WILDLAND FIRE USE SUPPLEMENTAL MANAGEMENT GUIDE

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COLORADO & WYOMING STATE OFFICES
BRANCH OF FIRE AND AVIATION

2006 - 2007

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➢ Policy Reference

Wildland Fire Use (WFU) is one of several Appropriate Management Response (AMR) methods utilized by land management agencies to manage wildland fires. Wildland Fire Use as well as the AMR does not include management ignited fire which is more commonly referred to as prescribed fire.

Bureau of Land Management (Bureau) policy allows for the management of wildland fires initiated by natural ignitions to meet specific land management objectives. The management of natural ignitions to meet specific land management objectives is referred to as "Wildland Fire Use."

The "Wildland Fire Use, Implementation Procedures Reference Guide" (May 2005, Revised 03/06 & 04/06) provides standardized procedures, specifically associated with the planning and implementation of wildland fire use. These procedures meet all Bureau policy requirements described in the 2003 Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy.

Prior to implementing wildland fire use under the standards in the 2005 Guide, local units must have ensured compliance with National Environmental Policy Act (NEPA), National Historical Preservation Act (NHPA) and Endangered Species Act (ESA) requirements. In addition, an approved fire management plan must be in place which identifies how the local unit plans to implement wildland fire use. All actions implemented under this guide must also be consistent with local unit land and resource management plans.

This Implementation Procedures Reference Guide (2005 Guide) meets the requirements of National Fire and Aviation Executive Board (NFAEB) to develop common language and unified direction or guidance for agency/bureau manuals, directive handbooks, and guidelines to complete final implementation of this policy.

➢ Planning

There are three tiers of planning necessary to develop and implement wildland fire use.

- Land Management Plan (LMP). This is the overall document that sets resource management goals and objectives for a geographically defined area.

- Fire Management Plan (FMP). This identifies the appropriate strategies to achieve resource objectives.

- Fire Planning Unit (FPU) is the basic planning component of the FMP.

- A Fire Management Unit (FMU) is a sub-geographic area of an FPU. This was previously referred to as the Fire Management Zone (FMZ). FMUs may have multiple objectives and/or constraints and share like objectives and/or constraints with other FMUs.

- An FPU usually includes multiple FMUs, or may only include a single FMU, dependent on management objectives and/or specific localized situations.

FMPs must be consistent with firefighter/public safety, values to be protected, land and resource management plans and must address public health issues.

Wildland Fire Implementation Plan (WFIP). This is the site-specific implementation plan for a wildland fire use incident and consists of three distinct stages. It includes, at a minimum, the Stage I phase. Stage I is a stand-alone plan and includes short-term management actions Stage I is followed by Stage II for the inclusion of additional and more specific short-term management actions that are needed for successful WFIP implementation. A long-duration or complex incident will generally require the completion and implementation of Stage III. The methodology for initiating all stages of the WFIP is found in the "Wildland Fire Use, Implementation Procedures Reference Guide".

Minimum planning criteria that must be met to establish wildland fire use are as follows:

- Wildland fire use is supported in the unit's land use planning document and in the corresponding fire management plan.

- Wildland fire use areas are pre-defined geographic areas in the FMP.

- Resource management objectives are pre-stated in the LUP and FMP.

- Prescriptive criteria should be based upon vegetative composition (i.e. Desired Future Condition/Potential Natural Vegetation) and other measurable resource management objectives. It is not recommended to use fire behavior elements as the primary prescriptive criteria for initiating a wildland fire use event. The unit(s) implementing wildland fire use should also consider in their planning, such items as long-term drought, generalized seasonal fire dynamics and other localized factors which will provide the agency administrator with accurate and realistic data to make educated and sensible decisions regarding fire use management.

- Additional pre-planning documentation may include pre-identified Maximum Manageable Area (MMA) boundaries, Rare Event Risk Assessment (RERAP), FARSITE assessments and historic weather analysis from Fire Family Plus. For smaller WFU areas, a detailed identification of critical resources that may need protection or mitigation actions may be pre-identified and cataloged to assist the

fire manager during rapidly changing situations. This and other documentation is largely dependent on local expertise, need and fuel types.

➢ Implementation Roles and Responsibilities

The Agency Administrator (AA) or Field Office Manager is the responsible official for the approval or disapproval of wildland fire use events occurring on Bureau managed lands in Colorado and Wyoming. The AA may delegate the WFU decision process to a designated acting official; however this must be specified in written delegation(s) of authority. The AA (or delegated acting) is responsible for actions and outcomes of the specific WFU event throughout the life of the incident, including periodic and relative risk assessments. Any changes to this responsibility must be documented in appropriate delegations of authority

For Colorado & Wyoming BLM lands, (as stated within the "Wildland Fire Use, Implementation Procedures Reference Guide") a fully qualified Initial Attack Incident Commander (ICT4) may manage a wildland fire use incident while the incident is under the specific direction of a Stage I WFIP. If a local unit chooses to allow an ICT4 to manage a fire use event in Stage I of the WFIP, they should consider the following:

- Utilize only local ICT4s or those who have a strong knowledge of the local Fire Management Plan and the local fuels, climatic and fire behavior characteristics common to the fire area.

- Consider the effect on draw-down of local initial attack forces while their local resources are committed to the fire use incident(s).

- The assigned ICT4 should have a "working" knowledge of wildland fire use management principles and procedures.

In addition to the option of utilizing an ICT4 for "on-the-ground" management of the fire use incident, the local unit may also choose to allow the Unit Duty Officer to complete the Stage I WFIP.

> ***Note:*** *The March & April 2006 revisions to the May 2005 Wildland Fire Use Implementation Procedures Reference Guide clarify the roles and responsibilities of the ICT4 throughout the various stages of the Wildland Fire Implementation Plan (WFIP). See Appendix A.*

In any case, because of the potential extreme fire behavior and "flashy" fuel conditions commonly encountered within the lands administered by the Bureau in Colorado and Wyoming, it is strongly advised that local units consider collecting all of the necessary data and begin the planning process to be incorporated into the development of the Stage II WFIP immediately following approval of the Stage I WFIP. This is suggested to help local units stay ahead of potentially rapid escalations in risk and complexity.

Stages II and III of the WFIP are to be developed and managed in accordance with the guidance found in the "Wildland Fire Use, Implementation Procedures Reference Guide". This includes the assignment of a Fire Use Manager I or II (FUM1 or FUM2) for the planning and implementation of those two specific Stages.

For all fire use incidents and at all levels or stages of the WFIP, a formal delegation of authority for the management of the incident(s) must be given to the ICT4 or Fire Use Manager. This is extremely important for the following reasons:

- Because of the inherent risks in WFU, this delegation would assist in making sure the lines of authority are clearly defined and approved.

- A WFU may go through multiple complexity levels over long duration, this serves to clearly delegate authority for actions to the ICT4 or FUM1-2.

- Unlike a suppression action, WFU requires a different set of planning needs with associated tasks and duties. A formal delegation will spell these out and fully define the responsibilities/tasks to the ICT4 or FUM1-2.

Fire Use Managers may manage multiple incidents, depending upon the specific situation.

The qualifications and responsibilities of the Fire Use Manager are as follows: Fire Use Manager Type 2 (RXB2 or ICT3), Fire Use Manager 1 (RXB1 or ICT2). In either case, in order to be fully qualified, the person must have completed Advanced Fire Use Applications (S-580) and successfully completed their assigned task book levels for FUM1 or FUM2.

Typically, a Fire Use Manager Type 2 (FUM2) will manage those incidents that are of low to moderate complexity or in some cases, higher complexity incidents where local personnel have the sufficient depth and skill to manage the incident(s) with little impact to local and regional resources. In some situations, especially where fire use management skills are limited, or where the incident(s) are highly complex and have the potential for long term existence, a Fire Use Manager (FUM1) may be required to manage these types of events. Upon occasion, when this type of situation is encountered, a formal fire use management team, including 5-12 specialists is warranted, in addition to the FUM1. The determination of the FUM2 or FUM1 depends upon the results developed in the completion of the Planning Needs Assessment and the Fire Use Manager Decision Chart.

The Fire Use Manager (I or II) is responsible for the development of the Stage II and III WFIP, and the organization and expertise necessary to successfully manage wildland fires to meet resource objectives.

➢ Operational Procedures

The "Wildland Fire Use, Implementation Procedures Reference Guide" (May 2005) is the Bureau's operational direction for managing wildland fire use incidents. This document provides detailed guidance for development of the Stage I, Stage II and the Stage III of the Wildland Fire Implementation Plan (WFIP). The actions under each stage are completed as required and become the complete Wildland Fire Implementation Plan package. All of the appropriate forms and documents needed to initiate, complete, and validate the WFIP are included within the "Wildland Fire Use, Implementation Procedures Reference Guide". In addition, the electronic software program that assists managers in the development of the WFIP as well as the WFSA (Wildland Fire Situation Analysis) is currently available and should be pre-installed on several select computers in each Field Office and Fire Management Zone locations.

- **Stage I:**

The strategic fire size-up, initial actions and the Decision Criteria Checklist at Stage I may be delegated to the Agency Administrator and/or the designated "Acting". When the Initial Attack Incident Commander (ICT4) and the Unit Duty Officer (UDO) determine the suitable appropriate management response action to be applied to a given incident, they must document their recommendation on the initial attack size-up card or similar document. If the ICT4 and the UDO recommend that the incident is a suitable wildland fire use candidate, the UDO will contact the AA or delegated acting for initiation of the Stage I WFIP and the completion of the Decision Criteria Checklist. Once the decision is made to move forward with the WFU management option, a qualified ICT4 or Fire Use Manager must be assigned to the incident. The required timeframe is 8 hours for completion of Stage I

> ***Note:*** In the event that a suitable fire use candidate is given a suitable fire use recommendation by the IC and the UDO and the AA chooses, during the Decision Criteria Checklist, to select an AMR other than fire use, the decision rationale **must** be completed and documented on the Decision Criteria Checklist. This is very important as it provides the agency with statistical data regarding the reasons for not allowing WFU when it is otherwise specified in Resource Management Plans and related Fire Management Plans.

- **Stage II:**

The Implementation Procedures Reference Guide requires that the Stage II Short Term Implementation Actions assessment be completed within 48 hours of the determination to proceed to Stage II. In fuel types where the primary carrier of the fire is grass and or brush the Stage II action plan should be completed prior to the next burning period. Although the designation of a Maximum Manageable Area (MMA) is not required at Stage II, because of fuel situations within Bureau

administered lands and the potential for rapid growth under certain circumstances, it may be advisable to develop an MMA during Stage II. At a minimum, a defined set of management action points should be identified to aid in the decision process for escalation to Stage III in the Wildland Fire Implementation Plan (WFIP) process. The development of the MMA or any predetermined management action points may be based upon actual growth calculations, by pre-planned methods or by utilizing the boundaries that provide the best feature to enable successful management, where the identified fire use event is located. In any case, the "official" declaration of the MMA is not required until Stage III of the WFIP unless it is otherwise documented in writing by the Agency Administrator responsible for the overall management of the fire use event.

Within the varied locations administered by the Bureau, there are often opportunities to enter into cooperative agreements with private landowners, as well as local, state and other federal agencies for various facets of wildland fire use management. It is important (if possible) for the Agency Administrator and the local fire management staff to prepare and finalize these agreements prior to or including the period that the respective incident is being managed under the guidelines of Stage II. Waiting until Stage III to enter into these agreements may often be too late for proper preparation and potential mitigation actions to be initiated. It is highly recommended that these agreements be finalized prior to the fire season or during the initial FMP planning process when the WFU area is defined. Care should be taken to annually review all pre-existing agreements to ensure that they are still valid and represent the actual ownership and to reinforce the expectations and desires of all parties to the agreement(s). Copies of sample agreements are located in Appendix B.

- **Stage III:**

The Stage III actions supplement the FMP by providing the full long-term implementation actions necessary to manage the fire to accomplish the identified objectives. During Stage III it is desirable for the fire use team or those individuals managing the fire to develop firefighter pocket cards for that particular incident. These pocket cards are an invaluable safety tool for incoming resources that may be assigned periodically throughout the life of the incident and who are not familiar with local climate, fuel and fire behavior conditions. This stage must be completed within 7 days of the determination to proceed to Stage III.

- **Periodic Fire Assessment:**

The Implementation Procedures Reference Guide requires that for each WFU fire, the Agency Administrator (or delegated individual) will periodically affirm the capability to continue management of the fire. The frequency for the periodic assessment is determined by the AA in concert with the person assigned to manage the fire use incident. Within the Bureau administered lands in Colorado and

Wyoming it is strongly recommended that active fires in grass and/or shrub fuel types which exhibit potential for rapid movement (spread), be reassessed on a daily basis. ***It is imperative that the AA (or delegated individual) and the ICT4 or FUM1-2 review and validate or update the relative risk rating for the WFU each and every time a periodic assessment is completed.*** This is an extremely important component for the successful management of any WFU event and may help the local unit to identify escalations and de-escalations in complexity.

- **Considerations:**

    - If a Wildland Fire Use fire exceeds the established MMA, or is no longer meeting the resource objectives, a Wildland Fire Situation Analysis (WFSA) will be completed to evaluate and select a new strategic alternative and appropriate management response. There are exceptions listed in the Implementation Procedures Reference Guide. These exceptions are:

        - A fire exceeding the MMA does not require an automatic change to a different strategy. There will be cases where a change in strategy from wildland fire use to wildfire suppression and the formal implementation of the Wildland Fire Situation Analysis (WFSA) process because a wildland fire use event exceeded an established MMA is not prudent or logical. In these situations, experience may indicate that the MMA will be exceeded by the specific wildland fire use on a very small or non-threatening scale. Management options in this situation include:

            - Constraining the fire spread to the small or non-threatening overrun of the original acceptable area using whatever resources are available to deal with the situation. Containment must be accomplished within 48 hours from the end of that burning period, or the fire must be converted to a wildfire accompanied by a WFSA. If containment is successful, management of the fire as a WFU may continue. If the fire is converted to a wildfire, no further acreage gain may be attributed to wildland fire use.

            - In some situations, there may be reasonable justification to change MMA locations. Any proposed change to the MMA must be thoroughly documented and justified by the unit managing the fire. Approval to change the MMA will be provided by the next higher level in the organization. Changes in the MMA are not warranted simply due to the spread of the fire near the boundary. The approving level will review the initial MMA establishment criteria, changes to the situation affecting the

need to change the boundary, and local and regional situations before determining if the proposed change is warranted.

- ❖ Where adjacent units/agencies have established adjacent MMAs for separate fires, it will be acceptable, given the units'/agencies' agreement, to manage fire spread from one MMA into another without formal change of either MMA boundary.

- o Regardless of the stage in the process that the local field unit is implementing, the standard, agency-adopted work rest guidelines apply to all wildland fire use incidents.

- ➢ **Complexity:**

Complexity for Wildland Fire Use incidents will only be determined using the Relative Risk Rating process specified in the Implementation Procedures Reference Guide.

For wildland fire use incidents of low complexity and that are being managed within the framework of the Stage I WFIP, a fully qualified Incident Commander Type 4 (ICT4) may manage a single fire use incident. The NWCG has established two levels of Fire Use Manager (FUM1 and FUM2) for varying levels of complexity. Only a qualified Fire Use Manager may manage a Wildland Fire Use incident at Stages II and III of the WFIP. The exception(s) to this are specified in the March and April 2006 revisions to the "Wildland Fire Use Implementation Procedures Reference Guide of May 2005". See Appendix A.

As the incident complexity increases, consideration may be given to assigning additional qualified personnel or a formal team. Indicators of increasing complexity include, but are not limited to; lack of key skill positions available to manage the incident, safety management issues, the number of fires being managed, substantial increases in acreage, anticipated severe weather, increasing coordination needs, smoke management issues, threatened or at-risk resources, and logistical support needs. There are risk assessment, planning needs and fire use manager selection guidelines and procedures listed in the Implementation Procedures Reference Guide.

Each unit-specific fire management organization should develop localized and specific policies and guidelines or "triggers" that initiate changes in personnel to be ordered and assigned. This is extremely important for the determination of the qualification level for the Fire Use Manager and associated Fire Use Team configurations for fire use events since throughout the "life-span" of a fire use event, complexities and associated management options may change several times

Because of the limited number of Nationally configured, interagency Type II Fire Use Teams, currently sponsored by GACCs, local units are encouraged to train, develop and maintain a cadre of qualified personnel with fire use capabilities to manage fire use incidents that are typically less complex than what normally requires the commitment and utilization of a FUM1 or one of the Type II Fire Use Teams.

When the given fire analysis moves into the Stage III level, it is usually standard procedure to also order and fill additional positions such as Long-Term Analyst (LTAN), Geographic Information Systems Specialist (GISS), RERAP Specialist (RRAP) and FARSITE Specialist (FARS). These additional positions are needed to sufficiently analyze long-term weather, fire behavior and fire growth. Additional positions in safety, operations, logistics, finance, information and plans should be considered on a case-by-case basis.

- **Financial:**

Wildland fire use incidents use the **2821** (suppression) sub-activity; **IT** is the specific WFU program element, followed by the fire number assigned by the responsible office. The regulations applying to hazard pay and the AD pay plan apply to wildland fire use incidents. Additional information can be found in the Interagency Incident Business Management Handbook.

Wildland fire use incidents, on occasion, may require some form of stabilization and rehabilitation depending upon the individual situation and ecosystem condition. In those cases, the unit where the fire was located must follow established Bureau policies and guidelines regarding this type of action. An example of the process that has been successfully utilized in Colorado for several seasons, utilizing fuels management assistance from the National Office (NIFC) is included in Appendix C.

- **Documentation and Reports:**

The Implementation Procedures Reference Guide identifies the documentation required at each implementation stage. These documents and other documentation normally completed as part of the incident management activities are required to be retained in the final fire package.

Wildland Fire Use incidents are reported in the Bureau's fire reporting system (DI-1202's). Wildland Fire Use incidents are recorded as "Fire Type 1" and Protection Type 9." Should a Wildland Fire Use incident transition to a WSFA and appropriate management strategy are required. The acreage burned while the incident was managed as a Wildland Fire Use incident would be reported as discussed above. The acreage burned after the transition would be reported as "Fire Type 1" and "Protection Type 1" using a new fire number.

The National Fire Plan Operations Reporting System (NFPORS) will become the WFU reporting site in future years. For FY-06, the National Office of the Bureau will perform the conversion from the DI-1202 system to the NFPORS system until the appropriate business rules are developed for NFPORS.

- **Implementation Restrictions:**

Implementation of WFU is restricted at National Preparedness Levels IV and V. (See the Rocky Mountain Area & National Mobilization Guides.)

At National Preparedness Level IV, Wildland Fire Use application may be continued or be initiated if the proposed action receives concurrence the appropriate agency at the Regional or State Office level. This concurrence must be based on an assessment of risk, impacts of the proposed actions on area resources, and include feedback from the Geographic Area Multi Agency Coordination (MAC) Group. The Geographic Area MAC Group provides information or perspectives to agencies wishing to proceed with or implement a Wildland Fire Use event. The final decision to implement resides with the implementing agency's administrator.

At National Preparedness Level V, Wildland Fire Use applications can be continued or be initiated if the proposed action is recommended by the Regional or State Office levels. The National agency representative will assess risk impacts of the proposed actions and discuss the proposal with the National MAC group. This group will have an opportunity to provide information or perspectives to agencies wishing to proceed with or implement a Wildland Fire Use event. The final decision to implement resides with the implementing agency's administrator.

- **Fire Use Modules**

Whenever possible or feasible, local units and fire use management teams should utilize fire use modules to assist in the management of fire use events. These modules were originally formed to handle the myriad of specialized tasks that are often unique to fire use fires. There are several National Fire Use Modules (FUM) located throughout the United States and are ordered through standard dispatch protocols. Beginning in 2004, the BLM in Colorado began hosting the Unaweep Fire Use Module, based in Grand Junction. The specific operating plan and associated information for the Unaweep Fire Use Module is attached in Appendix D. In addition to the Unaweep Module, the Black Hills Fire Use Module, hosted by the National Park Service and located at Jewel Cave National Monument in South Dakota is the only other nationally recognized and certified fire use module located within the boundaries of the Rocky Mountain Area.

- **Appendices:**

  - **Appendix A:**

  1. March / April 2006 Revisions to: Wildland Fire Use Implementation Procedures Reference Guide – Errata Sheet

  - **Appendix B:**

  2) Fire Management Memorandum of Understanding with County Agency (Colorado Version)
  3) Fire Management Memorandum of Understanding with Landowners (Updated Version)
  4) Fire Management Memorandum of Understanding with County/State Agency (Wyoming Draft Version)

  - **Appendix C:**

  1. Greasewood WFU Short-Term Impact Mitigation Plan (example)

  - **Appendix D:**

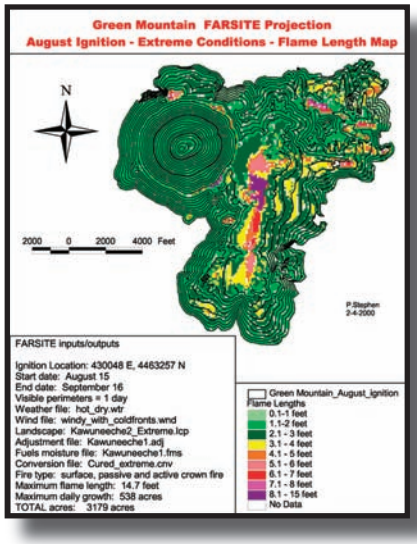
  1) Unaweep Fire Use Module – Operations Plan - 2006

Appendix A:

March / April 2006 Revisions to: Wildland Fire Use Implementation Procedures Reference Guide – Errata Sheet

Wildland Fire Use

Implementation Procedures Reference Guide



May 2005

Minor Revisions
March and April
2006

Note: In March 2006, changes were made to Table 3 on page 22. An errata sheet was issued. In April 2006, minor changes were made to the description for RERAP on page 35 of Table 4 and to the qualifications onTable 6 on page 56.

Table 3 shows the **minimum** level of implementation qualifications. During implementation, as fire activity and management needs escalate, implementation qualification needs ascend to a higher level. But as conditions moderate and management needs drop, implementation qualifications can descend to lower levels. Table 3 and Figure 8 are used jointly as fire situations and conditions escalate. When conditions are moderating or lessening, Table 3 and Figure 8 provide the necessary qualification levels for implementation, regardless of what level of the WFIP has been completed (i.e. Stage I, II or III). Qualifications can descend back to an ICT4 after either Stage II or Stage III has been completed, but must be guided by Figure 8.

Initial information to consider in selecting the value for each variable in Figures 7 and 8 is provided in the following section and after each individual chart in Appendix A. This list is not all inclusive and items on the list can be expected to vary by place and time. Users are expected to exercise their judgment in selecting the values; information is intended to provide both guidance in completion and flexibility in determining exactly what the descriptions mean. Local information can and should be amended to the lists to better reflect site-specific situations.

Table 3. WFIP implementation minimum qualifications

WFIP Stage	Minimum Implementation Qualifications (Use Fire Use Manager Decision Chart to determine recommended position)
WFIP Stage I	Incident Commander Type 4 (ICT4) **(Must have local knowledge or prior experience in implementing WFIPs and managing wildland fire use events.)**
WFIP Stage II	Incident Commander Type 4 (ICT4) **(Must have local knowledge or prior experience in implementing WFIPs and managing wildland fire use events.)**
WFIP Stage III	Incident Commander Type 4 (ICT4) **(Must have local knowledge or prior experience in implementing WFIPs and managing wildland fire use events.)**

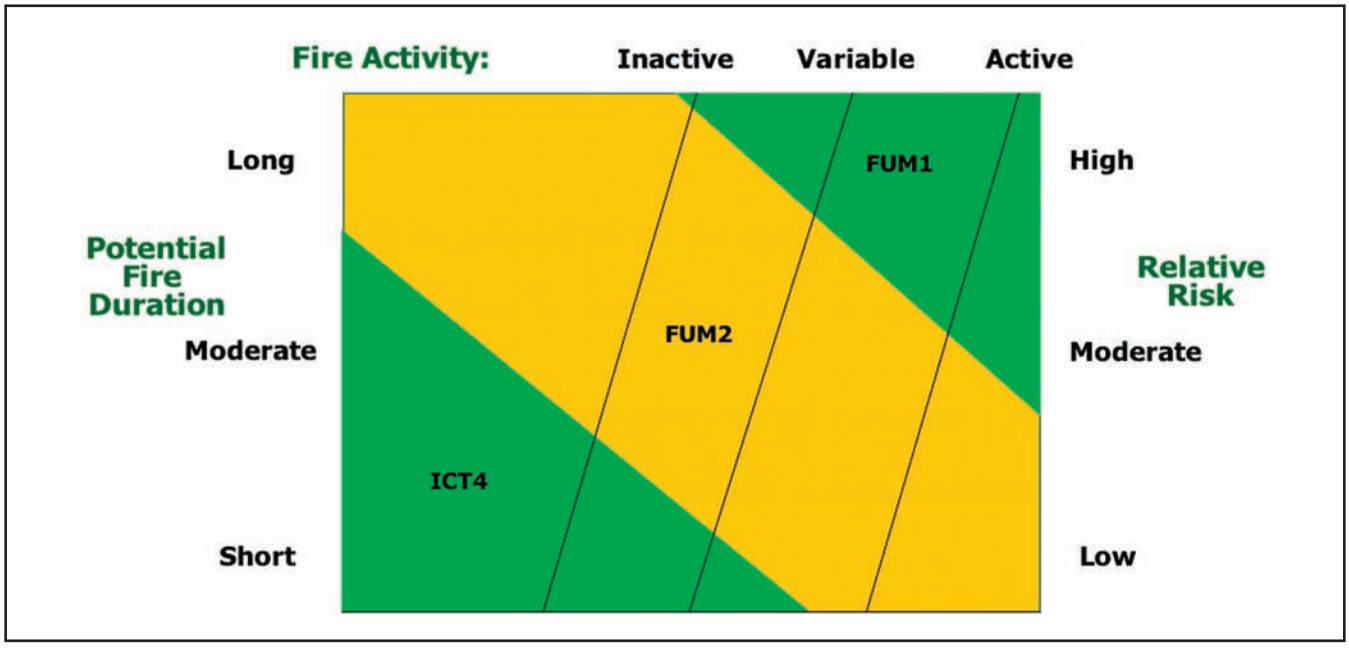


Figure 8. Fire Use Manager Decision Chart.

RERAP (Rare Event Risk Assessment Process)	RERAP determines probabilities that a wildland fire will reach or exceed an MMA or reach an area of concern due to a rare weather event. It also can provide probabilities of a season-ending event.
VCIS	The Ventilation Climate Information System (VCIS) allows users to assess risks to values of air quality and visibility from historical patterns of ventilation conditions.
VDDT (Vegetation Dynamics Development Tool)	This model uses state in transition models or box and arrow diagrams to show how vegetation can change over time.
WFAS (Wildland Fire Assessment System)	The Wildland Fire Assessment System is an internet-based information system. The current implementation provides a national view of weather and fire potential, including national fire danger and weather maps and satellite-derived "Greenness" maps.

Threats

Identification of all known and anticipated threats is critical in evaluating values, hazard, and probability for the fire(s). The nature of long-term strategic planning involves anticipating and prediciting where the fire may move, what it may impact, and designing a strategy to minimize or eliminate those impacts. Threats must be defined for the MMA boundary, all sensitive natural and cultural resources inside and immediately outside that boundary, firefighters and the public, air quality, and other concerns as appropriate. Once a threat is defined in this section of Stage III, it must be linked through subsequent sections and appropriate actions (monitoring and mitigation) must be tied to that identified threat.

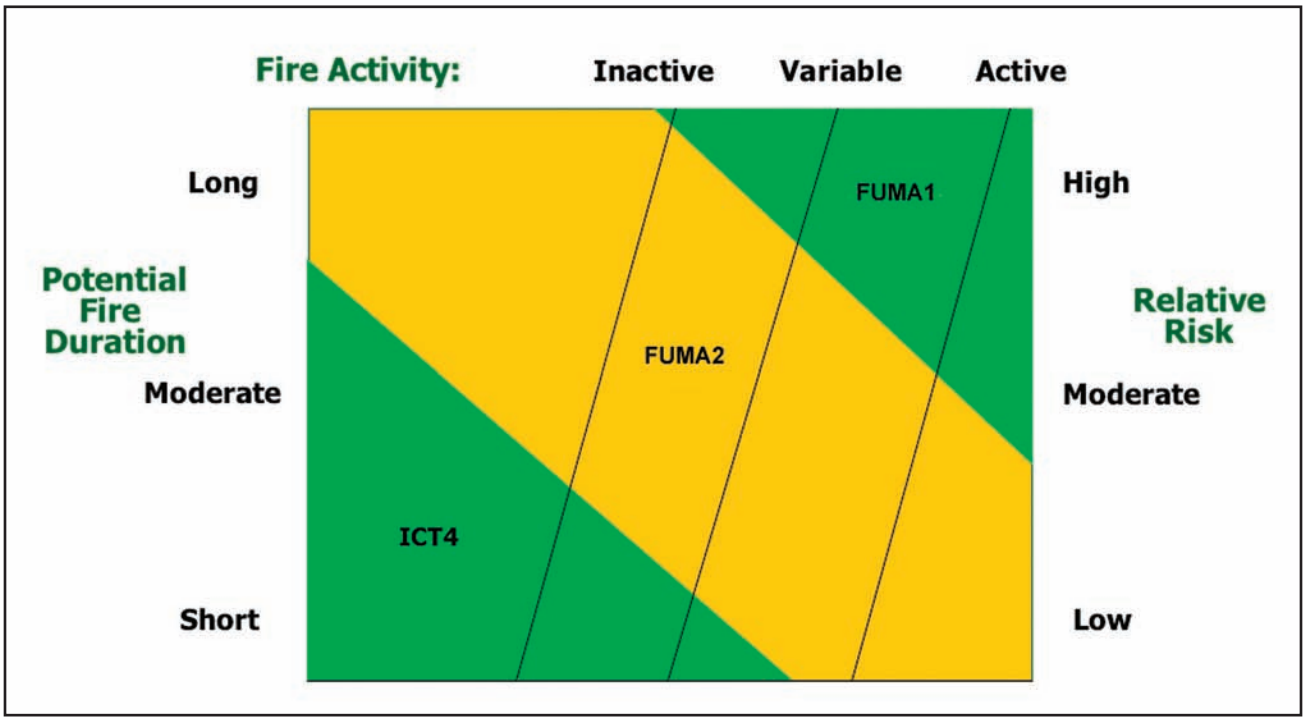
Monitoring Actions

A monitoring plan of action is necessary to ensure successful accomplishment of the objectives and to continually acquire information relevant to the fire situation. Monitoring is useful for documenting observed fire weather, observed fire behavior, fire movement toward management action points (MAP), fire effects, smoke dispersal and volume, and to aid in validating fire behavior and weather forecasts. Monitoring variables that are important can include, but are not limited to: smoke dispersal, live and dead fuel moistures, daily weather observations, fire perimeter and progression mapping, and observed fire behavior. Monitoring frequency will be based on fire activity and location. All monitoring information will be analyzed, applied as needed, and archived as part of the final documentation package.

Mitigation Actions

Science-based risk assessments, as discussed in the previous section, provide a solid foundation for developing a successful risk management/mitigation strategy. But, it must be clearly understood that risk assessment and risk management are not synonymous. Based on the risk assessment, decision makers decide what to do about managing the risk. Part of WFIP Stage III is a detailed plan that identifies mitigation actions, the activities for mitigating or eliminating risk. Risk can be mitigated or eliminated in three central ways: reduce the hazard, reduce the probability

Fire Use Manager Decision Chart



To complete the chart, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its intersection with the line connecting the left and right variables. Read the level of fire use manager needed directly from the background area where the intersection occurs. The relative risk values are those obtained from the Wildland Fire Relative Risk Assessment process.

Minimum level of implementation qualifications. During implementation, as fire activity and management needs escalate, implementation qualification needs ascend to a higher level. But as conditions moderate and management needs drop, implementation qualifications can descend to lower levels. Table 3 and Figure 8 are used jointly as fire situations and conditions escalate; when conditions are moderating or lessening, Figure 8 provides the necessary qualification levels for implementation.

Table 6. WFIP minimum implementation qualifications

WFIP Stage	Minimum Planning Qualifications (Use Fire Use Manager Decision Chart to determine recommended position)
WFIP Stage I	Incident Commander Type 4 (ICT4) **(Must have local knowledge or prior experience in implementing WFIPs and managing wildland fire use events)**
WFIP Stage II	Incident Commander Type 4 (ICT4) **(Must have local knowledge or prior experience in implementing WFIPs and managing wildland fire use events)**
WFIP Stage III	Incident Commander Type 4 (ICT4) **(Must have local knowledge or prior experience in implementing WFIPs and managing wildland fire use events)**

Appendix B:

Fire Management Memorandum of Understanding with County Agency (Colorado Version)

Fire Management Memorandum of Understanding with Private Landowners (2006 Version)

Fire Management Memorandum of Understanding with County/State Agencies (Wyoming Draft)

Fire Management Memorandum of Understanding

General

This Memorandum of Understanding entered into by and between the _____Field Office Manager and (property owner, address) and _____ County. This agreement provides for the management of wildland fire as described in the (1) _____Field Office Fire Management Plan on the Bureau of Land Management, (2) _____ County Fire Management Plan and (3) privately owned lands described below.

Authority

Federal Land Planning and Management Act (FLPMA) of 1976 (43USC 1737-1738)
House Bill 00-1283(CRS 23-30-204, CRS 23-30-301, CRS 23-30-304, CRS 23-30-305, CRS 30-10-513, CRS 30-10-513.5 (1) (a), Part 1 of article 11 of title 30; 30-11-124.

Purpose

The Bureau of Land Management has designated lands in the _____Field Office Fire Management Plan (FMP) for a wide range of fire management response for naturally ignited wildland fires and the use of prescribed fire. These can vary from aggressive and full suppression to management of the fire for resource benefit. Protection of life and property is the first priority for a fire for resource benefit. Management of these fires, under a defined prescription, takes advantage of natural fuel barriers and topography. The objectives for management are clearly based on resource objectives. These fire management responses collectively will be known as the "appropriate management response" or AMR, and

_____County has the authority to cooperate with other governing bodies and with the state forester in the management of fires and

(Property owners' name) owns several tracts of land totaling approximately (X) acres described as follows:

(Legal Description)

Which are either surrounded by or adjacent to Bureau of Land Management lands included in _____Field Office Fire Management Plan (FMP).

It is mutually agreed as follows:

1. The Bureau of Land Management will continue fire management practices as described in the FMP for (property owners' name). The FMP requires appropriate management response (AMR) from naturally ignited (lightning) wildland fires which may occur in the area and which may, as a consequence of such decision as not to suppress, spread to said adjacent private lands.

2. _____ County supports such management actions on private land based on the framework provided in the County Fire Management Plan.

3. (Property owners' name) has reviewed and agrees with the _____Field Office Fire Management and recognizes the environmental benefits from a wildland fire to said property. They will not hold the United States responsible for any damage or injury to said property that may result from the implementation of the Fire Management Plan. This would include fire rehabilitation on private property.

4. The Bureau of Land Management agrees not to hold (Property owners name) harmless for damages, which may result from a naturally ignited (lightning) fire originating on this private land and spreading onto adjacent _____Field Office lands.

5. When such an ignition occurs, notification to respective parties will be made as soon as possible.

Duration/Renewal

This agreement will be in effect after the date of the last signature and will remain in effect for five years (or 5 years from current date here) or until canceled on sixty days written notice by either party. The landowner will immediately contact the BLM, if ownership of said property changes. On an annual basis, Little Snake Field Office will review the Fire Management Plan and make contact with private landholder. At this time if there are any changes in the Planning Objectives for the area adjacent to this private land or new concerns have arisen from the property owner, these items will be mutually discussed.

Special Provision

Officials not to Benefit

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

The parties hereto have executed this Memorandum of Understanding as of the last date written below.

_____	_____
Date	Field Office Manager
_____	_____
Date	(Property owners' name)
_____	_____
Date	(_____County Commissioner)

Fire Management Memorandum of Understanding
Wildland Fire Use

General

This Memorandum of Understanding entered into by and between the _____Field Office Manager and (property owner, address). This agreement provides for the management of wildland fire for resource benefit as described in the _____Field Office Fire Management Plan on the Bureau of Land Management and privately owned lands described below.

Authority

Federal Land Planning and Management Act (FLPMA) of 1976 (43USC 1737-1738)

Purpose

The Bureau of Land Management has designated lands in the_____ Fire Management Unit (FMU) of the _____Field Office Fire Management Plan (FMP) for a wide range of fire management response for naturally ignited wildland fires. These can vary from aggressive and full suppression to management of the fire for resource benefit (Wildland Fire Use - WFU). Protection of life and property is the first priority for a fire for resource benefit. Management of these fires, under a defined prescription, takes advantage of natural fuel barriers and topography. The objectives for management are clearly based on resource objectives. These fire management responses collectively will be known as the "appropriate management response" or AMR, and

(Property owners' name) owns several tracts of land totaling approximately _____ acres described as follows:

(Legal Description)

which are either surrounded by or adjacent to Bureau of Land Management lands included in _____Field Office Fire Management Plan (FMP).

It is mutually agreed as follows:

6. The Bureau of Land Management will continue fire management practices as described in the appropriate FMU of the FMP. The FMP requires appropriate management response (AMR) from naturally ignited (lightning) wildland fires which may occur in the area and which may, as a consequence of such decision as not to suppress, spread to said adjacent private lands.

7. (Property owners' name) has reviewed and agrees with the _____Fire Management Plan and recognizes the environmental benefits from a wildland fire to said property. They will not hold the United States responsible for any damage or injury to said property that may result from the implementation of the Fire Management Plan. This would include fire rehabilitation on private property.

8. The Bureau of Land Management agrees to hold (Property owners name) harmless for damages, which may result from a naturally ignited (lightning) fire originating on this private land and spreading onto adjacent _____Field Office lands.

9. When such an ignition occurs, notification to respective party will be made as soon as possible.

10. Funding – Nothing in this MOU shall be construed as affecting the authorities of the participants or as binding beyond their respective authorities or to require either participant to obligate or expend funds. No financial appropriations are obligated by this MOU.

11. Exhibit 1 (attached) describes the operational plan for lands covered under this agreement for wildland fires that are managed for resource benefit.

Duration/Renewal

This agreement will be in effect after the date of the last signature and will remain in effect for five years (or 5 years from current date here). Any of the parties may terminate this memorandum of understanding by providing a written notification 30 days in advance. The landowner will immediately contact the BLM, if ownership of said property changes.

On an annual basis, the _____ Field Office will review the Fire Management Plan and make contact with private landholder. At this time if there are any changes in the Planning Objectives for the area adjacent to this private land or new concerns have arisen from the property owner, these items will be mutually discussed.

Special Provision
Officials not to Benefit

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this agreement, or to any benefit that may arise there from; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

The parties hereto have executed this Memorandum of Understanding as of the last date written below.

_____ _____
Date Field Office Manager Contact Phone Number

_____ _____
Date Property owners' name Contact Phone Number

_____ _____
Date Jurisdictional Fire Authority Contact Phone Number

Exhibit 1
Operational Plan for Wildland Fires Managed for Resource Benefit

1. There will be a yearly pre-fire season meeting between the _____ BLM Field Office and the landowner to discuss management strategies for the up coming fire season. Any changes in management to the private or federal lands which would disallow wildland fire for resource benefit (Wildland Fire Use – WFU) or modify other Appropriate Management Responses (AMR) will be discussed and documented.

2. If for some reason the management of the private lands covered by this agreement does not allow for WFU for that year, and the BLM administered lands are kept under the WFU appropriate management response strategy, the BLM will agree to modify their tactics to keep wildland fire off the private lands to the greatest extent practicable.

3. The landowner grants permission to the BLM to access their land for WFU planning and reconnaissance purposes.

4. The landowner will identify any critical resources or property that needs to be protected at the pre-season meeting.

5. If an ignition occurs on BLM administered lands within two miles of the private land, the BLM will make a good faith attempt to contact the landowner by phone prior to making the go-no-go decision for a WFU.

6. If the natural ignition occurs on the private lands, the landowner and the jurisdictional fire authority will be responsible for contacting the _____ BLM Field Office with their decision for fire management strategy if the jurisdictional fire authority's resources are first on-scene.

7. If BLM resources are first on scene on a natural ignition on the private lands, the BLM will attempt to contact the landowner for a decision on management strategies. If the landowner cannot be contacted within a reasonable timeframe, the BLM will suppress the wildland fire.

8. If a WFU incident approaches within two miles of the private lands, the landowner will be notified and input will be requested from the landowner for management of the fire.

(Add additional direction as needed on a local basis)

Fire Management Memorandum of Understanding

General

This Memorandum of Understanding (MOU) is entered into by and between the _____Bureau of Land Management (BLM) Field Office Manager (FOM) and The State of Wyoming Board of Land Commissioners (Board). Other signatories to this MOU are the lessee holder for Board lands within this area, the _____ County Fire Warden with responsibility for State lands and the Wyoming State Forestry Division. This MOU provides for the management of wildland fire as described in the _____ BLM Field Office Fire Management Plan on lands owned by the BLM and the Board. Said lands are designated within Fire Management Units (FMU) because it has been determined that doing so would be a resource benefit.

Authority

Federal Land Planning and Management Act (FLPMA) of 1976 (43USC 1737-1738)
WYO. STAT. ANN. §§ 35-9-402, 36-2-108

Term of MOU. This MOU shall commence upon the day and date last signed and executed by the duly authorized representatives of the parties to this MOU and shall remain in full force and effect for five (5) years thereafter. This MOU may be terminated, without cause, by either party upon thirty (30) days written notice, which notice shall be delivered by hand or by certified mail.

Payment. No payment shall be made to either party by the other party as a result of this MOU.

Purpose. The purpose of this MOU is to meet specific land management objectives for designated lands in the FMU through the administration and supervision of naturally ignited wildland fires and the use of prescribed fire. Such management can vary from aggressive and full suppression to management of a naturally ignited fire for resource benefit. Management of resource benefit fires takes advantage of natural fuel barriers and topography. Protection of life and property is the first priority for such fires.

The Board has the responsibility for managing state trust lands.

The Board owns several tracts of land totaling approximately_____ acres described as follows:

(Legal Description)

which are either surrounded by or adjacent to BLM lands included in _____FMU which has wildland fire for resource benefit (Wildland Fire Use - WFU) as a management option.

Responsibility of Parties.

12. The BLM will continue fire management practices as described in the FMU description. The _____ Field Office Fire Management Plan (FMP) requires appropriate management response (AMR) from naturally ignited (lightning) wildland fires which may occur in the area and which may, as a consequence of a decision not to suppress, spread to said adjacent state lands.

13. The State of Wyoming supports such management actions on state land based on the values at risk identified by the Board. These values at risk will be documented in the yearly meetings and attached to this agreement (See Exhibit 1, 4).

14. The surface lessee(s) and the Wyoming State Forestry Division have reviewed and agree with the FMP and recognize the environmental benefits from a wildland fire to said property. The surface lessee(s) will not hold the United States responsible for any damage or injury to said property that may result from the implementation of the FMP, including fire rehabilitation on state lands.

15. The BLM agrees to hold the State of Wyoming harmless for damages, which may result from a naturally ignited (lightning) fire originating on the above described state lands and spreading onto adjacent _____ BLM Field Office lands.

16. Nothing in this MOU shall be construed as affecting the authorities of the parties. Nor shall this MOU be binding beyond the parties' respective authorities or as requiring any party to obligate or expend funds. No financial appropriations are obligated by this MOU.

17. When such an ignition occurs, notification to respective parties will be made as soon as possible.

18. Exhibit 1 (attached) describes the operational plan for lands covered under this MOU for wildland fires that are managed for resource benefit.

Key Officials

1. For the BLM:

Field Office Manager
_____ Field Office
(Insert Address and Phone Number Here)

2. For the Board:

Director Office of State Lands & Investments
(Insert Address and Phone Number Here)

3. For the Surface Lessee

Lessee
(Insert Address and Phone Number Here)

4. For the _____County

County Fire Warden
(Insert Address and Phone Number Here)

5. For Wyoming State Forestry Division

District Forester
(Insert Address and Phone Number Here)

Annual Review.

On an annual basis, _____the BLM Field Office will review the Fire Management Plan and make contact with Wyoming State Forestry, to discuss any changes in the management of wildland fire for the area adjacent to this state land or new concerns of the Board.

General Provisions

1. Officials not to Benefit. No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this MOU, or to any benefit that may arise therefrom.

2. Amendments. Either party may request changes in this MOU. Any changes, modifications, revisions or amendments to this MOU which are mutually agreed upon by and between the parties to this MOU shall be incorporated by written instrument, executed and signed by all parties to this MOU.

3. Applicable Law. The construction, interpretation and enforcement of this MOU shall be governed by the laws of the State of Wyoming. The courts of the State of Wyoming shall have jurisdiction over any action arising out of this MOU and over the parties, and the venue shall be the First Judicial District, Laramie County, Wyoming.

4. Entirety of MOU. This MOU, consisting of four (4) pages, and its attached exhibits represents the entire and integrated MOU between the parties and supersedes all prior negotiations, representations and agreements, whether written or oral.

5. Prior Approval. This MOU shall not be binding upon either party unless this MOU has been reduced to writing before performance begins as described under the terms of this MOU, and unless this MOU is approved as to form by the Wyoming State Attorney General or his representative.

6. Severability. Should any portion of this MOU be judicially determined to be illegal or unenforceable, the remainder of the MOU shall continue in full force and effect, and either party may renegotiate the terms affected by the severance.

7. Sovereign Immunity. The parties to this MOU do not waive their sovereign immunity by entering into this MOU, and each fully retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of this MOU.

8. Third Party Beneficiary Rights. The parties do not intend to create in any other individual or entity the status of third party beneficiary, and this MOU shall not be construed so as to create such status. The rights, duties and obligations contained in this MOU shall operate only between the parties to this MOU, and shall inure solely to the benefit of the parties to this MOU. The provisions of this MOU are intended only to assist the parties in determining and performing their obligations under this MOU. The parties to this MOU intend and expressly agree that only parties signatory to this MOU shall have any legal or equitable right to seek to enforce this MOU, to seek any remedy arising out of a party's performance or failure to perform any term or condition of this MOU, or to bring an action for the breach of this MOU.

9. Signatures. In witness whereof, the parties to this MOU through their duly authorized representatives have executed this MOU on the days and dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this MOU as set forth herein.

The effective date of this MOU is the date of the signature last affixed to this page.

_____	_____
Date	BLM Field Office Manager
_____	_____
Date	Lynne Boomgaarden, Director Wyoming Office of State Lands and Investments
_____	_____
Date	Surface Lessee
_____	_____
Date	Wyoming State Forestry Representative
_____	_____
Date	County Fire Warden

Attorney General Approval as to Form:

_____	_____
Date	Susan K. Stipe Office of State Lands and Investments' Attorney General Representative

Exhibit 1
Operational Plan for Wildland Fires Managed for Resource Benefit

1. There will be a yearly pre-fire season meeting between the _____ BLM Field Office and the State of Wyoming – Wyoming State Forestry to discuss management strategies for the up coming fire season. Any changes in management to the state or federal lands which would disallow wildland fire for resource benefit (Wildland Fire Use – WFU) or modify other Appropriate Management Responses (AMR) will be discussed and documented.

2. If for some reason the management of the state lands covered by this MOU does not allow for WFU for that year, and the BLM administered lands are kept under the WFU--appropriate management response strategy, the BLM will agree to modify their tactics to keep wildland fire off the state lands to the greatest extent practicable.

3. The State grants permission to the BLM to access their land for WFU planning and reconnaissance purposes.

4. The State will identify any critical resources or property that need to be protected at the pre-season meeting.

5. If an ignition occurs on BLM administered lands within two miles of the state lands, the BLM will make a good faith attempt to contact the District Forester by phone prior to making the go-no-go decision for a WFU.

6. If the natural ignition occurs on the state lands, the State and the jurisdictional fire authority will be responsible for contacting the _____ BLM Field Office with their decision for fire management strategy if the jurisdictional fire authority's resources are first on-scene.

7. If BLM resources are first on scene at a natural ignition fire on the state lands, the BLM will attempt to contact the District Forester for a decision on management strategies. If the District Forester cannot be contacted within a reasonable timeframe, the BLM will suppress the wildland fire.

8. If a WFU incident approaches within two miles of the state lands, the District Forester will be notified and input will be requested from the District Forester for management of the fire.

Add additional direction as needed on a local basis

Appendix C:

Short Term Impact Mitigation Plan

SECTION 2. TEMPLATE #1 SHORT TERM IMPACT MITIGATION PLAN

Greasewood Fire
SHORT TERM IMPACT MITIGATION PLAN

BLM/CRAIG DISTRICT/WHITE RIVER FIELD OFFICE
COLORADO STATE OFFICE

FIRE BACKGROUND INFORMATION

Fire Name	Greasewood
Fire Number	A39R
District/Field Office	White River Field Office
Admin Number	
State	Colorado
County(s)	Rio Blanco
Ignition Date/Cause	06/03/2004 Lightning
Date Controlled	
Jurisdiction	**Acres**
BLM	5543
State	2015
Private	256
Other	
Total Acres	7814
Cost	450,000

Type of Action (check one box below)

x	Initial Submission
	Updating or Revising the Initial Submission
	Amendment

INTRODUCTION: The fire was managed as Wildland Fire Use for resource benefit in accordance with the White River Fire Management Plan and White River Resource Land Use Plan. The fire burned a portion of the resource area's heaviest Ips Beetle infestation and consumed heavy dead and downed pinion-juniper fuel loading estimated at approximately 10 tons/acre. The fire also converted numerous PJ encroached sagebrush parks back to open meadows. The sagebrush parks that were burned will be enhanced due to the level of PJ encroachment prior to the fire, the fire provided a net benefit to these parks by removing the encroached PJ. On a landscape level fire was reintroduced to an area were at least one fire return

interval was missed and converted 7,800 acres from a fire regime and condition class III to condition class I and achieved a more mosaic mix of seral age classes within the occurring vegetation strata present within and around the fire on a landscape level.

TABLE OF CONTENTS
for Greasewood Short Term Impact Mitigation Plan

PART 1. – REVIEW, APPROVALS, and PREPARERS

BUREAU OF LAND MANAGEMENT

I. SHORT TERM IMPACT MITIGATION PLAN APPROVAL

__X__ **Approved**

_____ **Approved with Revision**

_____ **Disapproved**

s:/ Kent Walter 06/30/04

FIELD / DISTRICT MANAGER **Date**

II. FUNDING APPROVAL. For FY2004, all Short Term Impact Mitigation Plans must be approved by the National Coordinator. This may change in the future. Funding for emergency stabilization plans are approved through a memo from the approving office.

III. EMERGENCY STABILIZATION TEAM MEMBERS

Position	Team Member (Agency/Office)	Initial and Date
Team Leader	Ken Holsinger	
Operations	Ken Holsinger	
NEPA Compliance & Planning	Ken Holsinger	
Hydrologist	Caroline Hollowed	
Soil Scientist		
Cultural Resources/Archeologist	Michael Selle	
Rangeland Mgt. Specialist	Mark Hafkenschiel	
Wildlife Biologist	Ed Hollowed	
GIS Specialist	Ken Holsinger	
Other Technical Specialists	Mark Rogers/Fire Ecologist	
Resource Advisor(s) on Fire	Jed Carling	

PART 2. - SHORT TERM IMPACT MITIGATION COST SUMMARY TABLE

Impact Mitigation activities are funded from hazardous fuels funds and must be completed within 1 year of the date of control of the fire. Monitoring is planned for 3 years of date of fire control. Results of monitoring will be the basis for determining any needed re-treatments and must be requested for programming into the AWP.

Spec #	Title	Unit	Unit Cost	# of Units	Cost	Implementation Method	FY1	FY2	FY3	Total
S-1	Planning\Design Specifications	acres								
S-2	Drill Seeding	acres	31.35	146	4,577.70	Drill Seeding	4,577.70			
S-3	Aerial Seeding	acres	45.90	2921	134,075.23	Aerial Seeding	134,075.23			
S-4	Seedling Planting	each								
S-5	Noxious Weeds	acres	1.61	3100	5,000.00	Weed Spraying	5,000.00	5,000.00	2,500.00	
S-6	Protective Fencing	miles								
S-7	Cattle guard	each								
S-8	Herbicide Application	acres								
S-9	Soil Stabilization	each	444.44	9	4,000.00	Water bars/Check dams	4,000.00			
S-10	Monitoring Years 1, 2, & 3	acres	1.13	3100	3,500.00	Monitoring Studies/weed monitoring	1,500.00	500.00	500.00	
S-11	Other	acres	69.80	17	1,186.65	Broadcast seeding	1,186.65			
TOTAL COST					151,339.58		150,339.58	5,500.00	3,000.00	158,839.58

PART 3. – SHORT TERM IMPACT MITIGATION CONCERNS, DESCRIPTION AND PURPOSE OF TREATMENTS

I. CONCERNS

1) Vegetation: The fire exhibited extreme fire behavior in Reigan Gulch, Little Reigan Gulch and the upper two-thirds of Thompson Gulch. Soil moisture and live fuel moistures were low in these drainages and consequently 70-90% of the perennial grasses and forbs experienced mortality. There were established populations of cheatgrass in all of these drainages. Without seeding due to the amount of desirable perennial grass and forb mortality, cheatgrass will out-compete native vegetation and result in degraded rangeland health. There are known infestations of Leafy Spurge, Houndstongue, Mullein, Spotted and Russian Knapweed, and Black Henbane which will be released from competition and expand in size due to the removal and slow re-establishment of desirable vegetation.

2) Livestock: None, much of the area was not utilized by livestock due to a dense canopy cover of PJ that limited forage production and utilization.

3) Wildlife: None, while a significant amount of thermal cover was lost for big game, once desirable vegetation establishes there will be significantly more forage available for grazing ungulates. Nesting habitat for woodland migratory birds and raptors was lost as well.

4) T&E and Sensitive Species: No T&E wildlife species habitat was burned from this fire. Two sensitive plant species (Dudley Bluffs Bladderpod and the Piceance Basin Bladderpod) are found within the perimeter of the fire. Both species occur on steep barren Green River Shale slopes that do not have enough fuel to support fire and were not directly impacted by the fire; however some post fire increase in erosion is expected to impact these species in the absence of some short term impact mitigation.

5) Cultural Resources: Cultural surveys will need to take place prior to installing any check dams.

6) Watershed: All watersheds associated with this fire are not perennial, with the exception of Dry Fork of Piceance Creek which had approximately 0.75 miles of fire in the middle of the watershed burned, and therefore the fire will not result in long term degraded water quality. Short term higher sediment yields and accelerated erosion can be expected until vegetation reestablishes on the uplands of each watershed. Seeding the burned area will mitigate and decrease the duration of impacts to affected watersheds resulting from this fire. Initial watershed stabilization efforts were implemented by contour falling trees, utilizing incident fire personnel, in Tom Stith Draw, Beavers Draw, and the head waters of Little Reigan and Reigan Gulches.

7) Invasive Species: Reigan Gulch, Little Reigan Gulch, and a portion of Thompson Gulch were the most severely burned and there was established cheatgrass in all three watersheds. Due to low soil moisture 70-90% of the established perennial grass and forbs were killed. Without seeding much of the uplands within these watersheds can be expected to re-establish in a monoculture of cheatgrass. The sagebrush bottoms in Reigan Gulch, Little Reigan Gulch, Thompson Gulch, Greasewood Gulch, and Little Coral Gulch are at greatest risk of cheatgrass

invasion. From past experiences within the resource area these bottoms will convert to a monoculture of cheatgrass without seeding.

8) Other

II. GENERAL DESCRIPTION OF TREATMENTS

Aerial Seeding
Seed will be broadcast utilizing aircraft at a rate of 12.5 lbs/acre on approximately 2,921 acres in Reigan Gulch, Little Reigan Gulch and the upper two thirds of Thompson Gulch. (See Fire Impact Mitigation Map)

Drill Seeding
Seed will be applied at a rate of 7.5 lbs/acre utilizing a rangeland drill pulled with a dozer. This treatment will take place on 146 acres of flat draw bottoms in Greasewood Gulch, Reigan Gulch, Little Reigan Gulch, and Thompson Gulch. This treatment is more effective in the dry site channery loam soils found in these draw bottoms than broadcast seeding. (See Fire Impact Mitigation Map)

Broadcast Seeding/ATV Harrow
Seed will be applied at a rate of 7.5 lbs/acre by broadcast seeding using an ATV mounted spreader and harrowed in utilizing a six foot harrow pulled behind an ATV. This treatment will take place on 17 acres of flat draw bottoms in Little Coral Gulch. (See Fire Impact Mitigation Map)

Check Dams/Water bars
Two small check dams would be installed at the head of Reigan Gulch with two more installed in small side drainages of Reigan Gulch. Three more small check dams would be built in short drainages between Reigan Gulch and Greasewood Gulch. See Fire Impact Mitigation Map for detailed locations for the proposed dams. All dams would be built with a small dozer. For all locations no new road construction would take place the dozer would be walked into the locations. Also, 0.8 miles of unimproved roads would need to have water bars placed in them. See Fire Impact Mitigation Map for detailed locations.

Noxious Weed Detection and Control
A four person BLM weed crew will treat known infestations of Leafy Spurge, Houndstongue, Mullein, Spotted and Russian Knapweed, and Black Henbane utilizing methods and materials approved by BLM. The crew will also inventory the burn area for new infestations and treat those accordingly.

III. PURPOSE OF TREATMENTS

Aerial Seeding
The purpose of aerial seeding is to establish desirable perennial grasses and forbs on upland sites which will out-compete the invasive exotic cheatgrass and will help to provide greater soil stabilization and general watershed stabilization. Since there are 2,921 acres that experienced extreme fire behavior and the most mortality of established grasses and forbs,

field office personnel determined that aerial seeding would be the most cost effective and efficient method of applying seed on these acres. This portion of the treatment will be completed by private contract in October/November of 2004, so that the seed would be on the ground prior to prolonged period of winter snow cover. The seed would be ready to germinate when moisture became available and soil temperatures are conductive to germination.

Drill Seeding
The purpose of drill seeding is to apply seed to the channery loam soil type found in the gulch bottoms within the perimeter of this fire. The rangeland drill can apply seed below the soil surface at the proper seeding rate which will ensure greater germination rates. The gulch bottoms are very dry sites where greater germination success is essential to establish desirable grasses and forbs which will out-compete cheatgrass and other noxious weeds. This portion of the treatment will be completed by private contract using a BLM provided rangeland drill in October/November of 2004, so that the seed would be in the ground prior to prolonged period of winter snow cover. The seed would be ready to germinate when moisture became available and soil temperatures are conductive to germination.

Broadcast Seeding/ATV Harrow
The area to be broadcast seeded and harrowed using ATVs are not easily accessed with a rangeland drill and bulldozer. Also, the area is only 17 acres of dry site channery loam bottom which will be easier to access and more cost effective using this method than using a rangeland drill. This portion of the treatment will be completed by WRFO fire crew members in October/November of 2004, so that the seed would be in the ground prior to prolonged period of winter snow cover. The seed would be ready to germinate when moisture became available and soil temperatures are conductive to germination.

Check Dams/Water bars
Check dams and water bars will be utilized to help slow water flow and decrease erosion rates in short drainages or side drainages that now have no vegetation on the uplands. The drainages selected (see map) either flow out at or near structures or county roads which could result in property damage or decreased productivity. This portion would be completed as soon as possible using a private contractor to complete the work.

Noxious Weed Detection and Control
Noxious weed control will be essential to maintain and improve rangeland health, as well as check/eradicate infestations prior to establishment of viable perennial vegetation. Due to the competitive advantage that many noxious weeds have, these species will displace and prevent establishment of desirable vegetation.

PART 4. – INDIVIDUAL TREATMENT SPECIFICATIONS

Greasewood	**A39R**			
STABILIZATION				**FY-1**
S1	**Planning/Design Specifications**		**Units**	
		Personnel Services		**$**

		Planning		**$**
		Layout and Design		**$**
		GIS		**$**
		Aerial Photography		**$**
		Training		**$**
		Equipment		**$**
		Supplies/Material		**$**
		Travel		**$**
		Contract		**$**
		Total		**$**
S2	**Drill Seeding**			
		Personnel Services		**$**
		Layout and Design		**$**
		Contract Administration		**$**
		Clearances		**$**
		Equipment		**$**
		Mobility		**$**
		Drills		**$**
		Supplies/Material		**$**
		Seed	**1132 lbs seed**	**$3,277.70**
		Seed Storage		**$**
		Seed Mixing		**$**
		Other		**$**
		Travel		**$**
		Contract	**146 acres**	**$1,300.00**
		Total		**$4,577.70**
S3	**Aerial Seeding**			
		Labor		**$**
		Layout and Design		**$**
		Contract Administration		**$**
		Clearances		**$**
		Equipment		**$**
		Supplies		**$**
		Seed	**36,513 lbs seed**	**$104,075.23**
		Seed Storage		**$0**
		Seed Mixing		**$0**
		Other		**$**
		Travel		**$**
		Contract	**2921 acres**	**$30,000**
		Total		**$134,075.23**
S4	**Seedling Planting (Shrub/Tree)**			
		Labor		**$**
		Layout and Design		**$**

		Contract Administration		$			
		Clearances		$			
		Equipment		$			
		Supplies		$			
		Seedlings		$			
		Other		$			
		Travel		$			
		Contract		$			
		Total		$			
S5	Noxious Weeds (Detection and Control)				FY 2	FY 3	TOTALS
		Labor	160hrs	$4,500.00	$4,500.00	$2,000.00	$11,000.00
		Detection		$	$	$	$
		Treatment		$	$	$	$
		Monitoring		$	$	$	$
		Contract Administration		$	$	$	$
		Equipment		$	$	$	$
		Supplies		$			
		Chemical	Herbicide	$500.00	$500.00	$500.00	$1,500.00
		Travel		$	$	$	$
		Contract		$	$	$	$
		Total		$5,000.00	$5,000.00	$2,500.00	$12,500.00
S6	Protective Fence (Permanent/Temporary)						
		Labor		$			
		Layout and Design		$			
		Contract Administration		$			
		Clearances		$			
		Equipment		$			
		Supplies		$			
		Travel		$			
		Contract		$			
		Fence Removal		$			
		Total		$			
S7	Cattle guard						
		Labor		$			
		Layout and Design		$			
		Contract Administration		$			
		Clearances		$			
		Equipment		$			
		Supplies		$			
		Travel		$			
		Contract		$			

		Total		**$**			
		Labor		**$**			
		Layout and Design		**$**			
		Contract Administration		**$**			
		Clearances		**$**			
		Equipment		**$**			
		Supplies		**$**			
		Travel		**$**			
		Contract		**$**			
		Total		**$**			
		Labor		**$**			
		Clearances		**$**			
		Equipment		**$**			
		Supplies		**$**			
		Travel		**$**			
		Contract	**8 check dams/.8 miles water bars**	**$4,000.00**			
		Total		**$4,000.00**			
							TOTALS
		Labor		**$1,500.00**	**$500.00**	**$500.00**	**$2,500.00**
		Equipment		**$**	**$**	**$**	**$**
		Supplies		**$**	**$**	**$**	**$**
		Travel		**$**	**$**	**$**	**$**
		Contract		**$**	**$**	**$**	**$**
		Total		**$1,500.00**	**$500.00**	**$500.00**	
		Labor	**40hrs**	**$800.00**			
		Equipment		**$**			
		Supplies	**123lbs seed**	**$386.65**			
		Travel		**$**			
		Contract		**$**			
		Total		**$1,186.65**			

SEED LIST

Seed Name	Drill Seeding	Aerial Seeding	Seedling Planting	Total Pounds	Cost per lb	Total Costs
Indian Rice Grass (Rimrock)	1lb/acre	2lb/acre		6,005	3.69	22,158.45
Thickspike Wheatgrass (Critana)	2lb/acre	3lb/acre		9,089	2.15	19,541.35
Western Wheatgrass (Rosanaa)	3lb/acre	2lb/acre		6,331	3.39	21,462.09
Beardless Bluebunch Wheat (Witmar)	1lb/acre	3lb/acre		8,926	3.39	30,259.14
Sandberg Poa		1lb/acre		2,921	3.05	8909.05
Cicer Milkvetch	0.5lb/acre	1lb/acre		3,003	0	
Blue Phlax	0.25lb/acre	0.5lb/acre		1501	3.60	5,404.50
TOTALS	7.75lb/acre	12.5lb/acre		37,776	19.27	107,734.58

PART 5. – MONITORING PLAN

One 3x3 and Daubenmire plot would be placed in Reigan Gulch, Little Reigan Gulch and Thompson Gulch. In conjunction, an established Daubenmire plot was burned over, but will not be seeded, will be read to provide an assessment of seeding success. The plots will provide photos, cover, composition, and frequency information. These plots will be monitored for first and third years and then every five years after that. After the third monitoring cycle an analysis of monitoring trend would be conducted. Monitoring will be the responsibility of the fuels specialist and range management specialist responsible for the allotments in which the fire burned.

PART 6. – COST/RISK ANALYSIS

Treatment (add all categories) **Cost**

Revegetation.....……. $139,839.58
Protection Fence.....…..... $ 0
All Other Costs.....…..... $ 19,000.00
TOTAL.....……..... $158,839.58

Probability of Stabilization Treatments Successfully Meeting Objectives (List all treatments)

Treatments	Units	NA	%
Revegetation (overall rating)	3084 acres		90

Drill Seeding (acres)	163 acres		95
Aerial Seeding (acres)	2921 acres		75
Transplant Seedlings (acres)			
Other			
Protective Fence to Exclude Grazing (miles)			
Fence Repair to Exclude Grazing (miles)			
Soil Watershed Structures (overall rating)			
Retention dams/structures (number)	8 each		99
Ripping, contour furrows, etc. (contour tree falling)	40 acres		75
Matting, watershed cover, etc.			
Other-Clean Culverts			

COST RISK SUMMARY

The costs of the project and probability of success of the proposed treatments are compared with the risks to resource values if: 1) no action is taken, and 2) the proposed action is successfully implemented. Alternatives may be included in this analysis to assist in the selection of the treatments that will cost effectively achieve the Impact Mitigation objectives. Answer the following questions to determine which proposed Impact Mitigation treatments should be selected and implemented.

1. Are the risks to natural resources and private property **acceptable** as a result of the fire if the following actions are taken?

Proposed Action Yes |_X_| No |__| Rationale for answer: Seeding will allow perennial species to compete with cheatgrass and result in a more rapid stabilization of the effected watersheds. Soil stabilization measures will help to mitigate potential erosion events that could threaten human developments and rangeland health. Noxious weed eradication will help prevent the establishment of new and expansion of existing weeds species until desirable vegetation can adequately compete and repel noxious weed infestation.

No Action Yes |__| No |_X_| Rationale for answer: No action is not acceptable due to the high potential for cheatgrass invasion and accelerated erosion on the burn site.

Alternative(s) Yes |__| No |_X_| Rationale for answer: More extensive rehabilitation, such as additional seeding on the uplands and other gulches, would be costly and unnecessary because the remaining burned areas were not as severely burned and experienced less mortality of perennial grasses and forbs.

2. Is the probability of success of the proposed action, alternatives or no action acceptable given their costs?

Proposed Action Yes |_X_| No |__| Rationale for answer: The probability of success is very high in relation to the costs given the numerous successes on similar projects within the resource area.

No Action Yes |__| No |_X_| Rationale for answer: There will be no immediate cost; however there will be a long term cost associated with the resulting degradation due to increased potential for reburning of the site in the future, due to an increased fire return interval associated with wide scale cheatgrass infestation. There is little chance of successful revegetation associated with this alternative by natural means.

Alternative(s) Yes |__| No |_X_| Rationale for answer: Cost of more extensive rehabilitation is not warranted in relation to benefits, even though the probability of success would be high.

3. Which approach will most cost-effectively and successfully attain the ESR objectives and therefore is recommended for implementation from a Cost/Risk Analysis standpoint?

Proposed Action |_X_|, Alternative(s) |__|, or No Action |__|
Comments: The proposed action is the most cost effective in relation to the benefits.

RISK OF RESOURCE VALUE LOSS OR DAMAGE

Identify the risk (high, medium, low, none or not applicable (NA) of unacceptable impacts or loss of resources.

No Action-Treatments Not Implemented (check one)

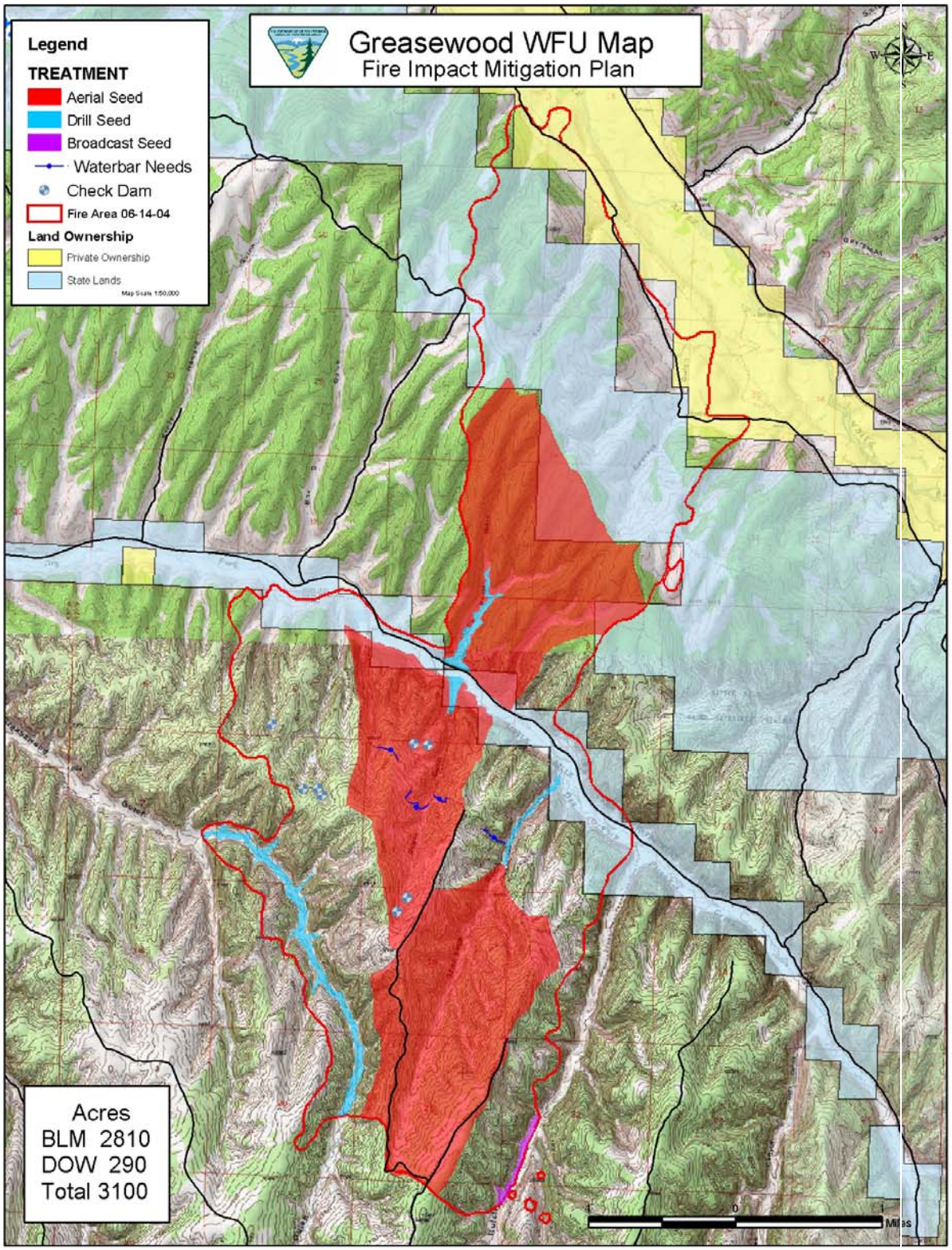
Resource Value		None	Low	Medium	High
Unacceptable Loss of Topsoil				X	
Weed Invasion					X
Unacceptable Loss of Vegetation Diversity				X	
Unacceptable Loss of Vegetation Structure			X		
Unacceptable Disruption of Ecological Processes			X		
Off-site Sediment Damage to Private Property				X	
Off-site Threats to Human Life		X			
Other-loss of Access Road Due to Plugged Culverts		X			

Proposed Action-Treatments Successfully Implemented (check one)

Resource Value		None	Low	Medium	High
Unacceptable Loss of Topsoil			X		
Weed Invasion			X		
Unacceptable Loss of Vegetation Diversity			X		
Unacceptable Loss of Vegetation Structure		X			
Unacceptable Loss of Ecological Processes		X			
Off-site Sediment Damage to Private Property			X		
Off-site Threats to Human Life		X			
Other-Loss of Access Road Due to Plugged Culvert		X			

PART 7. - MAPS (suggested; submit as appropriate)

1. Fire Perimeter and Unburned Islands of Vegetation / Colored Land Status Map
2. Fire Impact Mitigation Plan
3. Burn Severity
4. Vegetation Communities


Legend
TREATMENT
Aerial Seed
Drill Seed
Broadcast Seed
Waterbar Needs
Check Dam
Fire Area 06-14-04
Land Ownership
Private Ownership
State Lands
Map Scale 1:50,000
Greasewood WFU Map
Fire Impact Mitigation Plan
Acres
BLM 2810
DOW 290
Total 3100
1 0 1
Miles

Appendix D:

Unaweep Fire Use Module Operations Plan

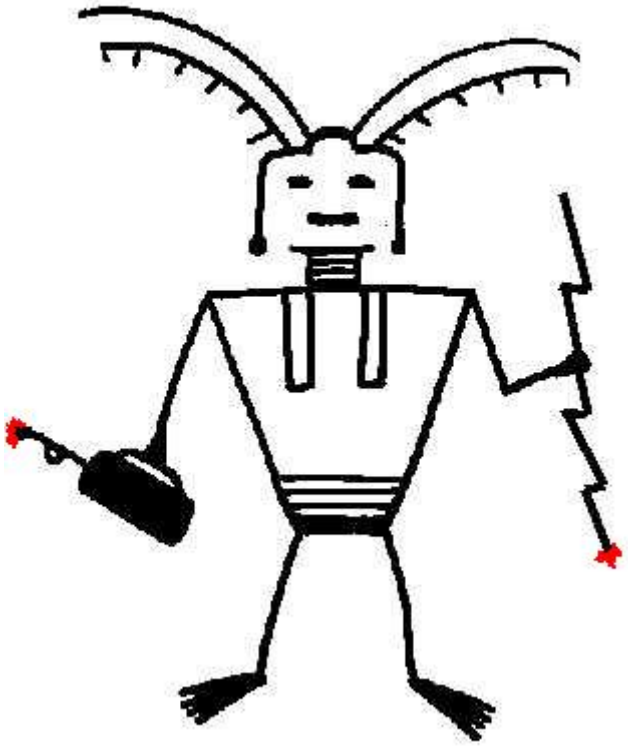
UPPER COLORADO RIVER
INTERAGENCY FIRE MANAGEMENT

USFS - White River National Forest
BLM - Grand Junction
USFS - Grand Mesa National Forest

UNAWEEP

FIRE USE MODULE

2006 OPERATIONS GUIDE



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1. Mission Statement

The mission of the Fire Use Module (FUM) program is to develop and maintain an Inter-agency resource for fire use, prescribed fire, and wildland fire suppression. The FUM will consist of multi-skilled fire professionals dedicated to implementing the National Fire Plan while providing a career pathway for employees.

2. Introduction

The Unaweep Fire Use Module (FUM) will consist of seven personnel. The purpose of the FUM is to provide land management agencies with a skilled, mobile, and mission specific workforce that is principally assigned to fire use incidents, prescribed fire projects, and wildland fire suppression incidents.

The primary mission and priority of the FUM is the implementation of fire use. The FUM is a key resource in the implementation of fire use incidents, hazardous fuels reduction, and prescribed fire projects that may include but not limited to project design, site preparation, project implementation, and project monitoring. Typically, the FUM will be available for assignment in the local, regional, and national areas on an as needed basis.

The FUM may be made available to any land management agency throughout the Rocky Mountain Area and Nationwide during the field season with support emphasis placed on those administrative units that have a limited quantity of fire management resources.

3. Personnel Management

3.1 Staffing of the FUM will consist of seven fully qualified module members. There will be an additional 1 to 3 slots open for detailers, trainees, and fill-ins to maintain a minimum module number of 7 members. The staffing dates, module positions, minimum and target qualifications are listed below.

A. The FUM will also be referenced by its home, local, or geographic name. The module will be fully staffed during the dates listed below:

- Unaweep FUM: April 18th to October 14th

The module or part of the module may be available outside of the above dates on a case by case basis.

B. Module Positions:

- One PFT Module Leader
- One PPT Assistant Module Leader
- Five Seasonal crew member positions
- One to three other detailer positions

C. Minimum Qualifications:

- Module Leader – Single Resource, ICT4, and RXI2
- Assistant – FFT1 and ICT5
- All others – FFT2

D. In addition to the minimum qualifications, other qualifications that will be present on the FUM will include:

- 1 RXI2
- 1 FALB
- 2 FEMO
- 1 FALA

E. Target qualifications include but are not limited to:

- FUM2
- RXB1 & 2
- ICT3, 4, & 5
- RXI1 & 2
- FEMO
- LTAN
- FIRB
- DIVS

Additional fire qualifications may be pursued at the discretion of each module=s and their home unit=s.

The module leader will provide all employees with a performance evaluation at the beginning, mid, and end of the year.

3.2 The home unit fire/fuels program leader has the responsibility to ensure that module personnel are fully qualified to fill specific positions on the module.

Those persons who are not either fully qualified or trainee rated to perform a particular task **will not** be available for assignment.

3.3 All module personnel **will be** red carded and **must be** able to pass the arduous level of the pack test. This is a requirement for all positions including trainees on the module. All training and experience records will be maintained and updated by the module=s home unit.

4. Financial Management

4.1 The home unit=s will be responsible for providing all necessary start up costs such as equipment, personal protective equipment, tools, and vehicles for their assigned modules and members.

4.2 At the time of mobilization, until return to the home unit, the module members will charge all time, travel, per diem, vehicle use, mileage, support costs, and overtime to the receiving unit=s project or fire charge/management code=s. Under existing national agreement, cross billing does not normally occur, but can. Under certain circumstances the field unit requesting assistance from a FUM would be required to complete an AD-672 to facilitate a timely reimbursement.

4.3 Module members are expected to spend all funds in a cost effective and responsible manner.

4.4 The module leader/assistant leader is responsible for all timekeeping and travel documentation throughout the duration of assignment. In addition, the module leader is responsible for all aspects of crew management including accident reporting, daily unit logs, monitoring documentation, and other pertinent items that are generally the assigned duties of any crew supervisor on fire management related project or incident

5. Operational Management

5.1 The scheduling of assignments for the module=s will be the responsibility of the respective home unit fire managers. In the event of scheduling conflicts, the projects will be prioritized within the respective fire management units. If the workload within a given fire management unit requires the use of additional modules, the requesting unit will place a request through normal dispatch channels for one or more modules. In the event requests for modules exceed the number of available modules, the Rocky Mountain Coordinating Group will convene the operations committee to prioritize the critical needs for the modules. Project priorities will be decided on a case by a case basis and follow the general criteria of:

- Pre-established priorities at the state or regional level.

- Limitations in prescribed fire prescription windows.
- High resource benefits or critical values to be protected.
- First come, first serve basis if all other factors are equal.

Each fire management unit is expected to actively identify, coordinate, and obtain line officer approval for prescribed fire projects that may need assistance for one or more modules.

5.2 Modules must be ordered for out of area assignments as a core, with a core consisting as a minimum of 7 individuals. Modules will not need to maintain their core personnel outside of the core season as defined in Section 3.1(A). Either the module leader, the assistant module leader, or a person designated prior to the assignment that meets the Single Resource and ICT4 qualifications as acting module leader must remain with the module at all times during an assignment.

5.3 Modules have the option of making members available for single resource assignments, especially for training assignments, provided that this practice does not compromise the operational capability and availability of the module. Request to make members available for single resource assignments must go through the fire program manager and the appropriate dispatch center. Once a module is down to the core number of 7, single resource assignments will not be an option unless positions can be back filled with fully qualified members.

5.4 Individuals who are unable to maintain availability or miss an assignment may be replaced with another individual. How, or if, a member rejoins the module will be at the discretion of the home unit fire program manager. It is the responsibility of every module member to keep their supervisor, dispatch, and the program manager informed of any changes to their availability.

5.5 The home unit program manager must be aware of and confirm all personnel movements within the module under his/her jurisdiction.

5.6 All module assignments will conform to the standard agency work/rest guidelines.

5.7 Modules committed to prescribed fire projects, wildland fire use incidents, or wildfire suppression assignments will remain assigned and unavailable for re-assignment until released by the appropriate fire officer=s. Modules may be released from a project or incident to a higher priority incident as long as re-assignment follows standard dispatch procedures.

6. Wildland Fire Use Guidelines

6.1 The primary role of the modules is to implement fire use tactical operations under the direction of a Fire Use Manager (FUM2 or FUM1). In the case of a low complexity fire that is in Wildland Fire Implementation Plan (WFIP) stage I or II, the module may independently manage the incident provided that a module member is a full qualified FUM2 and another module member is qualified to run operations, Task Force or Strike Team qualified. If these conditions do not exist, then a fully qualified FUM2 would need to direct the module=s. The module will provide technical information to the agency responsible for the incident to assist in assessing needs for national fire use teams or type 3 fire use teams.

6.2 The module may be assigned to multiple low complexity incidents while under the direction of a fully qualified FUM2 or FUM1. The module leader or assistant leader will have the final call on if the module can do multiple incidents or split into smaller groups. The factor affecting this decision the most will be qualifications and experience levels of everyone on the module.

7. Wildfire Suppression Guidelines

7.1 A secondary role of the FUM is to provide assistance when needed on wildfire suppression assignments. This could occur locally, regionally, or nationally in any position=s listed on red cards as trainee or fully qualified. The home fire program manager will evaluate and determine what role the module would be best utilized regarding suppression assignments.

8. Logistical Management

8.1 The home unit will provide the following for the modules

- Office space, phone and fax access
- Computer access with electronic communication
- Administrative support
- Cache space for equipment
- Quarters if possible

8.2 When ordering modules by ground transportation they will come equipped with the following equipment as a minimum:

- Assigned crew vehicles

- Two or more chainsaws with fuel
- Firing equipment
- Hand tools
- Five or more programmable radios
- Fire line gear and camping equipment
- Water and food for two days
- First aid kits

8.3 When ordering modules by air transportation they will come equipped with the following equipment as a minimum:

- Fire line gear and camping equipment
- Five or more programmable radios
- First aid kits

Any other gear, equipment, or project oversight must be provided by the requesting unit.

9. Dispatching and Ordering Procedures

9.1 For all assignments, the modules will be ordered and moved in accordance with standard and established dispatch channels and procedures.

10. Training and Certification

10.1 The home unit is responsible for arranging all training and refresher courses that are required to meet current red card qualifications while working towards target qualifications.

10.2 The home unit is responsible for initiating, tracking, and certifying position task books and ensure that all requirements met.

11. Safety

11.1 The module and all its members will utilize all standard safety practices and techniques to identify, evaluate, mitigate, and constantly re-evaluate incident and project situations to provide a safe working environment for everyone.

12. Performance and Accountability

12.1 The home unit fire/fuels program manager will, at a minimum, review module performance annually. If, at any time, unsatisfactory performance occurs the module will be reviewed as needed until performance returns to a satisfactory level or above.