after fires on arid lands

AFP 2007 – 1 – 3

Background

Over the last 150 years, there have been profound ecosystem changes within the Great Basin and other arid lands with the invasion of cheatgrass, red brome, and woodland species such as pinyon pine and western juniper.

In 2005, over two million acres were burned in these ecosystems and restoration of these areas is a major concern for resource managers. Over \$19 million is spent annually for post-fire rehabilitation and restoration activities, yet rehabilitation and restoration success is often not satisfactory.

Proposals are sought for projects to investigate survival and establishment rates plus methodology and techniques to reestablish sagebrush, bunch grasses, and other native vegetation in arid lands in the interior western United States such as the Great Basin, Mojave and Sonoran Deserts. Proposals are sought for projects to develop, test, validate, and demonstrate cost effective methods to reestablish native vegetation in these arid lands.

General guidelines

- This task is focused on reestablishing native vegetation as part of post-fire recovery efforts, but does not require a rapid response effort immediately after a fire is controlled.
- Successful proposals will examine options and methods to restore these ecosystems and will consider the influences of burn severity, competition from non-native species, active livestock management and other factors.
- Climatic conditions and variability should be well documented to assist managers in implementing successful restoration activities.
- Successful proposals will focus on delivering and demonstrating clear, concise, how-to restoration information that managers can use and implement across the Great Basin and adjacent arid lands. Management implications will be thoroughly addressed including any policy concerns, and implementation costs.
- Successful proposals must reflect true management-scientist partnerships. For example, managers could oversee project implementation, advise scientists, or participate directly in project research.

Managers Request Task 4: Fire and Deep Organic Soils

AFP 2007 – 1 – 4

Background

Federal and state agencies manage lands dominated by woody and herbaceous plants that occur on deep organic soils found in ecosystems such as wetlands, black spruce forests, and peat bogs. These deep organic soils form in settings where restricted drainage inhibits the decomposition of plant and animal remains, allowing organic materials to accumulate over time. As a result, deep organic soils are ecologically important because of the large quantities of carbon they contain. These soils present unique and complex challenges to fire and fuels managers.

Proposals are sought to examine fire behavior and effects in deep organic soils. They should address questions such as:

- **What fuel and climatic conditions are associated with transitions among varied combustion stages, i.e. from ignition, smoldering, flaming, back to smoldering and finally to extinction? What are practical means that managers can use to monitor and predict when these transitions will take place?**
- **How are key fire characteristics, such as burn duration, depth of burn, fuel consumption, and smoke composition (chemical and physical properties) associated with varied combustion stages?**
- **What are the ecological effects (such as plant and animal responses and carbon cycling) of fire in deep organic soils?**

General guidelines

- Successful proposals must reflect true management-scientist partnerships. For example, managers could oversee project implementation, advise scientists, or participate directly in project research.
- Proposals should thoroughly address policy concerns, management implications, and costs to implement research findings.
- Successful proposals will outline plans for delivering clear, concise information that managers can implement. Proposals should specify staffing needs, such as technology transfer specialists, to ensure effective science delivery.
- Proposals may focus on developing new knowledge, synthesizing existing knowledge, or validating existing research and field trials

Fire in the Wildland Urban Interface

The two Task Statements for this area are:

- Wildland urban interface fire behavior models
- Social, cultural, economic, and aesthetic issues and tradeoffs

Fire in the Wildland Urban Interface Task 5: Fire Behavior Models

AFP 2007 – 1-5

Background

To most Americans, loss of homes and other structures caused by wildfires within the wildland urban interface is a constant reoccurring image of each fire season. Several wildland fire behavior models predict rate of spread and other changes in behavior, such as spotting, flame length and crown fire initiation. Other models predict behavior of structural fires. The integration of these two types of models is still in its infancy. Housing developments and commercial buildings across landscapes can substantially complicate predictions of fire behavior

and damages. It is critical to be able to improve our capabilities to predict the interactions between wildland and structural fire, including the impacts of domestic landscaping, design and placement of structures, local wind fields, and fire weather.

Proposals are sought to develop or adapt fire behavior models that predict fire behavior in the Wildland Urban Interface (WUI). Specifically, the Governing Board seeks proposals that model fire behavior where wildland fuels merge with human-made structures, such as residential developments surrounded by or adjacent to forests or rangelands.

General guidelines

- Proposals should plan to modify, evaluate, or develop models that would result in an improved ability to predict community or structural vulnerability to wildland fire and support improved standards for community protection from wildfire
- Predictive models should include variables that capture differences in the arrangement and flammability of residential housing and other structures and vegetative fuels.

Fire in the Wildland Urban Interface Task 6: Social, Cultural, Economic, and Aesthetic Issues and Tradeoffs **AFP 2007 – 1-6**

Background

How can individuals and communities prepare, respond, and adapt to or 'live with' wildland fire? For communities and individual residents or businesses, it is particularly important to understand the costs and benefits of potential mitigation actions, including impacts on social and aesthetic values. This task is intended to provide individuals and communities credible science information in a format that individuals can implement or communities can adopt through formal decision processes. This question defines a landscape as more than "fuel" and seeks to offer both individuals and communities options for aesthetic fire prevention adjusted to different climatic conditions and fire regimes.

Proposals are sought to examine and evaluate the social, cultural, economic, and aesthetic issues and tradeoffs of wildland urban interface fuels treatments or other fire hazard reduction or prevention options. Proposals may examine questions such as:

- **Can we create and demonstrate model landscaping around houses and communities that are not merely fire safe, but esthetically pleasing and compatible with community environmental standards?**
- **Can we design practical planning ordinances, codes or decision support tools that could be used by communities to plan for and develop a range of options for fire protection?**
- **What is effective defensible space for various fire regimes?**
- **What are the options and tradeoffs of defending in-place versus evacuation?**

General guidelines

- Proposals may focus on developing new knowledge, synthesizing existing knowledge, or validating existing research and field trials
- A critical component for this task is communication and demonstration of findings and results that can be understood, adopted, and implemented by municipal, county, or regional authorities or individual homeowners.

D. Special Requirements

Rapid Response Special Requirements AFP 2007 – 1 – 1 and AFP 2007 – 1 - 2 Background

The Interagency Standards for Fire and Fire Aviation Operations (Red Book – NFES 2724) serves as the basis for qualifications and training required for field assignments on wildland fire incidents. The Board strongly recommends that all team members meet Firefighter Type 2 training requirements and participate in annual firefighter refresher training. Chapter 6 – Safety, pages 13-15, specifically addresses safety considerations and requirements for non-operational personnel on wildland fire incidents and should be reviewed carefully prior to each field season.

IMPORTANT – Safety Considerations! Please Read Before Submitting Proposals.

Firefighter and public safety is the first priority on all incidents. Proposers responding to this AFP should note that it is their responsibility to ensure those persons visiting, or working within or adjacent to, active wildland fire incidents remain safe at all times. This includes meeting the following standards when conducting research funded by JFSP on uncontrolled incidents:

1. Principal Investigators (PIs) must work closely with Incident Management Teams (IMT). This should include meeting or communicating with Incident Commanders (IC), Fire Use Managers, and Geographic Area Coordinating Groups prior to the fire season to discuss protocols, exchange information, and share areas of concern. All field teams are required to coordinate with the IC or IMT before they enter an active fire zone and must include an individual qualified as single resource crewboss or higher. This person is responsible for fireline oversight and safety of the field team. Depending on the size, composition, and fire experience of the field team, additional overhead or higher qualifications (e.g. Strike Team Leader, Division Supervisors) may be necessary to provide for field crew safety. It is the responsibility of the field team leader to coordinate these needs prior to engagement at the incident. The IMT should *not be expected* to provide additional overhead. The IC or Fire Use Manager must approve all fireline visits before field team engagement.
2. The field team leader and qualified line supervisor will attend daily briefings, and be knowledgeable of weather and fire behavior predictions and daily strategy and tactics. All air operations will be conducted only with specific approval of the responsible Incident Commanders or Fire Use Managers. Field team leaders will establish contact and brief incident personnel assigned, such as Division Group Supervisors, in the area of operations. Field team leaders are responsible for the safety of their teams and shall ensure they have communications with incident personnel at all times and be knowledgeable of emergency procedures described in the incident action plan. All field teams will abide by LCES, the 10 Standard Firefighting Orders, the 18 Situations That Shout Watch Out, the Thirty Mile Hazard Abatement Implementation Plan (as required by agency policy), and any other requirements stipulated by the Incident Commander or Fire Use Manager when in close proximity to an active wildland fire or fire use incident.
3. Field team members will be required to wear approved wildland fire incident personal protective equipment (PPE) including Aramid shirt and pants, helmet with chinstrap, leather gloves, fire shelter, eye and hearing protection, personal first aid kit, water canteen, hand tool, and lace type leather boots with non-slip (Vibram type) soles and minimum 8" top. PPE can often be checked out from cooperating wildland fire offices or purchased from a variety of sources. PPE should be obtained prior to initiating planned work.

4. Field crew members collecting data on or directly adjacent to an active wildland fire or fire use incident will be minimally qualified as a Firefighter (FFT2) or Technical Specialist with a fitness score of “Arduous” on the Work Capacity Test (Pack Test), as demonstrated by walking three miles in 45 minutes or less while carrying a 45 pound backpack. The test is generally available from local fire management offices. Additional information is available on the Internet at http://www.fs.fed.us/fire/safety/wct/wct_index.html. Each field crew member will carry a current “red card”, signed by an agency Fire Management Officer or other fire supervisor. The arduous fitness rating must be clearly indicated on the card.

Note: *The arduous fitness rating is required for Field Observer and Fire Effects Monitor (Wildland and Prescribed Fire Qualification System Guide 310-1). These are the two National Wildfire Coordinating Group (NWCG) recognized positions that most closely resemble the type of work that a field researcher would be doing. “Technical Specialist” is a generic term for which there are no training and qualification standards in 310-1. Information about qualifications and training courses is generally available from local fire management offices.*

5. Other project personnel must coordinate visits with the individual responsible for field team fireline safety (i.e., Single Resource Crewboss) prior to entering active fire zones. Other visiting project personnel will be required to achieve a fitness score of “moderate” on the Work Capacity Test, as demonstrated by walking two miles in 30 minutes or less while carrying a 25-pound backpack. They will carry a current red card, signed by an agency Fire Management Officer or other fire supervisor, indicating that he or she is minimally qualified as a Technical Specialist. The moderate fitness rating must be clearly indicated on the card. The Incident Commander or Fire Use Manager must also agree to accept the moderate rating for occasional visits to the active incident.
6. Personnel who will confine their work to the Incident Base Camp or other areas far removed from the perimeter of the incident are not required to attain a fitness standard. However, a red card indicating Technical Specialist is still recommended.
7. Acceptance of any funding from JFSP under this AFP implies the PI will ensure that field investigations on active fire incidents are conducted according to these terms. ***Due to the hazardous work environment, failure to comply with these fireline safety requirements will result in termination of the project agreement and funding by the Program Office.***

Reference Materials: <http://www.fire.blm.gov/Standards/redbook.htm>
<http://www.fs.fed.us/fire/safety/investigations/30mile/index.html>
<http://www.wildfirelessons.net/>
<http://www.fs.fed.us/fire/safety/lces/lces.html>

E. Format Overview

The proposal should specify rationale, objectives, methodologies, and deliverables in sufficient detail to allow an informed reader to assess the proposal's validity in addressing one of the Task Statements in the AFP. The proposal should also identify criteria by which success of the project can be determined.

The title page, proposal text and accompanying tables and figures, must be limited to 12 (twelve)
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pages (excluding Budget Detail, Curriculum Vitae, Salary Justification and Letters of Support). **Proposals longer than 12 pages will not be accepted.**

Proposals must be submitted in clear text without MSWord “Track Changes” artifacts.

Principal Investigator Curriculum Vitae will be limited to no longer than two pages; Co-PIs and collaborator Curriculum Vitae will be limited to no longer than one page. Proposals must use at least 11-point font. Complete annual and total budgets and a firm timeline for deliverables must be included, as well as a mechanism for technology transfer to appropriate end users. The proposal also provides a record of management responsibility and accountability for various aspects of the project.

All proposals must be submitted in the attached format (**Appendix A**) to be considered. Additional elements may be added as needed by the Proposers, but all elements contained in the required format and order must be retained.

Title Page

The attached template (**Appendix A**) must be used for the title page. The title page may not exceed two pages in length and is included in the 12 page limit. The information required to be completed on the title page includes:

- Project Title (limit title to no more than **15 words or less**)
- **Announcement for Proposals and Task Statement you are responding to**
- Principal Investigator(s):
 - Affiliation
 - Address
 - Telephone/Fax Number(s)
 - E-mail
- Federal Cooperator: Include full mail and e-mail address as well as phone and fax number (Federal Cooperator will be main point of contact for all correspondence and other issues related to the project)
- Federal Fiscal Representative: Include full mail and e-mail address as well as phone and fax number
- Duration of Project: Include both the actual calendar dates of the proposal and the federal fiscal years for the proposal duration
- Annual Funding Requested from the Joint Fire Science Program: by Federal Fiscal Year (October 1 to September 30)
- Total Funding Requested from the Joint Fire Science Program
- **Total Value of In-Kind and Financial Contributions**
- Abstract: Summarize the proposed project in a brief abstract, not to exceed 250 words, in the title page template. The abstract should include the justification for the proposed project in relation to one or more task statements in the AFP, objectives, appropriate methodology, and applicability of results.
- Signature of PI _____ Date:
- Signature of Federal Cooperator: _____ Date:
- Signature of Federal Fiscal Representative (see definition Section H): _____ Date:

Note: The Federal Fiscal Representative will be responsible for receiving funding if the proposal is successful. Signature by the Federal Fiscal Representative also indicates that the federal grants and agreements specialist has reviewed and concurs with the terms of the proposal).

I. Introduction

An introductory section should include:

- **Project Justification.** A summary of the issue(s), why the project needs to be done (relevance to Task Statement(s) in the AFP), and benefits derived.
- **Project Objectives.** A statement of the project objective(s) must be clearly stated and measurable. This should include a brief statement of the hypothesis to be tested (if applicable), what information or product(s) will be provided at the end of the project, and how the information or product(s) can be used to resolve the issue(s) stated in the Task Statement(s).
- **Background.** This section includes a concise review and synthesis of existing knowledge and previous research or other pertinent background information in the project task area, a description of how the proposed project adds to or improves existing knowledge or tools, and a description of coordination with other relevant ongoing or completed products to ensure cross-compatibility and eliminate redundancy.

The introductory section is intended to provide peer reviewers and the Governing Board with evidence that the proposal demonstrates new work or significantly builds on previous and on-going work. Proposals should also describe how the work responds to task statements in the AFP. Although the literature may be extensive, the synthesis should generally include reference to no more than 15-20 of the most important and/or most relevant sources.

II. Materials and Methods

This section should describe procedures proposed for conducting the project in sufficient detail that a knowledgeable reviewer could understand the process and that a peer could replicate the proposed work.

This section should resemble an **abbreviated** methods section typically found in research study plans or scientific peer-reviewed journal articles. At a minimum, methods should **succinctly** identify the following if applicable or appropriate:

- A description of the study sites.
- Materials to be used to conduct the investigation.
- Experimental design- both treatment and design structures.
- Response variables and tentative independent variables or covariates.
- Sample design- including procedures for sub-sampling.
- The experimental unit(s) for statistical analysis.
- Tentative statistical analysis procedures.

III. Project Duration

Proposals will generally not be approved for longer than three years unless otherwise specified in the task statement. Proposals must clearly state how research activities, including the final report and deliverables, can be completed within the project term. Proposals should provide a proposed timeline for the project that identifies the significant milestones to be achieved. The Board expects investigators to outline realistic schedules in their proposals that include reasonable allowances for time likely to be lost to inclement weather and other problems.

Agreement funding is typically not available until late summer following selection and funding approval decision by the Governing Board. Projects will most likely not be funded in time to complete substantial amounts of fieldwork the summer following funding decisions. Proposers should adjust project schedules accordingly.

IV. Project Compliance

Proposals must clearly state when required National Environmental Policy Act (NEPA) and other necessary clearances will be completed to ensure the project may be completed within the project term. Proposals should identify the unit responsible for NEPA and other compliance. Letters from the responsible unit that describe the unit's commitment to the schedule are encouraged.

V. Budget

Proposed project budgets can be complex, often involving multiple agencies or units in association with non-federal units. Proposers should ensure that appropriate Federal Fiscal Representative (see definition Section H), as well as budget or grants and contract offices of non-federal cooperators, review the proposal prior to submission to ensure that the budget and other fiscal aspects of the proposal meet agency requirements. **Federal agencies anticipating partnerships with other entities in conducting the scope of work for the proposed project are expected to abide by their own agency's contract/grants and agreements authorities. Policy and procedures including competition requirements for any sub-awards may need to be conducted prior to or after proposal submission.**

Concurrence, signature, and contact information of the Federal Fiscal Representative is required on the title page of the proposal. If sub-awards are necessary both the Fiscal Representative and the Grants and Agreements specialist or Contracting Office must be involved in the development of the proposal. **Signature by the Federal Fiscal Representative also indicates that the federal grants and agreements specialist has reviewed and concurs with the terms of the proposal.**

Budget Format

Proposals must use the format found in **Appendix A** which must be included in the body of the proposal.

- The proposed budget should be sufficiently detailed to identify direct and indirect costs and related surcharges, to separate labor costs from operational costs, and to identify salaries associated with funded scientists.
- Contributed costs and the source of those costs should be included in the budget.
- Annual and total costs should be specified.
- Separate line items for "capitalized" equipment (more than \$5000) should be included.
- Out-year projections should be included for multi-year proposals.
- Proposed budgets should include travel expenses for one Investigator to participate in an annual 3-day workshop as required by the JFSP Governing board.

The Governing Board of the Joint Fire Science Program reserves the right to negotiate budget amounts and deliverables with proposing organizations. Stipends are normally funded, but tuition fees are not.

Budget Detail

Proposals must use the format found in **Appendix B**.

Indirect Costs

The JFSP Governing Board recognizes the need of agencies and organizations participating in the program to recover reasonable indirect overhead costs. However, cost effectiveness of the individual projects is clearly a determining factor in the final selection process. The JFSP is limited within its authorization regarding the amount of the indirect cost rate that will be approved. The standard maximum indirect rate is twenty (20) percent of that portion of the cost attributable to project performance. The standard maximum indirect rate that a federal agency

may charge for flow-through/pass-through indirect costs when a major portion of the project is subcontracted or sub-granted is ten (10) percent. The Governing Board expects proposals to include only reasonable and justifiable overhead costs.

Salary Policy

Normally, salaries of permanent full-time employees are expected to be provided by their agencies. This is also true of university faculty on 12-month tenure-track appointments. These employees are already fully funded by their institutions. However, the Governing Board recognizes there can be some unique situations where the Governing Board may agree to fund the salary of permanent employees.

A detailed justification for funding the salary of permanent employees must be included in the proposal to be considered for funding. The justification should indicate all sources of funding, including other pending projects and associated FTE for the permanent position for which salary funding is requested. The justification must be certified by the Agency Administrator, Research Line Officer or other appropriate institutional authority, other than the PI or other cooperator on the proposal, at the employee's organization or institution.

Please use the format found in **Appendix D** which must be used for the certification. In addition, permanent employee salary costs must be explicitly identified in the project budget. The Governing Board requires no special justification (other than a brief description of the need for the position in the budget justification section of the proposal) for funding temporary or term employees, post-doctoral employees, graduate, or undergraduate students. Stipends are normally funded, but tuition fees are not.

VI. Research Linkage

Please use the format found in **Appendix A** which must be included in the body of the proposal. This section should detail any other current research projects that this proposal is linked to in study sites, design, funding, or results including other Joint Fire Science Program, National Fire Plan or other projects.

VII. Science Delivery and Application

Investments in wildland fire science need to be accompanied by science interpretation and delivery. Program success will not be measured by how many research projects are funded or how many research papers are generated, but how critical information from research efforts is successfully conveyed to resource managers and end users with the expressed purpose of improving management decisions.

Therefore, it is imperative that each proposal include a description of how results and products will be effectively transferred to field managers and other end users in a useful form. A combination of passive (e.g., published papers, CDs, websites) and active (e.g., field tours, workshops, and training sessions) methods are preferred. Those proposals utilizing a variety of methods and approaches to accomplish this function will receive higher ratings. Project descriptions and deliverables must be available on the Internet.

All successful JFSP proposals must reflect a true management-scientist partnership. For example, managers could oversee project implementation, advise scientists, or participate directly in project research. Proposals should thoroughly address policy concerns, management implications, and costs to implement research findings. Successful proposals will outline plans for delivering clear, concise information that managers can implement. **The Governing Board believes that the best way to achieve effective science delivery is to include the expertise and services of individuals skilled in communication and technology transfer on every JFSP**

project team.

VIII. Deliverables

Proposals must provide specific details on deliverables that will be provided by the work, along with estimated realistic delivery dates. Please provide both a narrative and summarization through use of the table provided in **Appendix A**.

The Joint Fire Science Program tracks 14 deliverables in 3 categories:

1. Publications:

Book or Book Chapter, Final JFSP Report, Masters Thesis, Non-Refereed Publication, Ph.D. Dissertation, or Refereed Publication

2. Presentations:

Conference/Symposia/Workshop, Field Demonstration/Tour, Invited Paper / Presentation, Poster, or Training Session

3. Digital Information:

Computer Model/ Software/ Algorithm, Datasets (including spatial), Websites

Annual progress summaries are required and will be requested by the program office around mid-August each year.

Final Report

A final report must be delivered to the program office (both electronically and hard copy) by the project termination date that includes:

- A statement of how the deliverables listed in the proposal match what has actually been produced.
- Copies of all completed deliverables and a timeline of additional deliverables not yet completed.
- It is expected that all final products will include an electronic version suitable for distribution, posting, etc. Descriptions in English units, with metric equivalents in parenthesis, are required.
- A brief summary of what was learned from the investigation, including how the research met the objectives stated in the proposal.

Final report guidance is posted at the JFSP web site (<http://jfsp.nifc.gov/>).

IX. Expected Benefits of the Proposal

Provide a concise summary of the benefits expected from the results of the proposal to the land managers, fire managers or research community.

X. Qualifications of Investigators

Include Curriculum Vitae for at least one PI and at least one federal agency manager or research collaborator in the proposal appendices. These should reflect recent, relevant experience and publication(s) Principal Investigator Curriculum Vitae must be limited to no longer than two pages; Co-PIs and collaborator Curriculum Vitae will be limited to no longer than one page. Project personnel, (including collaborators) and their responsibilities must be described in the table provided in **Appendix A**.

XI. Literature Cited

Although the literature may be extensive, the synthesis should generally include reference to no more than 15-20 of the most important and/or most relevant sources.

F. Submission Checklist

Proposers are encouraged to use the following checklist prior to submitting their proposals to ensure all required items are addressed.

- One original and five stapled unbound copies of complete proposal packet including all material.
- An electronic version on a compact disk (in MS Word or editable pdf format) must be submitted with the packet. Proposals must be submitted without MSWord “Track Changes” artifacts.
- Proposal is no longer than 12 pages excluding budget detail, curriculum vitae, salary justification, and letters of support.
- Federal cooperator (if different than the PI) is clearly identified (see definition Section H).
- Signature and complete address including mailing address, surface mail address (if different than mail address), phone numbers and e-mail address of the principal investigator(s).
- Complete address including mailing address, surface mail address (if different than mail address), phone and fax numbers and e-mail address for the project point of contact are shown.
- Concurrence signature and complete address including mailing address, surface mail address (if different than mail address), phone and fax numbers and e-mail address of the Federal Fiscal Representative (see definition section H) are included.
- An introduction or background section that includes the specific objectives of the project, and describes how the proposed work is relevant to the Task Statement in the AFP.
- A brief review and synthesis of related past and current literature and previous research.
- A project budget, including identification of salaries and indirect costs.
- Include a “Justification of Need for Salary Support,” approved by appropriate authority, as necessary.
- A list of deliverables with dates of delivery.
- A science delivery and application mechanism as described in the science delivery section of this AFP.
- A list of cooperators and their proposed contribution(s).
- A curriculum vitae or other description of credentials of the PI and co-investigator(s) that are signatories which demonstrates ability to complete the proposed work.
- Letters of support are considered in the review process but are not required. However, letters of support must be included with the proposal package. Letters of support submitted separately from the proposal will not be accepted or considered. Letters must

include the title and principal investigator of the project.

G. Review and Evaluation

Proposals will be reviewed for:

- Relevancy
- Technical Merit
- Products, Delivery and Science Application
- Feasibility

Relevancy:

- Importance of the proposal to the user communities.
 - To whom and at what level (national, regional, local)?
 - At what time frame?
 - Immediate application
 - Science to build on
 - Proof of concept
- Importance of the proposal to the science community.

Technical Merit:

- Does the proposal directly address the AFP and task statement?
- Are objectives and hypotheses clearly articulated?
- Are methods appropriate for stated objectives?
- Can hypotheses be answered with the proposed design and analysis?

Products, Deliverables and Science Application

- What is the final product and why is it important?
- What will it do and who will use it or want it?
- Who will deliver it and how will it be delivered?
- Is it something completely new or does it build on or enhance an existing application?

Feasibility

- Administrative Adequacy
 - Budget
 - Skills and qualifications
 - Probability of success
 - Barriers
 - NEPA
 - Does the proposal follow the specified format?
- Collaboration
 - Manager/scientist interaction/partnership
 - Local management commitment
 - Does the proposal have in-kind contributions?

H. Definitions

Agency Administrator: The agency administrator is the federal official responsible for administering policy on an area of public land who has full authority for making decisions and providing direction. Also known as "Agency Line Officer," "Line Officer," and "Land Manager." Examples include Park Superintendent, Forest Supervisor, District Manager, Refuge Manager, District Ranger, and Field Office Manager. Planning staffs, technical specialists, and research line officers are not included for the purpose of this AFP.

Announcement for Proposals (or AFP): Joint Fire Science Program method of requesting proposals. Announcements for Proposals include Task Statements for which proposals are sought, instructions for proposal submission, and related information.

Federal Fiscal Representative: Employee of the federal agency sponsoring the proposal who will be responsible for the review and approval of the proposed project's budget. This individual will also serve as the administrative and/or fiscal point of contact for the proposed project if funding is awarded. This individual is typically an Administrative Officer or Budget Analyst.

Federal Cooperator: Employee of the federal agency sponsoring the proposal. This individual **is the primary contact** for the project and coordinates all project related activities, ensuring that all parties, including, PIs, collaborators, academic scientists, federal fiscal representative, and grants and agreements staff work in concert. The federal cooperator may also be the principal investigator (PI) or co-PI for the project.

Indirect Costs: Those costs that are a percentage of the overhead/administrative costs attributable to a specific research project. Examples include the cost of operations and maintenance such as janitorial, phone, and clerical services. The Joint Fire Science Program recognizes two types of indirect costs: "in-house" costs incurred by the agency, institution, or unit completing the research, and "pass-through" costs associated with passing funds to another agency, institution, or unit for the purpose of completing research.

Joint Fire Science Program Governing Board: An appointed, 10-person board, representing the JFSP partner agencies that manage the JFSP. The Board drafts and posts Announcements for Proposals, selects proposals for funding, supervises the JFSP Manager and program office, and conducts related business.

Joint Fire Science Program PI Workshop: Annual workshop, in which PIs of JFSP-funded projects provide progress reports, discuss research-related issues, and conduct other business.

Land Manager: see Agency Administrator

Principal Investigator (or PI): The individual identified in a proposal who is the research lead.

Science Delivery and Application: The transfer of information, materials, models and other research deliverables to end users, along with adequate information and training to apply the deliverables. 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 preferred.

Task Statement: A specific area of interest, identified in an Announcement for Proposals, for which proposals are sought.

Stabilization: Planned actions to stabilize and prevent further unacceptable degradation to minimize threats to life or property resulting from the effects of a fire, critical natural and cultural resources, or to repair/replace/construct physical improvements necessary to prevent degradation of land or resources. Emergency Stabilization actions must be taken within one year of containment of the fire.

Rehabilitation: Efforts (non-emergency) undertaken within three years of a wildland fire to repair or improve fire-damaged lands unlikely to recover to management approved conditions.

Restoration: The continuation of rehabilitation beyond the initial three years

APPENDIX A – PROPOSAL TEMPLATE

Proposals must use the following template to be considered.

Project Title: (15 words or less)	
Announcement for Proposals and task statement this proposal is responding to:	Joint Fire Sciences AFP 2007-x Task Y,
Principal Investigator:	<Name>
Affiliation:	<Organization/Unit/Institution>
Address:	<Mailing Address>
Phone:	<000-000-0000>
Email:	<smokey@bear.com>
Co-Principal Investigator:	<Name>
Affiliation:	<Organization/Unit/Institution>
Address:	<Mailing Address>
Phone:	<000-000-0000>
Email:	<smokey2@bear.com>
Co-Principal Investigator:	<Name>
Affiliation:	<Organization/Unit/Institution>
Address:	<Mailing Address>
Phone:	<000-000-0000>
Email:	<smokey3@bear.com>
Federal Cooperator: (Point of Contact)	<Name> <Affiliation> <Mailing Address> Email: <woods@owl.com> Phone: <000-000-0000> Fax: <000-000-0000>
Additional Federal Collaborator(s):	<Name> - <Affiliation> <Name> - <Affiliation> <Name> - <Affiliation>
Federal Fiscal Representative:	<Name> <Affiliation> <Mailing Address> Email: <scrooge@bigbucks.com> Phone: <000-000-0000> Fax: <000-000-0000>
Duration of Project:	X calendar years (MM/YYYY through MM/YYYYY); X fiscal years
Annual Funding Requested:	FY200x: \$ FY200y: \$ FY200z: \$
Total JFSP Funding Requested:	\$xx,xxx
Total Value of In-Kind Contributions:	\$xx,xxx
Abstract:	

Signature of PI:	<signature>	<Date>
Signature of Co-PI:	<signature>	<Date>
Signature of Co-PI:	<signature>	<Date>
Signature of Co-PI:	<signature>	<Date>
Signature of Federal Cooperator:	<signature>	<Date>
Signature of Federal Fiscal Representative:	<signature>	<Date>

I. Introduction

<Narrative>

1. Project Justification

<Narrative>

2. Project Objectives

<Narrative>

3. Background

<Narrative>

II. Materials and Methods

1. Study Site

<Narrative>

2. Sampling Design

<Narrative>

3. Methods

<Narrative>

4. Data Analysis

<Narrative>

5. Materials

<Narrative>

III. Project Duration and Timeline

This project will last approximately x years, assuming a start date in Month of Year, with completion in Month of Year.

Time Period (Month/Year)

- Project Milestone(s)

Time Period (Month/Year)

- Project Milestone(s)

Time Period (Month/Year)

- Project Milestone(s)

IV. Project Compliance - NEPA and other clearances.

<Narrative>

V. Budget

Budget and Salary Justification

<Narrative – If salary is requested for a permanent full-time Federal employees or university faculty on 12-month tenure-track appointments a detailed justification must be included in the proposal. The justification should indicate all sources of funding and associated FTE for the permanent position for which salary funding is requested. The justification must be certified by the Agency Administrator, Research Line Officer or other appropriate institutional authority, other than the PI or other cooperator on the proposal, at the employee's organization or institution. The format included in Appendix D **must** be used for the certification.

Table x. Proposal Budget Summary for FYs 200x, 200y, and 200z

Budget Item	200x		200y		200z		TOTAL
	Requested	Contributed	Requested	Contributed	Requested	Contributed	
LABOR							
TRAVEL							
VEHICLES							
Capitalized Equipment:							
Materials and Supplies:							
Science Delivery and Application:							
Other							
Total Direct Costs							
Indirect Costs: XX% - all costs							
Total Contributed Funding all years		xxxxxxx		xxxxxxxxx		xxxxxxx	xxxxxxx
Total Requested Funding all years	xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx

VI. Research Linkage:

<Narrative>

Table x. Current and Pending Research Grants

Grant Program	Project or Proposal Description/Identification	Funding Amount	Project Completion Date

VII. Science Delivery and Application

<Narrative>

VIII. Deliverables

<Narrative>

Table x. Deliverable, Description and Delivery Dates

Deliverable	Description	Delivery Dates

IX. Expected Benefits of the Proposal

<Narrative>

X. Qualifications of Investigators

The curriculum vitae of <PI>, <Co-PI> and <Co-PI> are included in the Appendix. A summary of the project personnel, (including collaborators) and their responsibilities are described in the table below.

Table x. Personnel Involved in Project, and their Responsibility

Personnel	Responsibility

XI. Literature Cited

APPENDIX B – BUDGET DETAIL

Table x. Budget Detail for FYs 200x, 200y, and 200z

Budget Item	200x		200y		200z		TOTAL
	Requested	Contributed	Requested	Contributed	Requested	Contributed	
LABOR/PI salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary Subtotal							
Commercial air travel:							
Travel expenses (i.e., meals, lodging): - Field - Site Visits - PI workshop - Other							
Vehicle Rental:							
Capitalized Equipment: - Computers - software - other (itemize)							
Materials and Supplies:							
Science Delivery and Application: - Manuscript Prep/Publication Costs - Web Page - Software distribution - workshops - Other							
Other - Itemize							
Total Direct Costs							
Indirect Costs attributable to project (in-house): XX% - of total direct costs (if applicable)							
Pass-through indirect costs: YY% - of total direct costs (if applicable)							
Total Contributed Funding all years		XXXXX		XXXXX		XXXXX	XXXXX
Total Requested funding all years	XXXXX		XXXXXXXX		XXXXXXXX		XXXXXXXX

APPENDIX C - CURRICULUM VITAE

APPENDIX D – SALARY JUSTIFICATION

Certification to the Joint Fire Science Program Justification of Need for Salary Support

I hereby certify the attached Justification of Need to provide temporary salaries for full-time permanent employee (s) _____ (*list name of employee(s)*) is necessary and appropriate to enable him/her (them) to fully and directly participate in the proposed project.

Justification:

I understand that salary funding for this/these employee(s) directly involved in the proposed project is temporary and will not be provided beyond the duration of the proposed project.

Signature _____

Date _____

Name (type or print) _____

Title _____

Phone Number _____