

# LINE OFFICER DESK GUIDE FOR FIRE PROGRAM MANAGEMENT

*This Guide is sponsored by the National Forest Service Line Officer Team (LOT). It was developed by the Wildland Fire Management Research Development and Application (WFM RD&A) team with recommendations from Agency Administrators and Line Officers. Feedback is encouraged to improve the utility and function of the guide.*

*Please send user feedback to: [lineofficer@wfmrda.org](mailto:lineofficer@wfmrda.org). This document will be reviewed annually and updated as necessary.*

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Wildland Fire Management RD&A



### **2016 Updates include:**

- Refinements made for 508 compliancy (screen tips for hyperlinks, alt. text for images, table formatting)
- Old/moved web links updated
- Updated materials from the 2016 Redbook
- Added a section on WFDSS Incident Objectives
- Added a section on the Fire Planning and Fuels Management Resource Portal
- Removal of reference information from FSH 5109.19 Fire Management Analysis and Planning Handbook, which has been replaced by the Fire Management Planning Guide.
- Delegation of Authority, Leaders Intent and Briefing Package – Reference to Beta Document

### **History of the Guide:**

In approximately 2009 the National Line Officer Team (NLOT) and WFM RD&A initiated communication about the need for a Line Officer Desk Reference Guide to assist with Fire Management. WFM RD&A staff and a small group from the NLOT worked in coordination for the development of the current Line Officer Desk Reference Guide for Wildland Fire Management. The first release of the Desk Reference guide occurred in the spring of 2012.

This Line Officer Desk Reference Guide for Fire Program Management was created to aid Line Officers who oversee fire management from the preseason through the life of a fire and post fire season. The information presented in the guide is not new information, it stems directly from existing directives, policy, and guides. References to the original direction (Forest Service Manual, Forest Service Handbook, Interagency Standards and Guide aka Red Book, etc.) are provided.

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*Integrating  
science, technology  
and fire management*

**Wildland Fire Management RD&A**

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## Part 1. Preseason Guidance

### I. FIRE POLICY AND FOREST SERVICE DIRECTIVES

The “Guidance for the Implementation of Federal Wildland Fire Policy” issued February 13, 2009 ([http://www.nifc.gov/policies/policies\\_documents/GIFWFMP.pdf](http://www.nifc.gov/policies/policies_documents/GIFWFMP.pdf)) and the Interim Guidance for Wildfire Response issued May, 2010 (<http://fsweb.wo.fs.fed.us/fire/fam/firepolicy/index.htm>) provides flexibility in the management of wildfires. It also provides broad authorities in development and use of wildfire incident objectives.

There are only two types of wildland fires: wildfires and prescribed fires.

The terms “fire use fires,” “resource benefit fires,” or “suppression fires” will not be used. The agency reports activity on only these two types of fire. Manage natural ignitions to achieve desired Land and Resource Management Plan objectives when risk is within acceptable limits. A wildfire may be concurrently managed for more than one objective.

Human caused fires and trespass fires will continue to be managed under current direction (April 9, 2009 letter, FSM 5130).

Our first priority is to provide for firefighter and public safety (FSM 5100).

All wildfires must have, at a minimum, documented objectives for the protection of life and property with suppression strategies.

- Objectives can change as the fire spreads across the landscape in keeping with changing fuels, weather, and Land and Resource Management Plan standards and guides and jurisdictions. However, incorporate the potential for threat to life and property in your initial and subsequent courses of action on every long duration fire.

#### Links to federal standards and guides documents:

- Interagency Standards for Fire & Aviation Operations (Red Book): [http://www.nifc.gov/policies/pol\\_ref\\_redbook.html](http://www.nifc.gov/policies/pol_ref_redbook.html)
- Guidance for Implementation of Federal Wildland Fire Management Policy (2009): [http://www.nifc.gov/policies/policies\\_documents/GIFWFMP.pdf](http://www.nifc.gov/policies/policies_documents/GIFWFMP.pdf)
- Interim Guidance for Wildfire Response (2010): <http://fsweb.wo.fs.fed.us/fire/fam/firepolicy/index.htm>
- National Wildland Fire Coordinating Group Memorandums Website: <http://www.nwcg.gov/executive-board/correspondence>
- Forest Service Manual 5100- Fire Management. Select Directives from the left hand menu. Log in to E-Authentication to access current FS directives: <http://fsweb.wo.fs.fed.us>
- Forest Service Fire and Aviation Management Doctrine: <http://www.fs.fed.us/fire/doctrine/index.html>
- Forest Service Forest and Rangelands website: <http://www.forestsandrangelands.gov>
  - Includes Cohesive Strategy and Quadrennial Fire Review (QFR) pages
- Wildland Fire Decision Support System [http://wfdss.usgs.gov/wfdss/WFDSS\\_Home.shtml](http://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml)

## **A. Fire Management- Preparedness- 5120 FSM**

Fire management preparedness includes all fire management activities planned and accomplished in advance of wildland fire ignition to ensure safe, efficient, effective management action. Activities include preparedness planning; fire detection; dispatching fire management resources; communication systems; rating of fire danger; fire weather monitoring; wildland fire suppression; planning for wildland fire use; maintaining fire records including tabular and spatial data; and training and qualification. Related direction is contained in references FSM 5108.

### **1. 5120.41 – Deputy Chief, State and Private Forestry**

The Deputy Chief shall approve or disapprove all national level preparedness plans.

### **2. 5120.42 – Director, Fire and Aviation Management Staff, Washington Office**

The Director is responsible to plan and organize the national preparedness program in coordination with other federal and state agencies by:

1. Coordinating National level dispatching activities through the National Interagency Coordination Center (NICC) in Boise, Idaho (FSM 5123).
2. Developing a supplemental national mobilization guide (FSM 5123.2),
3. Developing a national-level preparedness plan (FSM 5121),
4. Supporting the National Fire Danger Rating System (NFDRS) and Remote Automatic Weather Station (RAWS) network (FSM 5125),
5. Providing oversight of the operation and maintenance, as well as coordination with the National Interagency Coordination Center (NICC) at Boise, Idaho, of the following activities:
  - a. The National Fire Danger Rating System hosted in WIMS.
  - b. The Remote Automated Weather Station (RAWS) network.
  - c. Forest Service automated transmittal of weather data.
  - d. The National Interagency Fire Management Integrated Data Base (NIFMID).
6. Conducting preparedness reviews before and during fire season (FSM 5121).
7. Maintaining a Service wide wildland fire and prescribed fire training and qualification system (FSM 5126).
8. Reviewing and updating National cooperative agreements with Federal partners:
  - a. Department of Homeland Security.
  - b. Environmental Protection Agency.
  - c. National Oceanic and Atmospheric Administration (NOAA).
  - d. Department of Defense (DOD).

### **3. 5120.43 – Regional Foresters**

The Regional Forester is responsible to:

1. Establish and operate Geographic Area Coordination Centers (GACC) in cooperation with interagency cooperators (FSM 5123.1).

2. Develop and implement Geographic Area Mobilization Guides (FSM 5123).
3. Coordinate GACC activities with the National Interagency Coordination Center (NICC).
4. Provide a regional focal point in the support, management and oversight of the Fire Danger Rating Operating Plans, NFDRS and the RAWS program as they apply to their geographic area (FSM 5124, 5125).
5. Designate 1 or 2 individuals to approve Pocket Cards developed within the Region. Once identified, forward names of these individuals to the System Analyst, National Weather Information Management System (WIMS) in Boise, Idaho.
6. Supplement FSH 5109.17, pursuant to FSM 1103 and 1104, when State or local laws or regulations require additional standards. Examples include requirements related to blood borne pathogens, first responder, air quality regulations, and hazardous materials. Ensure that these supplements are prepared only on a Regional basis.

#### **4. 5120.44 Regional Directors, Fire and Aviation Management**

Regional Directors, Fire and Aviation Management, are responsible to:

1. Plan, organize, and implement a Regional fire management program. The program must be documented in a mobilization guide and preparedness plan, which must include:
  - a. Provisions for preparedness reviews before and during fire season.
  - b. A fire management training and qualification program.
2. Manage assigned national shared resources (smokejumpers, Interagency Hotshot Crews).
3. Ensure submission of a daily Interagency Situation Report (SIT) to the Geographic Area or National Interagency Coordination Center (NICC) from May to October; a weekly SIT from November through April; and a SIT whenever activity warrants one.
4. Ensure daily processing of National Fire Danger Rating System (NFDRS) through the Weather Information Management System (WIMS) during local fire season, according to established timelines.
5. Ensure that each National Forest has an approved Fire Danger Rating Operating Plan in place.
6. Ensure that regional personnel are assigned specific responsibilities for the Region's fire weather program management, coordination, and cooperation with other agencies. These duties should primarily include the NFDRS, RAWS and WIMS.
7. Ensure that NFDRS and other weather stations meet the standards provided in the NWCG NFDRS Weather Station Standards found in PMS 426-3 and referenced in FSM 5108 in support of wildland fire management activities (FSM 5125.1).
  - a. Identify an appropriate number of NFDRS and other weather stations that provide daily weather observations on a year round basis.
  - b. Document the NFDRS and other weather stations identified in a above.
8. Develop a joint Annual Operating Plan for fire weather services with the National Weather Service or local forecast offices that provide fire weather support.
9. Ensure that training is available to support all aspects of the Regional Fire Weather and Fire Danger program.
10. Determine the number of qualified personnel needed for the Region's expected fire, aviation, and emergency management needs.

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## 5. 5120.45 – Forest Supervisors

Forest Supervisors are responsible to:

1. Plan, organize, and implement a preparedness program that is documented in the Fire Management Plan (FMP) for the National Forest. (Reference FSH 5109.19, Fire Management Analysis and Planning, Chapter 50 – Fire Management Planning).
2. Ensure that the plan is adjusted annually to reflect current conditions, budget, or other significant considerations.
3. Ensure that employees are trained, certified and available to participate in the wildland fire program locally, regionally, and nationally as the situation demands. Support and make available employees with operational, administrative, or other skills in the wildland fire program as necessary.
4. Review and update all cooperative wildland fire management agreements (FSM 3170 and 5170). Include this information in local mobilization plans.
5. Establish and operate local dispatch centers (FSM 5123.1)
6. Encourage establishment of interagency dispatch centers where possible.
7. Develop and implement local Mobilization Guides (FSM 5123.2).
8. Develop and implement local dispatch operating guides or handbooks (FSM 5123.3).
9. Ensure that adequate hardware, software, qualified personnel, and facilities are available to support the RAWS network, operation and processing of the National Fire Danger Rating System.
10. Develop and maintain a Fire Danger Rating Operating Plan, in conjunction with neighboring National Forests and cooperators, to document specific preparedness actions to be implemented at appropriate NFDRS index levels. Additional details are in the Interagency Standards for Fire and Fire Aviation Operations referenced in FSM 5108.
11. Perform analysis to determine the appropriate NFDRS indexes and ranges of NFDRS index values to signal the need to implement various fire management activities.
12. Process NFDRS through WIMS according to prescribed timelines based on local fire season, as defined in the Fire Danger Rating Operating Plan (daily: 30-days pre-fire season, during fire season, and 30-days post-fire season).
13. Document fire danger rating based decision processes in the Fire Management Plan.
14. Obtain Regional certification for Fire Danger Pocket Cards.
15. Distribute Pocket Cards to each fireline supervisor on Type 3, 4, and 5 wildfires.
16. Post the cards on the National Wildfire Coordinating Group (NWCG) web site at: <http://fam.nwcg.gov/fam-web/pocketcards/>



17. Designate a Forest RAWS coordinator (National Fire Danger Rating System Weather Station Standards, PMS 426-3, and FSM 5108).
18. Ensure NFDRS is processed in WIMS daily during fire season while adhering to prescribed timeframes.
19. Ensure preparation of individual training and development plans based on individual training needs and previous experience (FSM 6141.03).
20. Ensure employees meet all applicable training, experience, and other qualification standards prior to certification for wildland fire positions (FSM 5126.1 and FSH 5109.17).
21. Ensure that employees are trained, certified and available to participate in the wildland fire program locally, regionally, and nationally as situation(s) demands.
22. Ensure that employees are mobilized only in wildland fire positions for which they are qualified.
23. Ensure that supplements to the 5109.17 are recommended to the Regional Forester. Forest Supervisors shall not supplement FSH 5109.17.
24. Designate Administratively Determined (AD) hiring official(s). In designating AD hiring official(s), ensure those designated are fully trained in:
  - a. Provisions of the AD pay plan.
  - b. Procedure and forms for documenting AD hires.
  - c. Qualification requirements. AD's certified by the National Forest shall adhere to the qualification requirements contained in the FSH 5109.17.
  - d. Recordkeeping requirements.
  - e. Annual AD salary rates.

#### **6. 5120.46 – District Rangers**

District Rangers are responsible to:

1. Ensure a Fire Prevention and Response Plan is prepared (FSM 5121.3).
2. Maintain an organization that is able to implement the actions defined in the Fire Management Plan within budget capability.
3. Implement the Fire Management Plan. [Now Spatial Fire Planning and Fire Management Reference System, 2016]

#### **7. Additional Specific Administrator Responsibilities for Fire and Aviation at the Field Level**

The Chapter 5 in the Red Book provides additional information regarding Responsibilities, Preparedness, Suppression, Responsibilities and Oversight, Risk Management Framework, Safety, Fuels, Prescribed Fire, and Fire Management Positions.

## **B. Fire Management- Wildland Fire Suppression- 5130 FSM**

### **1. 5130.41 – Washington Office, Director, Fire and Aviation Management Staff**

The Washington Office, Director, Fire and Aviation Management, through the National Interagency Coordination Center (NICC), has the responsibility to coordinate all requests for national shared resources and overhead personnel from resources outside the requesting region. Procedures for mobilization and demobilization of resources are contained in the National Interagency Mobilization Guide, NFES 2092 (FSM 5108).

### **2. 5130.42 – Deputy Chiefs, Regional Foresters, Area Directors, Forest Supervisors, and District Rangers**

The deputy chiefs, regional foresters, area director, forest supervisors, and district rangers have the responsibility to ensure that:

1. Employees under their supervision are appropriately trained and are made available as needed to support wildland fire suppression.
2. Employees with supervisory or managerial responsibilities in wildland fire management stay abreast of current fire suppression information, such as factors affecting wildland fire behavior, wildland fire suppression management and organization, contents of agency and interagency wildland fire management directives; fire management plans; and economic and risk analysis.
3. The assigned line officer declares each wildfire out.
4. All fire entrapments are promptly and aggressively investigated (FSM 5130.3).
5. Fatigue in firefighters and other wildland fire suppression personnel is identified and appropriately addressed (FSH 5109.34).
6. Employees are mobilized in wildland fire positions for which they are qualified pursuant to the Fire and Aviation Management Qualifications Handbook (FSH 5109.17).
7. An investigation team is appointed for any accident with serious potential or serious consequences that are not investigated by a Chief's Office or Washington Office appointed team. This includes single fatalities, serious injuries or illnesses, major property damage, aircraft accidents, and incidents with serious potential.
8. Accident review boards are convened as necessary (FSM 6732.3).

### **3. 5130.43 – Forest Supervisors and District Rangers**

In addition to the responsibilities set out in FSM 5130.42, Forest Supervisors and District Rangers have the responsibility to:

1. Make the safety of firefighters, other personnel, and the public the highest priority in wildland fire suppression activities (FSM 5130.3).
2. When a potentially life-threatening situation may exist, use their authority to supersede natural and cultural resource considerations and constraints to provide for the safety of firefighters, other personnel, and the public (FSM 5130.3).
3. Annually convey responsibilities, expectations, and authorities of Type 3, 4, and 5 incident commanders to:
  - a. Provide for safety and welfare of all personnel and the public.
  - b. Develop and implement viable strategies and tactics.

- c. Monitor effectiveness of planned strategy and tactics.
  - d. Execute suppression actions when and where they are safe and effective.
  - e. Ensure that all firefighting actions are in full compliance with the Ten Standard Fire Orders and that the mitigation of applicable Eighteen Watch Out Situations has been accomplished (FSH 5109.32a).
  - f. Immediately delay, modify, or abandon firefighting on any part of a wildland fire where strategies and tactics cannot be safely implemented.
  - g. Maintain command and control of all firefighting resources.
4. Ensure that supplemental inspections for safety and health hazards, including compliance with the Ten Standard Fire Orders and mitigation of the Eighteen Watch Out Situations (FSH 5109.32a), are documented in the incident records on a minimum of 10 percent of the unit's Type 3, 4, and 5 wildland fires. (See FSH 5109.17 for an explanation of Type 1-5 wildland fires.)
  5. Ensure that incident commanders on Type 1, 2, and 3 wildland fires have no collateral duties, except for those of unfilled command and general staff positions as described in the Fireline Handbook (FSH 5109.32a).
  6. Assign an individual from the local unit to provide oversight to administrative and financial activities and to ensure fiscal integrity; to assign an incident business advisor (IBA) to all Type 1 or complex incidents; and to ensure IBA oversight on Type 2, 3, 4, and 5 incidents. All wildfires projected to exceed \$5 million require the assignment of an incident business management advisor. The incident business advisor reports directly to the responsible line officer or agency administrator.
  7. Conduct a complexity analysis of fires at the time of initial size-up and thereafter, as appropriate, to assure the qualifications of the assigned incident commander are commensurate with the complexity of the incident.
  8. Regularly monitor operations for effectiveness, and take action when there is recognition of exceptional or problematic employee performance.
    - a. In the event of firefighter misconduct or serious violation of safety standards identified, forest supervisors shall convene a panel of fire operations experts to evaluate and document the involved individual's decisions and performance against currently accepted fire operations policy and principles for fire operations. Forest supervisors shall implement measures, such as qualification decertification, additional training, or administrative action, and so forth, as necessary to correct any identified safety performance issues.
    - b. Both positive reinforcement and discipline will be based on individual behavior as measured by: adherence to the rules; appropriate application of doctrine, principles and guidelines; execution of responsibilities commensurate with role; and appropriate use of available information.
    - c. Administrative actions are based on agreed to and known distinctions between acceptable and unacceptable behavior, on agreed to and known distinctions between errors and willful violations.

#### **4. 5130.44 – District Rangers**

In addition to the responsibilities set out in FSM 5130.42 and 5130.43, district rangers have the responsibility to ensure accomplishment of after-action reviews as described in the Incident Response Pocket Guide (FSM 5108) for all Type 3 fires and for selected Type 4 and 5 fires.



## **C. Wildland Fire Management- Hazardous Fuels Management and Prescribed Fire – 5140 FSM**

### **1. 5140.41 – Deputy Chief, State and Private Forestry**

The Deputy Chief will communicate with the Regional Foresters to establish priorities and create a shared vision for the hazardous fuels management and prescribed fire program.

### **2. 5140.42 – Washington Office, Director, Fire and Aviation Management**

The Director, Fire and Aviation Management must coordinate implementing hazardous fuels management and prescribed fire program by:

Collaborating with Federal and non-Federal partners to:

1. Develop qualification standards for personnel implementing hazardous fuels management and prescribed fire programs;
2. Develop national standards and procedures for planning, establishing program priorities, and implementing hazardous fuels management and prescribed fire programs.
3. Recommend to the Deputy Chief, State and Private Forestry, national strategies, program priorities, and implementing measures to attain the National Cohesive Strategy vision "To safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources: and as a Nation, live with wildland fire."
4. Develop, provide oversight, and maintain systems to monitor the impacts and effectiveness of hazardous fuels management and prescribed fire programs to achieve Agency goals and objectives.

### **3. Regional Foresters**

Regional Foresters must:

1. Establish direction that supports the risk-based, strategically planned, prioritized, and cost-effective application of hazardous fuels management and prescribed fire practices to achieve Land and Resource Management Plans objectives.
2. Ensure that Forests and Grasslands coordinate planning and implementation of hazardous fuels management and prescribed fire practices with State and local cooperators and partners.
3. Manage and provide oversight of the regional hazardous fuels management and prescribed fire program and ensure that Forests and Grasslands implement hazardous fuels management and prescribed fire practices in compliance with National and Regional policies and standards.

### **4. 5140.44 – Regional Directors, Fire and Aviation Management**

Regional Directors, Fire and Aviation Management must:

1. Coordinate and provide oversight of the regional hazardous fuels management and prescribed fire program to monitor Forests and Grasslands compliance with National and Regional fire management policies and standards.
2. Coordinate the Regional hazardous fuels management and prescribed fire program with the National program, ensuring accurate and timely reporting of all hazardous fuels management and prescribed fire activity.

Line Officer Desk Guide for Fire Program Management

## 5. 5140.45 – Forest Supervisors

Forest Supervisors must:

1. Establish fire management direction in the Land and Resource Management Plan to integrate the role and use of wildland fire and hazardous fuels management in defining and achieving resource objectives.
2. Ensure that the Fire Management Reference System (see the Fire Management Planning Guide, <http://fsweb.wo.fs.fed.us/fire/fmp/>) is current and accurately reflects hazardous fuels management, wildfire response and prescribed fire implementation procedures and standards (FSM 5141).
3. Ensure a fuel treatment effectiveness assessment is conducted on all wildfires which start in or burn areas where hazardous fuels were treated (including treatments by wildfire) (see FSM 5144).

## 6. 5140.46 – District Rangers

District Ranger must:

1. Integrate the role and use of wildland fire and establish fire management direction to meet resource objectives in the Land and Resource Management plan and other applicable forest-level plans.
2. Assess conditions, plan, and implement a fuels program meeting National standards and Land and Resource Management Plan objectives.
3. Collaborate with State and local partners to coordinate hazardous fuels management and prescribed fire projects and activities.

## D. USDA Forest Service Wildland Fire and Aviation Program Organization and Responsibilities – Red Book Chapter 5

### 1. USFS Approval Authority

The agency administrator authority is based on the incident type as directed in Chapter 5 of the Red Book (See Table 1). Agency Administrators must approve and publish decisions in WFDSS and issue delegations of authority to the Incident Commander. The Agency Administrator authority is based on incident type.

Table1. USFS Decision Approval by Incident Type, Red Book Chapter 5

Incident Type	USFS Approval*
Type 1	Regional Forester level with National oversight
Type 2	Forest Supervisor level with oversight by the Regional Forester
Type 3, 4, 5	District Ranger level with oversight by the Forest Supervisor



Incident Type	USFS Approval*
	This authority may be delegated to an Agency Administrator who meets wildfire response certification requirements.

\*Authority may be retained at the Regional Forester level.

## 2. Agency Administrator Certification

Chapter 5 of the Red Book provides specific agency guidance on Agency Administrator certification. Direction states that Agency Administrator evaluation will cover training, background & experience, and demonstration of understanding of concepts and principles. Three levels of certification are described: Working level, Journey level, and Advanced level. A coaching and shadowing program is to be administered by each region. Regional Foresters are accountable for certification of Line Officers.

Agency Administrator Core competencies:

- Risk Management
- Incident management processes
- WFDSS and other decision support tools
- Social, political economic impacts
- Collaboration with partners and stakeholders

Appendix 1 contains the Hubbard Memo 2015 (Agency Administrator Coach-Shadow Program), Agency Administrator Coach Shadow Guide, Pathways Diagram and Learning Action Plan.

## E. Wildfire Risk and Complexity Assessment- Red Book Chapter 11

The National Wildfire Coordinating Group has adopted the Risk and Complexity Assessment (RCA) form as a replacement for the Incident Complexity Analysis and the Organizational Needs Assessment form. The RCA assists personnel with evaluating the situation, objectives, risks, and management considerations of an incident and recommends the appropriate organization necessary to manage the incident. The Risk and Complexity Assessment is found in Appendix E of the Red Book.

The RCA also includes common indicators of incident complexity to assist firefighters and managers with determining incident management organizational needs. These common indicators are found in Appendix F of the Red Book. The RCA also includes common indicators of incident complexity to assist firefighters and managers with determining incident management organizational needs. These common indicators are found in Appendix F of the Redbook.

The RCA is also available at: <http://www.nwccg.gov/publications/210>

NWCG memorandum #015-2013, Adoption and Release of the Risk and Complexity Assessment: <http://www.nwccg.gov/sites/default/files/memos/eb-m-13-015.pdf>

## F. Risk Management

Sound risk based decision making relies on identifying reasonable objectives for protection of critical values at risk, while considering the amount and quality of exposure to firefighters and probability of success. The decisions made by agency administrators on wildfires have the potential to affect human

life, private property, and values far outside the boundaries of their administrative unit in addition to the land base they are charged with managing. These decisions may well be the most critical (and criticized) decisions agency administrators will make in the course of their careers, and, consequentially, the decisions must be made based on sound risk management and the best information available to support the decisions. For more information refer to the following document “Decision Making for Wildfires – A Guide for Applying a Risk Management Process at the Incident Level”, hosted on the following site: [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr298.pdf](http://www.fs.fed.us/rm/pubs/rmrs_gtr298.pdf)

Also see FSM 5103.1 Risk Management and Risk Reduction:

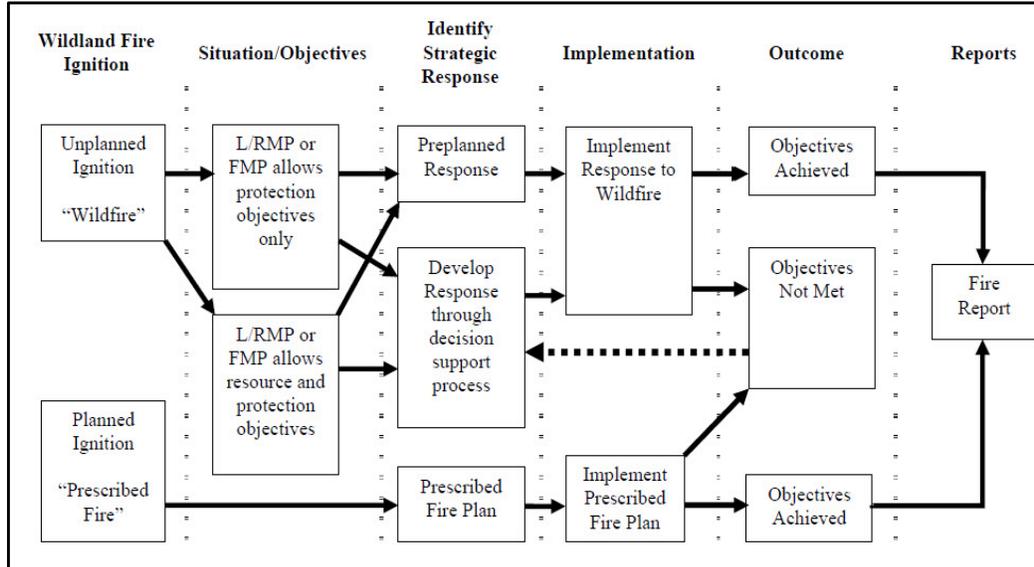
1. Firefighter and public safety is the first priority in every fire management activity. The wildland fire management environment is complex and possesses inherent hazards that can---even with reasonable mitigation---result in harm. In recognition of this fact, we are committed to the aggressive management of risk.
2. Analyze, communicate, and manage risks and uncertainties relating to fire management activities as they relate to the consequences of either doing or not doing an activity.
3. Where human life is immediately at risk or there is a clear emergency, and they are capable of assisting without undue risk to themselves or others, agency employees will respond appropriately.
4. To maximize effectiveness and minimize confusion, formulate and communicate clear, uncomplicated plans and concise orders.
5. Give to every incident and activity a risk-informed, effective, and efficient response.

## **G. Wildfire Decision Making**

The following flow chart (Figure 1) is a visual representation demonstrating how managers might work through the decision process for an ignition regardless of the source. Management actions depend on the provisions in the approved Land, Resource and Fire Management Plan. The chart is generally applicable to most agencies' fire management programs. However, specific exceptions may exist.

“Guidance for Implementation of Federal Wildland Fire Management Policy” 2009.

Figure 1. Flow Chart of Decision Process



The Risk Management Cycle is discussed in RMRS GTR-298WWW Decision Making for Wildfires: A Guide for Applying a Risk Management Process at the Incident Level, and is a useful decision reference [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr298.pdf](http://www.fs.fed.us/rm/pubs/rmrs_gtr298.pdf)

## H. Incident Objectives and Requirements

Examination of wildland fire incident decisions (in WFDSS) revealed that most Incident Objectives are written generally enough that they could apply to any fire in the country. This makes them of little use to incident management teams in developing strategies and tactics to achieve an agency administrator's intent for managing a specific fire and for agency administrators seeking to clarify the objectives they want accomplished. Similarly, Strategic Objectives and Management Requirements, established from forest plans, are the basis for Incident Objectives and Incident Requirements but are rarely written with wildland fire specificity. This decreases the likelihood that NEPA-based management direction is adequately implemented on a wildfire or as intended. It also increases the likelihood of additional risk to firefighters with marginal benefit.

Resources and support are available for Agency Administrators and fire managers. The WFM RD&A Line Officer Resources webpage, [http://www.wfmrda.nwcg.gov/line\\_officer\\_resources.php](http://www.wfmrda.nwcg.gov/line_officer_resources.php), provides examples and guidance for writing good Incident Objectives and Requirements.

- Creating Incident Specific Objectives in WFDSS, [http://www.wfmrda.nwcg.gov/docs/\\_Objectives\\_&\\_Example\\_Fires/CreatingIncidentSpecificWFDS\\_SObjectives\\_201510.pdf](http://www.wfmrda.nwcg.gov/docs/_Objectives_&_Example_Fires/CreatingIncidentSpecificWFDS_SObjectives_201510.pdf), describes some best practices for creating incident specific objectives.
- USDA FS Briefing Paper, [http://www.wfmrda.nwcg.gov/docs/\\_Line\\_Officer\\_Guide/Incident\\_Objectives\\_Project\\_BP\\_May\\_27\\_2015.pdf](http://www.wfmrda.nwcg.gov/docs/_Line_Officer_Guide/Incident_Objectives_Project_BP_May_27_2015.pdf), provides recommendations and examples for improving Incident Objectives.
- White Paper Improving WFDSS Incident Objectives and Incident Requirements and Relaying Leader's Intent, [http://www.wfmrda.nwcg.gov/docs/\\_Line\\_Officer\\_Guide/Writingincidentobjectives\\_LeadersIntent\\_WhitePaper\\_July2015.pdf](http://www.wfmrda.nwcg.gov/docs/_Line_Officer_Guide/Writingincidentobjectives_LeadersIntent_WhitePaper_July2015.pdf), explains how Objectives, Requirements, Course of Action, Rationale are related and provides suggestions for improving the understanding of leader's intent. It also

helps IMTs understand how best to provide feedback to AAs to clarify leader's intent and fire priorities.

## II. FIRE PLANNING AND ANNUAL PREPAREDNESS

### A. Spatial Fire Planning and Fire Management Reference System

The Forest Supervisor shall review, revise as needed to reflect the changes necessary to implement the fire management program, and approve the fire management plan annually by February 1, and provide a copy to the Regional Forester.

Effective January 5, 2015 the FSH 5109.19 Fire Management Analysis and Planning Handbook has been removed in its entirety, as it has become obsolete due to changes in policy. All current information related to the handbook can now be found in the Fire Management Planning Guide:  
<http://fsweb.wo.fs.fed.us/fire/fmp>.

By the 2016 fire season, Forest Service FMPs will be replaced with a combination of enhanced Spatial Planning contained in the Wildland Fire Decision Support System (WFDSS) and the Fire Management Reference System (FMRS), a collection of plans required for fire program management, such as aviation, operations, dispatch, and fire danger operating plan products. Fire Management Planning will be a continuing effort to ensure that guidance represented spatially in WFDSS and the FMRS are consistent with LRMP direction, reflecting available fire response options to move from current to desired conditions.

Current Federal Fire Policy states that every burnable acre of federally-managed land should have a Fire Management Plan (FMP). The Policy intent is to ensure that the management of wildfire for resource objectives is considered along with suppression options, as allowed by LRMP direction. The LRMP, already compiled with public input using National Environmental Policy Act (NEPA) procedures, is the guide for fire response. To streamline implementation of the Federal Fire Policy in maintaining and improving the conditions of fire-adapted landscapes in accordance with the LRMP desired conditions, the FS will phase out the use of narrative FMPs and transition to spatial fire planning and a Fire Management Reference System (FMRS). This new planning process is intended to help fire managers more fully implement their fire management programs at a landscape scale, a principle of the Cohesive Strategy.

A spatial planning process will be a better tool to implement the LRMP than a narrative FMP and meet the intent of Federal Wildland Fire Policy because it will visually represent LRMP direction across the landscape, which is helpful for collaboration with adjoining land managers and decision making for incident management. FS FMPs will be replaced with a combination of enhanced Spatial Planning contained in the Wildland Fire Decision Support System (WFDSS) and the FMRS, a collection of plans required for fire program management, such as aviation, operations, dispatch, and fire danger operating plan products. Fire Management Planning will be a continuing effort to ensure that guidance represented spatially in WFDSS and the FMRS are consistent with LRMP direction, reflecting available fire response options to move from current to desired conditions.

Assistance in developing the FMRS and spatial planning in WFDSS is available from Regional Fire Planners and the Wildland Fire Management Research Development and Application group (<http://www.wfmrda.nwcg.gov>).

Additional information regarding Fire Management Planning including policy and implementation, definitions, and reporting can be found in the Red Book Chapter 9: Fire Management Planning.



For information on utilizing the Spatial Fire Planning method in WFDSS, see the WFDSS Spatial Fire Planning Guide located on the WFDSS Training page [http://wfdss.usgs.gov/wfdss/WFDSS\\_Training.shtml](http://wfdss.usgs.gov/wfdss/WFDSS_Training.shtml).

## B. Preparedness

Redbook Chapter 10: Fire preparedness is the state of being ready to provide an appropriate response to wildland fires based on identified objectives and is the result of activities that are planned and implemented prior to fire ignitions. Preparedness requires:

- Identifying necessary firefighting capabilities;
- Implementing coordinated programs to develop those capabilities;
- A continuous process of developing and maintaining firefighting infrastructure;
- Predicting fire activity
- Implementing prevention activities;
- Identifying values to be protected;
- Hiring, training, equipping, pre-positioning, and deploying firefighters and equipment;
- Evaluating performance;
- Correcting deficiencies; and
- Improving operations.

Preparedness activities should be focused on developing interagency response capabilities that will result in safe, effective, and efficient fire operations aligned with risk-based fire management decisions.

Preparedness activities will be consistent with direction in the approved Land and Resource Management Plan (LRMP) and in the Fire Management Plan (FMP) [**for FS Spatial Fire Planning and Fire Management Reference System**].

Preparedness plans should include, but are not limited to:

- Fire Danger Operating Plan
- Preparedness Level Plan
- Initial Response/Pre-planned Dispatch Plan
- Step-up/Staffing Plan
- Fire Prevention/Mitigation Plan (as specified by agency requirements)
- Closure/Restriction Plan (as specified by agency requirements)

Chapter 10 of the Red Book provides more detailed information regarding preparedness.

## C. Aviation Plans

For further direction, see FSM 5719.04a and 5720.43.

The Washington Office, Director of Fire and Aviation Management, has the many responsibilities in regards to aviation management (see directives FSM 5719.04a and 5720.43). These responsibilities may be delegated to the Assistant Director of Fire and Aviation Management (Aviation), and include developing and maintaining an Aviation Management Plan that is updated and supplemented annually at the regional/area and forest/station levels (FSM 5711.04).

The plan establishes general operational procedures policy for aviation activities supporting land management and wildfire management programs within the jurisdiction of the respective agency.

Additional aviation plans that would need Line Officer approval include but are not limited to the following:

- Helibase plans
- Rappel plans
- Helicopter Operations and Safety plans
- Interagency Mishap plan
- Tactical Operations plan

The Forest Service Fire and Aviation Management site has a variety of resources including directories, Manual and Handbook references, Guides and Publications, and forms.

[http://www.fs.fed.us/fire/aviation/av\\_library/](http://www.fs.fed.us/fire/aviation/av_library/).

The Forest Service Fire and Aviation Management Safety Management Systems site provides links to many aviation safety resources, such as aviation safety library, operational risk assessments, safety summaries, etc. [www.fs.fed.us/fire/av\\_safety/index.html](http://www.fs.fed.us/fire/av_safety/index.html).

Chapter 16 of the Red Book discusses Aviation Operations and Resources.

#### **D. Preparedness Review Checklists**

Ensure fire and aviation preparedness reviews are conducted each year and include the key components of the record of decision for the nationwide aerial application of fire retardant on National Forest System land.

Chapter 5 of the Red Book provides brief guidance on FS organizational preparedness.

The NIFC website ([http://www.nifc.gov/policies/pol\\_ref\\_intgncy\\_prepcheck\\_USFS.html](http://www.nifc.gov/policies/pol_ref_intgncy_prepcheck_USFS.html)) provides access to the Interagency Preparedness Review Checklists on the following:

- Agency Administrator
- Geographic Area Coordination Center
- Safety Officer
- Aviation Base Review
- Dispatch
- Interagency Hotshot Crew
- Helicopter Module
- Hand Crew non-IHC
- Fire Management Administrator
- Aviation Management
- Training
- Individual Firefighter
- Engines
- Smokejumper
- Dozer

##### **1. Preseason Delegation Letters**

Chapter 5 of the Red Book states that agency administrators have the responsibility to “provide a written Delegation of Authority to FMOs that provides an adequate level of operational authority at the unit level. Include Multi-Agency Coordinating (MAC) Group authority, as appropriate.”

## E. WFDSS

### 1. Background

The Wildland Fire Decision Support System (WFDSS) is a web-based decision support system that provides a single dynamic documentation system for use beginning at the time of discovery and concluding when the fire is declared out. WFDSS allows the Agency Administrator to describe the fire situation, create Incident Objectives and Requirements, develop a Course of Action, evaluate Relative Risk, complete an Organization Assessment, and publish a decision.

As an internet based system with multiple database links, WFDSS can give decision support in a timely and efficient manner. WFDSS provides the following advantages over previous systems:

- Allows users to pre-load Fire Management Plan/Land and Resource Management Plan Strategic Objectives and Requirements in advance of fire season by Fire Management Unit, Strategic Objective or other boundary.
- Combines desktop applications for fire modeling into a web-based system for easier data acquisition.
- Provides an easy method for fire managers and analysts to accurately document decision-making processes by allowing results of analyses to be included in the incident content and inserted into a decision.
- Allows for quick inclusion of necessary objectives and requirements into a decision and aids in ensuring the Course of Action taken for an incident is in compliance with unit specific plans.
- It is a web-based application for easier sharing of analyses and reports across all levels of the federal wildland fire organizations.
- Introduces economic principles into the fire decision process.
- Provides a map display intended to help users visualize data geographically.
- Integrates national and interagency geospatial datasets.
- Spatially displays unit's Fire Management Units (FMU) or Strategic Objective/Management Requirement shapes so decision makers can quickly determine which areas are likely to be impacted by an incident and provide planning direction to address those areas in the decision.
- Provides one decision process and documentation system for all types of wildland fires. Decisions in WFDSS are approved and published by the appropriate Line Officer. It is imperative that a decision be reviewed carefully as once approved and published, a decision becomes a system of record and all WFDSS users can view the information. Additionally, the action CANNOT be undone. If there is an error in the information, or new information is added for documentation or update (i.e. fire behavior, Management Action Points) a new decision must be created and approved to permanently update the record.

### 2. Preseason – WFDSS review and profile updates

A number of things need to be completed in regards to WFDSS prior to fire season to ensure efficient use of the application during a fire.

- Ensure all that need one have a WFDSS account.
- Ensure your WFDSS password is up to date. Passwords expire every 60 days. For more information see the WFDSS Help Topic on *User Profile*  
[http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_user\\_profile.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_user_profile.html) The *User Profile* section



contains topics on *Finding Your Username*, *Changing Your Password*, and *Requesting a Password Reset*.

- Ensure Line Officers and managers have the necessary WFDSS User Roles to accomplish work. See the WFDSS Help Topic *WFDSS User Roles*, [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_user\\_role.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_user_role.html)
- Ensure Land and Resource Management Plans and Fire Management Plan direction is preloaded by a Data Manager. See the WFDSS Help Topic *Data Management* [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Data\\_Mgmt.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Data_Mgmt.html)
- Ensure appropriate local data is preloaded by a Data Manager, such as prescribed burn and fuels treatment areas, barriers, structures, no dip streams, etc. See the WFDSS Help Topic *Data Management*, [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Data\\_Mgmt.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Data_Mgmt.html)
- Review the following:
  - What you need to know about WFDSS-2016 <http://wfdss.usgs.gov/wfdss/pdfs/2016Need2Know.pdf>

## F. Annual Fire Meeting with Local Fire Personnel

Local fire management organizations meet once a year to review fire and aviation policies, roles, responsibilities, and delegations of authority. Specifically address oversight and management controls, critical safety issues, and high-risk situations such as transfers of incident command, periods of multiple fire activity, and Red Flag Warnings.

Chapter 5 of the Red Book provides additional guidance regarding Agency Administrators Responsibilities for Fire and Aviation at the Field Level for the Forest Service.

## G. Cooperative Fire Coordination and Agreements

Meet annually with cooperators and review interagency agreements to ensure their continued effectiveness and efficiency.

Chapter 8 of the Red Book discusses Interagency Coordination and Cooperation including sections on:

- National Wildland Fire Cooperative Agreements
- Multi-Agency Management and Coordination
- Local and Geographic Area Drawdown
- Interagency Incident Business Management Handbook
- Types of agreements
- Annual Operating Plans
- International Wildland Fire Coordination and Cooperation
- National Wildland Fire Management Structure
- National Dispatch/Coordination Systems
- National Ready Reserve
- Standards for Cooperative Agreements
- Elements of Agreements
- All-Hazard Coordination and Cooperation
- International Non-Wildland Fire Coordination and Cooperation

## 1. Agreements

Meet annually with cooperators and review interagency agreements to ensure their continued effectiveness and efficiency. Chapter 8 of the Red Book Interagency Coordination and Cooperation provides more information regarding agreements.

There are many types of agreements:

- National Interagency Agreements
- Regional/State Interagency Agreements
- Local Interagency Agreements
- Emergency Assistance
- Contracts

Elements of an agreement should address:

- The authorities appropriate for each party to enter in an agreement.
- The roles and responsibilities of each agency signing the agreement.
- An element addressing the cooperative roles of each participant in prevention, pre-suppression, suppression, fuels, and prescribed fire management operations.
- Reimbursements/Compensation - All mutually approved operations that require reimbursement and/or compensation will be identified and agreed to by all participating parties through a cost-share agreement. The mechanism and timing of the funding exchanges will be identified and agreed upon.
- Appropriation Limitations - Parties to this agreement are not obligated to make expenditures of funds or reimbursements of expenditures under terms of this agreement unless the Congress of the United States of America appropriates such funds for that purpose by the Counties of \_\_\_\_\_, by the Cities of \_\_\_\_\_, and/or the Governing Board of Fire Commissioners of\_\_\_\_\_.
- Liabilities/Waivers - Each party waives all claims against every other party for compensation for any loss, damage, personal injury, or death occurring as a consequence of the performance of this agreement unless gross negligence on any part of any party is determined.
- Termination Procedure - The agreement shall identify the duration of the agreement and cancellation procedures.
- A signature page identifying the names of the responsible officials shall be included in the agreement.

## 2. Cooperative Fire Protection Agreements

Cooperative Fire Protection Agreements authorize coordination among Military, State, Local and Federal agencies for wildfire response activities, document the coordination among the parties, and establish the method and rate of payment. Agreements should be in place in advance of wildfire responses. See FSM 5137 for Structure Fire Protection Objectives and Policy and the Interagency Incident Business Management Handbook (FSH 5109.34) and the Grants and Agreements manual and handbook (FSM 1580) for further direction on Cooperative Fire Protection Agreements.

Additional information on Cooperative Agreements can be found in FSM 5133.4.

## H. Reference Documents to Assist with Fire Decision Making

Although not all inclusive, the references listed below may assist a Line Officer in decision making and support the specific analysis and risk assessments:

- Interagency Standards for Fire & Aviation Operations (Red Book)
- Agency Administrator's Guide to Critical Incident Management, publication 926 from <http://www.nwccg.gov/publications>
- Land and/or Resource Management Plan
- Operational Plans
- Fire Danger Operating and Preparedness Plans
- Dispatch Annual Operating Plans
- Statewide Cooperative Agreements, Protection Responsibilities, Fire Restrictions Plans
- Local/State Smoke Management Guidelines
- Resource Mitigations for Wildland Fire Activities - addressing potential impacts of fire management on Threatened, Endangered, Proposed and Candidate (TEPC) plants and wildlife.
- Predictive Services Products, (7, 14, 30 and 90 day weather and climate outlooks)
- Historical Season Ending Events and Timing
- Fire History and associated documentation (fire behavior reports, weather, final maps, severity maps, etc.)
- The WFM RD&A Line Officer Resources page:  
[http://www.wfmrda.nwccg.gov/line\\_officer\\_resources.php](http://www.wfmrda.nwccg.gov/line_officer_resources.php)
  - Chief's annual letter of intent
  - Links to "Decision making for wildfires: A guide for applying a risk management process at the incident level" and "USFS Fire Response Protocol's 7 Standards for Managing Incident Risk & Wildland Fire Decision Support System"
  - Links to Incident Objectives Project with example and references for creating better Incident Objectives
- WFDSS Help content: [http://wfdss.usgs.gov/wfdss\\_help/index.htm](http://wfdss.usgs.gov/wfdss_help/index.htm)
- Line Officer Desk Guide Appendix 8 – WFDSS Guidance

## Part 2. Fires on Your Local Unit

### I. SUCCESSFUL INITIAL ATTACK

At the time of the initial fire report a dispatcher will ensure an initial incident is created within WFDSS including: at a minimum, the location, discovery date and time, and name of the incident. Incidents can be created manually or through CAD systems that interface with WFDSS and/or IRWIN (Integrated Reporting of Wildland Fire Information).

If the preplanned action is being met, and operations are successful with initial resources, no further documentation is needed in WFDSS except ensuring the fire is declared out.

## A. Visiting the Fire

Agency Administrators, Program Managers, and/or Safety and Health Program Managers shall conduct After Action Reviews on all Type 3 fires and a minimum of 10% of their unit's Type 4 and 5 fires and document their inspections in the incident records (Red Book Chapter 5).

Appendix A in the Red Book provides a list of Sample Questions for Fire Site Visits by Agency Administrators. Categories cover: Management Direction, Safety, Fire Suppression Operations, Administration, and Dispatch Office.

## B. Fire Information Guidance

On fires on National Forest System lands, Public Information Officers (PIOs) work for the US Forest Service, even if they are not regular US Forest Service employees. PIOs on incidents can respond to questions from all news media, including national news media, **about the incident only**.

The US Forest Service local unit is responsible for the content of fire communications during and after a fire. PIOs must coordinate continually with the local National Forest Public Affairs Officer (PAO) and/or Line Officer. Delegations of Authority will stress the importance of Line Officer responsibility for all fire communications, regardless of medium. Additional guidance can be found:

[http://www.nifc.gov/PIO\\_bb/fs.html](http://www.nifc.gov/PIO_bb/fs.html)

Fire managers should also coordinate with forest and regional PIOs regarding localized talking points/key messages.

### 1. InciWeb- Incident Website

InciWeb (short for Incident Website), provides information about fires of interest to the news media, elected officials, senior US Forest Service and USDA leadership, and other important stakeholders. Pertinent fire information should be posted on InciWeb as soon as possible after the incident begins.

<http://inciweb.nwccg.gov/>

### 2. Media Interview Reminders

The Incident Response Pocket Guide (IRPG) provides a list of measures to keep in mind during media interviews and is as follows:

- Ensure the appropriate Public Information Officer or the local Public Affairs Office is aware of media visits.
- Be prepared. Know the facts. Develop a few key messages and deliver them. Prepare responses to potential tough questions. If possible, talk to reporter beforehand to get an idea of subjects, direction, and slant of the interview.
- Be concise. Give simple answers (10-20 seconds), and when you're done, be quiet. If you botch the answer, simply ask to start again.
- Be honest, personable, professional, presentable (remove sunglasses and hats).
- Look at the reporter, not the camera.
- Ensure media are escorted and wearing PPE when going to the fireline or hazardous sites.
- NEVER talk "off the record," exaggerate, or try to be cute or funny.
- DON'T guess or speculate or say "no comment." either explain why you can't answer the question or offer to track down the answer.

- DON'T disagree with the reporter. Instead, tactfully and immediately clarify and correct the information.
- DON'T speak for other agencies or offices.
- DON'T use jargon or acronyms.

## II. MANAGING FIRES ON YOUR UNIT

### A. Use of WFDSS

The Wildland Fire Decision Support System (WFDSS) is a web-based decision support system that provides a single dynamic documentation system for use beginning at the time of discovery and concluding when the fire is declared out. WFDSS allows the Agency Administrator to describe the fire situation, create Incident Objectives and Requirements, develop a Course of Action, evaluate Relative Risk, complete and Organization Assessment, and publish a decision.

WFDSS will be used for decision support documentation for all fires that escape initial attack or exceed initial response. These incidents will have a Published Decision within WFDSS. A Published WFDSS Decision establishes objectives, a Course of Action and Rationale for incidents with varying duration, spread potential, costs, or other considerations. The level of documentation to publish a decision should be commensurate to the incident duration, spread potential, cost, or Relative Risk. Agency-specific direction established in memos or other policy documents may further define WFDSS documentation requirements.

Additional information can be found in Chapter 11 and Appendix N of the Red Book, Appendix 8 of this document and the WFDSS Help ([http://wfdss.usgs.gov/wfdss\\_help/index.htm](http://wfdss.usgs.gov/wfdss_help/index.htm)).

#### 1. Initial Decision

Red Book Chapter 11: An initial decision should be published within 24 hours after the determination that a published decision is needed, or within 24 hours of requesting an incident management team.

When determining if a decision is needed consider the following:

- The fire has not been contained by initial attack resources dispatched to the fire.
- The fire will not have been contained within the initial attack management objectives established for that zone or area according to the unit's planning documents.
- The incident objectives include both protection and resource benefit elements consistent with land management planning documents.
- The fire affects or is likely to affect more than one agency or more than one administrative unit within a single agency (for example more than one National Forest).
- The fire is burning into or expected to burn into wildland-urban interface.
- Significant safety and/or other concerns such risk to public health, transportation safety, and or fire personnel are present or anticipated.
- The relative risk assessment indicates the need for additional evaluation and development of best management practices for achieving land and resource objectives.

## 2. Incident Objectives

In an Incident Decision, there should be a direct tie between Incident Objectives, Incident Requirements, Course of Action, and the Rationale. They are all tiered down from the LRMP direction and provide the AA's intent and basis for the tactical plan.

Continuity of information within the WFDSS Decision leads to clearer understanding and implementation of LRMP direction. The leader's intent (Incident Objectives), the sideboards for the incident (Incident Requirements), and the intended actions (Course of Action / Management Action Points) all describe the AA's decision regarding how to implement that LRMP direction. This information should not be tactical in nature to avoid unnecessarily limiting the IMT's ability to take actions based on fire behavior and priority.

Information from the LRMP tiered down to the tactical plan (Incident Action Plan) will result in sound fire management on public lands and ensure implementation of the land management direction. Most importantly, firefighters will not be engaged in activities that are not important or that contradict LRMP direction. A clear articulation of the "why" allows IMTs to utilize a risk-management dialogue with their staffs and the AA to ensure the fire is managed while considering firefighter exposure.

It is the AA's responsibility to ensure the WFDSS Decision follows policy and guidance. Many land management units have a designated "WFDSS user" who crafts WFDSS Incident Objectives and Incident Requirements for AA approval. Anyone who is an Incident Author, Owner, or Editor can create these statements, but the Approver (usually the Agency Administrator) must review them carefully to ensure they 1) provide clear leader's intent, 2) are aligned with the LRMP, 3) are relatively few in number, 4) do no conflict, 5) indicate the "what, when, where, why" and 6) give an overall sense of priority.

Multiple resources including examples of how to create quality Incident Objectives are available on the Line Officer Resources page [http://www.wfmrda.nwccg.gov/line\\_officer\\_resources.php](http://www.wfmrda.nwccg.gov/line_officer_resources.php) on the WFM RD&A's website, see the heading Incident Objectives Project.

### B. Criteria for a New Decision

Redbook Chapter 11: As incident complexity increases or decreases, it may become necessary for additional supporting analyses to inform decision making. If additional analysis indicates the decision needs modification, a new decision is required. Depending on the complexity of the incident, a new decision should be published within 2-3 days for less complex incidents and within 4-7 days for more complex incidents. The same criterion from Initial Decision applies in addition to the following can help guide determinations about publishing a New Decision:

- The Periodic Assessment indicates the Course of Action (decision) is no longer valid.
- The management needs of the incident exceed existing capability.
- The expected costs of incident management exceed agency-established thresholds for level of approval authority.
- The fire moves or is expected to move beyond the Planning Area analyzed.
- Management Action Points have been established since the initial decision was published and additional information is needed to further manage the incident over time.
- The Line Officer is considering ordering an IMT.

Additional information about WFDSS can be found in the Redbook Appendix N and Appendix 8 of this document. User support information, training materials, and other resources can be found at the WFDSS

homepage. <http://wfdss.usgs.gov/>

## C. Use of Incident Management Teams

When the decision has been made to order a Type 1 or Type 2 incident management team to take over management of a wildland fire, the following must be completed by the responsible Line Officer with jurisdictional and/or protection authority for the area on which the incident occurs.

### 1. Determining Team Type - Wildfire Risk and Complexity Assessment

The National Wildfire Coordinating Group has adopted the Risk and Complexity Assessment (RCA) as a replacement for the Incident Complexity Analysis and the Organizational Needs Assessment. The RCA assists personnel with evaluating the situation, objectives, risks, and management considerations of an incident and recommends the appropriate organization necessary to manage the incident. The Risk and Complexity Assessment is found in Appendix E of the Redbook and within the Wildland Fire Decision Support System.

The RCA also includes common indicators of incident complexity to assist firefighters and managers with determining incident management organizational needs.

### 2. Ordering an Incident Management Team

The following Information is from regional guides developed for field use.

The responsible Line Officer will;

- Place the request for an incident management team, in coordination with unit fire staff, through their Dispatch Center as soon as that need has been identified and verified by Operational Needs Assessment for the incident. Identify the type of team needed, place for the team to report to for the Line Officer's briefing, and time to report at that location.
- Be sure ordered time lines are reasonable. Consider the time necessary to assemble and transport the team, avoid night mobilization when possible, and most likely time to effect transition from the current incident management organization to the national or geographic area team.

### **Do not plan a transition during an operational period.**

### 3. Prior to meeting the Team

The responsible Line Officer, with assistance from appropriate staff will;

- Prepare and document a Decision within WFDSS and Line Officer's briefing package.
- Prepare the Delegation of Authority and Leader's Intent Letter.
- Appoint a resource advisor to work with the incident management team and brief that person on their responsibilities and authority.
- Consider the need for an incident business advisor (IBA) to assist in managing fiscal aspects of the incident. A general advice for when an IBA should be used is anytime the incident is suspected to be a person-caused trespass fire, whenever claims are involved or likely to be, or whenever a Type 1 incident management team is to be assigned.



- Notify and assemble key staff and other personnel, including cooperators, essential to preparing for and transitioning to the incoming incident management team.
- Transition from local management to team management of the incident
- Avoid transition during the active burning period or an operational period to which resources are assigned and being managed by the local organization.
- If no resources are assigned to the incident, take-over of the incident by the team may occur as practical; however, current fire behavior and area involved by the incident should be compatible with objectives stated for the team within the Published WFDSS Decision.
- Ensure the availability of the current incident commander and any key personnel to personally meet with and brief the incoming team.

#### **4. Managing the Team**

The responsible Line Officer will provide oversight to the incident management team, primarily through monitoring the appropriateness of the WFDSS Published Decision, effectiveness of the team's tactical implementation of that decision, direction in the delegation of authority, and overall relationship with the host unit, cooperators, and incident support organization.

Remember, the team is working for you. You have the same obligation to them as you would to any other member of your regular organization to support their needs to get the job done. When the team arrives to manage the incident, find out if they are at full strength, with all key positions staffed or en-route. If not, help the team get the qualified personnel they need by exercising your influence through proper channels. Find out what other specific needs the team may have or anticipate, and help make those resources available to them.

The responsible Line Officer, or a delegated representative (Line Officer's representative or fire staff) should be available to the incident commander for quick consultation and decision making on an arranged basis through established communications contact points and times and scheduled meetings.

#### **5. Transfer of Command – Team Transition**

The following guidelines will assist in the transfer of incident command responsibilities from the local unit to incoming Type 1 or 2 Incident Management Team and back to the local unit. Refer to the Red Book Chapter 11 for additional information.

- The local team or organization already in place remains in charge until the local representative briefs their counterparts on the incoming team, a Delegation of Authority has been signed, and a mutually agreed time for transfer of command has been established.
- The ordering unit will specify times of arrival and transfer of command, and discuss these timeframes with both the incoming and outgoing command structures.
- Clear lines of authority must be maintained in order to minimize confusion and maintain operational control.
- Transfers of command should occur at the beginning of an operational period, whenever possible.
- All operational personnel will be notified on incident command frequencies when transfer of command occurs.

***Do not plan a transition during an operational period.***

## 6. Delegation of Authority Letter

Agency Administrators must approve and publish decisions in WFDSS (and subsequent Courses of Action) and issue delegations of authority to the incident commander. The Agency Administrator's authority is based on incident type, as directed in Chapter 5 of the Redbook.

Chapter 11 of the Red Book provides direction on delegations of authority. Agency Administrators must issue written delegations of authority to Incident Commanders.

The delegation should:

- State specific and measurable objectives, priorities, expectations, Agency Administrator's intent, constraints, and other required direction.
- Establish the specific time for transfer of command.
- Assign clear responsibilities for initial attack.
- Define your role in the management of the incident.
- Describe procedures for conduct during action reviews with the IC
- Assign a resource advisor(s) to the IMT.
- Define public information responsibilities.
- Address accident investigation procedures and notification requirements for fire managers, line officer(s), and dispatch/coordination centers
- Assign a local government liaison to the IMT (if necessary)
- Assign a local fire management liaison to the IMT (if necessary)
- Assign an Incident Business Advisor (IBA) to provide incident business management oversight commensurate with complexity.
- Direct IMT to address rehabilitation of areas affected by suppression activities.

Appendix G of the Red Book provides an example Delegation of Authority to IMT letter.

## 7. IMT Briefing Checklist

The Line Officer's (Agency Administrator's) briefing is a crucial procedure that should be given thorough attention and preparation, in consideration of the general hurried state of business during the transition between extended attack, an escaped fire and the anticipation of an incident management team. The Line Officer's briefing will provide information, guidance, and direction, including constraints, necessary for the successful management of the incident.

The briefing must be provided any time an incident management team is assigned, including changing teams before all incident objectives have been met, and whenever major jurisdictional responsibilities are added or otherwise change within the incident. Either at the time of the Line Officer's briefing for the incident management team, or at a separate place and time if necessary, ensure that the IMT has an opportunity to meet with, be briefed by, and thoroughly transition with the current incident commander and the members of their organization prior to assuming command of the incident

## 8. Purpose of the Line Officer's briefing

The purpose of the Line Officer's briefing is to:

- Provide a common understanding between the Line Officer and the incident management team of the environmental, social, political, economic, legal, and other management issues relevant to the incident and its location.

- Inform the IMT of the history, current status of the incident and actions taken to date, including weather, fire behavior, and effectiveness of tactics.
- Present other documents providing intelligence and aids to management of the incident, including maps (units using Spatial Fire Planning in WFDSS could display directly from WFDSS or download the relevant maps for display purposes), photos, GIS products, weather forecasts, Fire Management Plans, phone lists, agreements, operational period plans, and current ICS-209.
- Present the published decision and the Delegation of Authority letter from the Line Officer to the Incident Commander.
- Identify key agency personnel who will be involved with the IMT, including the Line Officer's Representative, Resource Advisor, and Incident Business Advisor.
- Establish procedures and schedules for communication between the Line Officer and incident commander.
- Establish how news media, public information, and important local and political contacts will be handled on the incident.
- Establish resource ordering procedures.
- Identify the IMT's responsibility for initial attack and support of other Forest incidents.
- Establish the disposition of Forest suppression resources and local participation on the incident.
- Establish understanding for the use of trainees on the incident.
- Establish Forest and incident policy on compensable meal breaks, work / rest, rest and recuperation, and open vs closed camps.
- Establish standards for return of the incident to local management, including mop-up and fire suppression rehabilitation expectations. Refer to section L for more information.
- Identify special safety awareness concerns and expectations.

## 9. Conducting the Line Officer's briefing

The briefing should be planned for a comfortable setting away from most distractions, where the incoming incident management team and all required representatives of the host agency can assemble. It should take place as soon as the incoming team is assembled. It is essential that the Line Officer ensure notification of the briefing time and location to the incident commander, usually through the dispatch network.

The briefing should be led by the responsible Line Officer and follow an organized format to ensure information exchange and minimize the time required of the team prior to them mobilizing to the incident location. All agency participants must be prepared for their part in this procedure and all pertinent information and documentation must be printed/distributed in sufficient quantities for required distribution.

The agenda for the Line Officer's briefing can include:

Agenda Item	Presenter
Welcome and introductions	Line Officer / IC
Incident history	FMO
Background of other activity or issues on the Forest that may influence this incident	FMO / Line Officer
Overview of WFDSS selected Course of Action, strategy and direction	FMO
Presentation of the Line Officer's briefing package (discussion of each element)	FMO



Agenda Item	Presenter
Presentation of delegation of authority to the IC	Line Officer
Emphasis on safety	Line Officer
Questions and answers	IC / Line Officer / FMO
Concluding remarks	Line Officer

## 10. Who should participate

### From the Forest:

- Line Officers (both the District Ranger and Forest Supervisor or their representatives)
- Fire Staff Officer / Forest FMO
- Resource Advisor
- Incident Business Advisor
- District FMO
- current incident commander
- dispatch Center Manager
- incident support organization coordinator
- buying team leader
- necessary staff specialists

### From the incident management team:

- The entire IMT if possible, but the command and general staff at a minimum

### Others:

- involved cooperator representatives

Do not make the Line Officer's briefing a public meeting and do not include the press.

### Line officer briefing format:

- Appendix D of the Red Book contains an Agency Administrators Briefing to IMT template
- Consult Geographic Area and Regional site for localized specific information regarding briefings

## 11. AA Role with IMT throughout the Incident

### General Guidelines:

After assigning the incident management team to a wildland fire on your unit, the Line Officer should allow those with delegated authority and responsibility to manage the situation and resources assigned to it. You must be prepared to provide necessary oversight, guidance, and direction to each level of the incident management organization by staying informed of events and participating in intelligence and strategy discussions in order to understand the current and emerging situation, and be able to respond when decisions and direction are required.

The following are suggestions for the Line Officer to help you remain focused during a large fire incident on your unit.

- Recognize that every fire has potential.
- Be available and be involved, do not micro-manage the incident. Let people do their work, and make sure they know you are there to lead and support them.
- Review daily Incident Action Plans and ensure tactics and other direction are compatible with the strategic objectives and incident objectives provided for the incident within WFDSS. Firefighter and public safety must be given visible and sincere emphasis.
- Provide oversight and direction to the Resource Advisor.
- Ensure that unit/district welfare and caretaking is on-going. Local personnel can become overwhelmed by the events, activities, and organization related to a large fire. Keep your folks informed and involved, but do not let them become overloaded by a combination of the fire and their normal duties, and do not let them feel left out.
- Keep your key publics and local government officials informed and involved.
- Understand the big picture; do the best you can with what you have. Increasingly, your large fire is not the only game in town, and the conventional wisdom of fire suppression may not apply.
- Know what is going on, see for yourself, stay ahead of the power curve.
- Use experienced advisors, coaches, or deputies to help you and your staff better manage the situation of increased volume and complexity of business during this period.
- Do not hesitate to bring in help to increase your unit's depth and situational management capability.

## **12. New Delegation of Authority, Leaders Intent Letter and Briefing Package – Beta Review**

In 2014, the WO FAM requested a field review of WFDSS Decision Documentation. It was noted that the Incident Objectives being written in many decisions were not site specific, but general and applicable to any acre on any landscape. Additional findings noted that many Delegation of Authority (DOA) letters, Leaders Intent, Briefing Packages and the WFDSS decision documentation lacked consistency, providing potentially misleading direction to Incident Management Teams. It was challenging for the IMTs to interpret and implement the expectations from all of these documents since they were all outlining different priorities or expectations. In response to these inconsistencies the WFM RD&A pulled together several example documents to build templates for the DOA, Leaders Intent and In Briefing Package for the field to use to help alleviate these inconsistencies.

These documents can be found on the WFM RD&A webpage – References and Guidance page:

[http://www.wfmrda.nwcg.gov/reference\\_&\\_guidance.php](http://www.wfmrda.nwcg.gov/reference_&_guidance.php)

### **D. WFDSS Decision and the Incident Management Team**

The Unit Line Officer has the overall responsibility for completing the incident decision documentation, including objectives, priorities, course of action(s), and publishing the WFDSS Decision. However, when an IMT has been delegated authority to manage an incident it is important the team and the local unit work together to outline the Course of Action to be taken to successfully manage that incident. If the incident is multi-jurisdictional, the issue of responsibility could be further compounded between agencies. On some incidents, the Line Officer(s) may choose to delegate some WFDSS tasks to the IMT. For more

specific guidance review NWCG memo 005-2012 "Wildland Fire Decision Support System and the Role of Incident Management". <http://www.nwcg.gov/sites/default/files/memos/eb-m-12-005a.pdf>

### **1. Delegating portions of WFDSS to the IMT**

The Line Officer should negotiate with the IMT regarding the type of WFDSS involvement desired and clearly document those decisions within the Delegation of Authority or Leader's Intent as directed by the agency. Local unit capability may be exceeded by the activity or complexity level on the unit. In those situations, the Line Officer may decide to delegate some WFDSS tasks to the IMT through coordination with local fire personnel, interagency partners, and IMT agreement. The Incident Commander (IC) should ask questions to fully understand the Line Officer's expectations before signing the delegation.

Incident management tasks that are best performed through the cooperation of the local unit and the IMT might include:

- Updating (uploading) fire perimeters.
- Ordering and managing staff to run fire models and/or complete a long-term assessment.
- Drafting updates for inclusion in the Periodic Assessment that describe the current incident status and key events. The Periodic Assessment should be completed by the Line Officer, who is responsible to ensure the WFDSS Decision is still representative of the actions being taken on the fire, but the IMT should provide input for the Line Officer's consideration.
- Updating strategic tactical responses to the incident such as MAP development and revision, outlining and modifying the Course of Action, estimates and updates of expected final incident costs.

### **2. Line Officer responsibilities regarding Decisions**

All decision documentation functions can be performed by the IMT through a delegation of authority with the exception of the responsibilities of the Line Officer which includes:

- Approving a decision.
- Writing the rationale for the decision.
- Initiating a new decision process during the Periodic Assessment. However, working together the IMT usually provides recommendations about changing conditions, needed tactics, and implementation strategies that might initiate a new decision within WFDSS.
- Entering or editing objectives or requirements for the local unit from local unit planning documents. However, the team has the responsibility to clarify local unit objectives and requirements with that unit.

## **E. IMT Performance Evaluations**

Chapter 11 of the Red Book covers Team Evaluations.

At completion of assignment, Incident Commanders will receive a written performance evaluation from the Agency Administrator(s) prior to the teams' release from the incident. Certain elements of this evaluation may not be able to be completed at the closeout review. These include accountability and property control, completeness of claims investigation/documentation, and completeness of financial and payment documentation.

The final evaluation incorporating all of the above elements should be sent to the Incident Commander and the respective GACC within 60 days. See Appendix I of the Red Book for the IMT evaluation form.

The Delegation of Authority, the Published Decision in WFDSS, and other documented Agency Administrator's direction will serve as the primary standards against which the IMT is evaluated.

The Agency Administrator will provide a copy of the evaluation to the IC and the state/regional FMO, and retain a copy for the final fire package.

The state/regional FMO will review all evaluations and will be responsible for providing a copy of evaluations documenting performance to the Geographic Area Coordinating Group or agency managing the IMT.

### 1. IMT evaluation form

Chapter 11 of the Red Book provides additional guidance, and Appendix I of the Red Book provides an IMT evaluation form.

## F. Long Term Incidents

Incidents that will be managed over a long duration often have varying management needs over time. Options exist for flexible incident management. To support long duration fire decisions, a number of resources should be utilized to help meet desired objectives. Managers are urged to use the analytical tools from the Predictive Services Group and support personnel such as a Strategic Operations Planner (SOPL), Long Term Fire Analyst (LTAN), Fire Behavior Analyst (FBAN), Air Resource Advisor or agency air quality personnel, and other personnel skilled in assessing potential fire growth and behavior, smoke, and other resource impacts.

Strategic Operational Planners are skilled in applying risk assessment products to the development of long-term plans employing the full spectrum of fire management responses to meet land management objectives.

Some regions utilize long term planning teams or groups of individuals with skills in planning, fire behavior analysis, operations, GIS, risk management, etc. Consult Geographic Area and Regional sites for information regarding these teams.

Utilize the Organization Assessment (available in WFDSS) as often as needed to gauge the management level necessary for your incident.

Always be sure the Course of Action in WFDSS accurately reflects the long term management approach. Consider adding any products used during long term planning in the decision content (ERC graphs, resource levels, seasonal/climate projections, fire behavior analysis, smoke dispersion predictions etc.)

## G. Incident Business Management

The Incident Business Advisor (IBA) works under the direct supervision of the Agency Administrator and in coordination with the IMT. The primary duty of the IBA is to provide the Agency Administrator or their delegate with an overview of incident management business practices, make recommendations for improvements, and facilitate communication with the IMT and other resources assigned in support of the incident.

All federal agencies have adopted the NWCG *Interagency Incident Business Management Handbook* (IIBM) as the official guide to provide execution of each agency's incident business management program. Unit offices, geographic areas, or NWCG may issue supplements, as long as policy or conceptual data is not changed. The handbook is available here:

<http://www.nwcg.gov/sites/default/files/products/pms902.pdf>

The handbook assists participating agencies of the NWCG to constructively work together to provide effective execution of each agency's incident management program by establishing procedures for:

- Uniform application of regulations on the use of human resources, including classification, payroll, commissary, injury compensation, and travel.
- Acquisition of necessary equipment and supplies from appropriate sources in accordance with applicable procurement regulations.
- Managing and tracking government property.
- Financial coordination with the protection agency and maintenance of finance, property, procurement, and personnel records and forms.
- Use and coordination of incident business management functions as they relate to sharing of resources among federal, state, and local agencies, including the military.
- Investigation and reporting of accidents.
- Investigating, documenting, and reporting claims.
- Documenting costs and implementing cost-effective criteria for managing incident resources.
- Non-fire incidents administrative processes.

For clarification or interpretation of any items, contact the designated Unit Administrative Representative or the Incident Business Advisor (IBA). Agency specific direction is located in FSH 5109.34

## **H. Cost Management**

Redbook Chapter 11:

An Incident Business Advisor (IBA) must be assigned to any fire with costs of \$5 million or more. If a qualified IBA is not available, the approving official will appoint a financial advisor to monitor expenditures.

Incident cost objectives will be included as a performance measure in Incident Management Team evaluations.

An Interagency Large Fire Cost Review will be conducted when an incident (single fire or complex) meets or exceeds Federal combined expenditures of \$10 million. See Red Book Chapter 11 for more information.

### **1. Cost Share**

Mutually approved operations that require reimbursement and/or compensation will be identified and agreed to by all participating parties through a cost-share agreement. The mechanism and timing of the funding exchanges will be identified and agreed upon.

Red Book Chapter 8, in terms of cost sharing, Annual Operating Plans should address:

- The cost-sharing methodologies that will be utilized should wildfire spread to a neighboring jurisdiction in a location where fire is not wanted.
- The cost-share methodologies that will be used should a jurisdiction accept or receive a wildland fire and manage it to create benefit.

- Any distinctions in what cost-share methodology will be used if the reason the fire spreads to another jurisdiction is attributed to a strategic decision, versus environmental conditions (weather, fuels, and fire behavior), or tactical considerations (firefighter safety, resource availability) that preclude stopping the fire at jurisdictional boundaries. Examples of cost-sharing methodologies may include, but are not limited to, the following:
  - When a wildland fire that is being managed for benefit spreads to a neighboring jurisdiction because of strategic decisions, and in a location where fire is not wanted, the managing jurisdiction shall be responsible for wildfire suppression costs.
  - In those situations where weather, fuels, or fire behavior of the wildland fire precludes stopping at jurisdiction boundaries cost-share methodologies may include, but are not limited to:
    - Each jurisdiction pays for its own resources – fire suppression efforts are primarily on jurisdictional responsibility lands,
    - Each jurisdiction pays for its own resources – services rendered approximate the percentage of jurisdictional responsibility, but not necessarily performed on those lands
    - Cost share by percentage of ownership
    - Cost is apportioned by geographic division. Examples of geographic divisions are: Divisions A and B (using a map as an attachment); privately owned property with structures; or specific locations such as campgrounds,
    - Reconciliation of daily estimates (for larger, multi-day incidents). This method relies upon daily agreed to cost estimates, using Incident Action Plans or other means to determine multi-Agency contributions. Reimbursements can be made upon estimates instead of actual bill receipts.

For further information, refer to NWCG Memorandum #009-2009 Revisions to the Annual Operating Plans for Master Cooperative Fire and Stafford Act Agreements due to Implementation of Revised Guidance for the Implementation of Federal Wildland Fire Management Policy, April 13, 2009.

<http://www.nwcg.gov/sites/default/files/memos/eb-m-09-009.pdf>

Chapter 11 of the Red Book provides guidance on Large Fire Cost Reviews. The *Large Fire Cost Review Guidebook* and draft Delegation of Authority for use by all federal wildland fire management agencies can be found at [http://www.nwcg.gov/sites/default/files/memos/eb-m-09-003\\_0.pdf](http://www.nwcg.gov/sites/default/files/memos/eb-m-09-003_0.pdf)

Consult Geographic and Regional sites for more localized cost share guidance and templates. See Appendix 4 for a cost share template.

## I. Resource Advisors

When a wildland fire is managed by an incident management team, the Line Officer should assign a resource advisor (READ) to work for them, and with the team, to represent Line Officer direction for meeting land and resource objectives during fire suppression. The READ is responsible for identifying and evaluating potential impacts of fire operations on natural and cultural resources, as well as to the social and political atmosphere affecting the unit. The READ will use their local understanding and familiarity to integrate these issues and concerns into the fire management strategy and tactics and assist the IMT in developing mitigations which satisfy the mutual objectives of wildland fire suppression and resource protection.

The decision to appoint a resource advisor should be made early in the decision process for managing a large wildland fire incident. Ideally, the READ is appointed and briefed by the Line Officer before the incident management team is in place and assumes direct management of the objectives set for the fire. The READ should be involved in the preparation of the WFDSS decision and Line Officer's briefing to the IMT. That person should be made available to the team on as near a full time basis during the team's management of the incident as possible. Consequently, the Line Officer should take necessary steps to alleviate the READ of other routine responsibilities to the extent possible.

Throughout the incident, the Line Officer should be available to the READ for consultation and monitoring of issues and events. In all events, the Line Officer and READ must remember that the READ works for the Line Officer and with the team.

Redbook Chapter 11 provides information regarding Resource Advisors.

### 1. Resource Advisor Responsibilities

The Resource Advisor is responsible for anticipating the impacts of fire operations on natural and cultural resources and for communicating protection requirements for those resources to the Incident Commander. The Resource Advisor should ensure IMT compliance with the Land/Resource Management Plan and Spatial Fire Plan in WFDSS. The Resource Advisor should provide the Incident Commander with information, analysis, and advice on these areas:

- Rehabilitation requirements and standards
- Land Ownership
- Hazardous materials
- Fuel breaks (locations and specifications)
- Water sources and ownership
- Mineral resources (oil, gas, mining activities)
- Critical watersheds, wildfire habitat
- Military issues
- Grazing allotments
- Recreational areas
- Special status species (threatened, endangered, proposed, sensitive)
- Noxious weeds/aquatic invasive species
- Poisonous plants, insects, and snakes
- Utility rights-of-way (power, communication sites)
- Riparian areas
- Archeological site, historic trails, paleontological sites
- Fisheries
- Native allotments
- Special management areas (wilderness areas, wilderness study areas, recommended wilderness, national monuments, national conservation areas, national historic landmarks, areas of critical environmental concern, research natural areas, wild and scenic rivers)

\* A majority of these data layers can be preloaded in WFDSS to help streamline sharing of information with line officers, Incident Management Teams, Resource Staffs etc.

The Resource Advisor and Agency Administrator Representative positions are generally filled by local unit personnel. These positions may be combined and performed by one individual. Duties are stated in the Resource Advisor's Guide for Wildland Fire (NWCG PMS 313, NFES 1831, Jan 2004), available here: <http://www.nwcg.gov/sites/default/files/products/pms313.pdf>

## J. Minimum Impact Suppression Tactics (MIST)

The IRPG provides guidance on MIST and where desired should be included in incident objectives.

The intent of Minimum Impact Suppression Tactics is to manage a wildland fire with the least impact to natural and cultural resources. Firefighter safety, fire conditions, and good judgment dictate the actions taken. By minimizing impacts of fire management actions, unnecessary resource damage is prevented and cost savings can be realized. These actions include, but are not limited to:

### 1. Line construction and mop-up

- Consider:
  - Cold-trailing fireline.
  - Using wetline or sprinklers as control line.
  - Using natural or human made barriers to limit fire spread.
  - Burning out sections of fireline.
  - Limiting width and depth of fireline necessary to limit fire spread.
- Locate pumps and fuel sources to minimize impacts to streams.
- Minimize cutting of trees and snags to those that pose safety or line construction concerns.
- Move or roll downed material out of fireline construction area.
- In areas of low spotting potential, allow large diameter logs to burn out.
- Limb only fuels adjacent to the fireline with potential to spread outside the line or produce spotting issues.
- Scrape around tree bases near fireline likely to cause fire spread or act as ladder fuel.
- Minimize bucking of logs to check/extinguish hot spots; preferably roll logs to extinguish and return logs to original position.
- Utilize extensive cold-trailing and/or hot-spot detection devices along perimeter.
- Increased use of fireline patrols/monitoring.
- Flush-cut stumps after securing fireline.

## K. Long-Term Incidents

- Consult with Resource Advisor to locate suitable campsites. Scout thoroughly to avoid hazards  
(bee's nests, widowmakers, etc.).
- Plan for appropriate methods of:
  - Helispot locations
  - Supply deliveries
  - Trash back-haul
  - Disposal of human waste

- Minimize ground and vegetation disturbance when establishing sleeping areas.
- Use locally approved storage methods to animal proof food and trash.
- When abandoning camp, rehab impacts created by fire personnel.

## **L. Fireline Rehabilitation**

Chapter 11 of the Red Book provides direction regarding Agency Administrator's responsibilities for rehabilitation from suppression actions, emergency stabilization, rehabilitation and restoration.

The effects on resources and property caused by the tactical actions of fire suppression may be rehabilitated as part of the on-going implementation of incident objectives being managed by the IMT and funded from the emergency suppression account established for the fire. Ground disturbance from fireline construction, road and trail damage from equipment use, site disturbance at incident bases, fences damaged for fire suppression access, etc. are examples of the types of fire suppression effects which may be rehabilitated in this manner.

Standards for fire suppression effects rehab must be established by the Line Officer, usually through the resource advisor, and clearly communicated to the IMT in a time frame which allows the team to effectively incorporate this work into overall incident objectives and daily operations. Any such rehabilitation work which is not completed by the team and will be carried on by the home unit after the team has been released, must be completed promptly.

## **M. Resources Available to Line Officers**

### **1. Indicators of need for additional resources**

The following material was gathered from regional guides:

If several of the following occur, you should seriously consider calling for outside assistance:

- Consider if additional help is needed to both manage the incident and plan for the incident.
  - Ensure people are not filling multiple management roles
  - Staff is not available to maintain area operations. Visitor services are significantly curtailed, or other major program areas are severely hampered.
  - Staff is working longer than 12 hour operational periods on a sustained basis and/or consistently working days off.
  - Essential staff is absent from area for extended period.
  - Span of control exceeds acceptable limits.
  - Staff not able to adequately respond to public and media demand for information.
- Staff is no longer able to maintain a clear picture or understanding of what is happening with incident(s).
- Consider use of a Strategic Operational Planner (SOPL) to assist and shadow your leadership.
- What is the likelihood that an incident will soon impact an adjacent agency/landowner?
- Rumors are running rampant.
- Inordinate time and effort are being expended on a single issue.
- Numerous people are dependent upon you incessantly for decisions on a variety of issue.

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- Financial obligations are increasing rapidly.
- Information updates occur frequently.
- Accident frequency rate has increased.
- All of the field unit's communications are tied up with incident(s).
- Multiple incidents have occurred, or if another incident occurs, area resources cannot respond adequately.
- Fire weather forecast indicates potential for additional problems.
- Local cooperators are experiencing problems and/or are unable to provide assistance.
- Closures are occurring as a result of incident(s).
- Continuing threat to visitor safety.
- Current control efforts are not meeting objectives.

#### **N. Resources Available To Line Officers Include:**

- Regional Forester Representatives (RFR), discussed below. Contact the regional forester's office or regional fire director.
- Decision Support Groups: Groups of individuals, who can gather and complete input requirements for decision Support Group work with your Geographic Area Editor and/or visit [http://www.wfmrda.nwcg.gov/decision\\_support.php](http://www.wfmrda.nwcg.gov/decision_support.php)
- Predictive Services Centers: national and regional Predictive Service Centers provide decision support information needed to proactively anticipate significant fire activity and determining resource allocation needs. <http://www.predictiveservices.nifc.gov/predictive.htm>
- Resource Advisors (READ). Utilize local fire management contacts and adjoining units to determine personal and availability.
- Regional Air Quality Specialist
- Air Resource Advisors – individuals trained to monitor smoke production, also assists with disseminating this information to federal and public entities, may also be a position within a Decision Support Center. Contact your Geographic Area Editor to assist in coordination with the Air Resource Advisor program manager.
- Line Officer Coach. Contact regional forester's office or regional fire director.
- Safety Team. Contact Regional Safety Officer.
- Aviation Team. Contact Regional Aviation Officer.
- Strategic Operational Planner (SOPL). Order through ROSS.
- National Incident Management Organization (NIMO). Ordered the same as Type I and II IMTs. Coordinate with regional office and fire director.
- In addition to these work with your Supervisor, Fire Staff Officer, and Regional Specialists (Fire Planning, Air Quality Specialist, Assistant Fire Directors etc.).

## O. Regional Representatives

The Regional Forester's Representative (RFR) is an individual identified by the Regional Forester who will provide an additional review of incident processes and identify any areas where management efficiencies can be improved. The Regional Forester will issue a letter defining the Roles of their Representative on a case by case basis depending on the fire situation, potential duration and planning needs. Currently, no national standards exist for the role of the Regional Foresters Representative these roles will continue to evolve throughout the fire season.

The RFR will work directly for the Regional Forester and work closely with the local Agency Administrator and staff to review the incident planning process, applicable documentation, current and predicted fire situation, and offer any advice and counsel in areas that could assist the local unit in improving management efficiency. Once an individual has been designated as the RFR, the Regional Forester will provide that individual with a letter of expectations. This letter will clearly state the expectations of the Regional Forester, roles of the RFR, communication processes and frequency with the RO, and products required from the RFR.

Roles and responsibilities of the RFR include, but are not limited to:

- Provide regional and national perspective to the local Line Officer concerning the fire and others that may develop within the region during this time.
- Review incident planning documents with the local Agency Administrator.
- Utilize a Regional Decision Support Group (DSG) on the incident to gather additional decision support information.
- Review the delegation of authority from the Agency Administrator to the IMT with focus on the stated objectives, operational constraints, special concerns, public information, and cost management.
- Provide an outside review of the WFDSS decision and offer recommendations as appropriate regarding: selected suppression strategy and tactics and consistency with values at risk, resource availability, and probability of success; projected suppression costs; and resource allocation issues.
- Review incident management activities which would include both the Incident Management Team (IMT) and Agency Administrator functions.
- Review inter-forest aspects of incident management, such as communication, coordination, etc., if applicable.
- Review decision support group products and promote proper inclusion of data in the decision making process if appropriate.
- Maintain close communications with the regional office and provide the regional office a daily progress report.

## P. Resources You Can Expect On Large Incidents

- Incident Business Advisor (IBA). An Incident Business Advisor (IBA) must be assigned to any fire with costs of \$5 million or more. The complexity of the incident and the potential costs should be considered when assigning either an IBA1 or IBA2. If a qualified IBA is not available, the approving official will appoint a financial advisor to monitor expenditures. – Red Book Chapter 11.
- Large Fire Cost Review Team for a single incident or complex that meets or exceeds Federal combined expenditures of \$10 million. They may also be used for: incidents predicted to exceed

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21 days; incidents with significant political, social, natural resource, or policy concerns; incidents with significant and complicated cost-share or multi-jurisdictional issues; or incidents where the affected agency requests a review. - Red Book Chapter 11.

## **Q. Multi-Agency Management Coordination**

Chapter 8 of the Red Book provides a section on Multi-Agency Management and Coordination.

### **1. GMAC Group**

Geographic area multi-agency coordination is overseen by GMAC Groups, which are comprised of geographic area (State, Region) lead administrators or fire managers from agencies that have jurisdictional or support responsibilities, or that may be significantly impacted by resource commitments. GMAC responsibilities include:

- Establish priorities for the geographic area.
- Acquire allocate, and reallocate resources.
- Provide NMAC with National Ready Reserve (NRR) resources as required.
- Issue coordinated and collective situation status reports.

## **R. NMAC**

National multi-agency coordination is overseen by the National Multi-Agency Coordinating (NMAC) Group, which consists of one representative each from the following agencies: BLM, FWS, NPS, BIA, FS, NASF, and the USFA, who have been delegated authority by their respective agency directors to manage wildland fire operations on a national scale when fire management resource shortages are probable. The delegated authorities include:

- Provide oversight of general business practices between the NMAC group and the Geographic Area Multi-Agency Coordination groups.
- Establish priorities among geographic areas.
- Activate and maintain a ready reserve of national resources for assignment directly by NMAC as needed.
- Implement decisions of the NMAC.

The NMAC Operating Plan, NMAC Correspondence, and other resources and references are located at: <http://www.nifc.gov/nicc/administrative/nmac/index.html>

## **S. Area Command and Unified Command**

Chapter 11 of the Red Book provides information regarding Area and Unified Command of incidents.

Area Command is an Incident Command System organization established to

- Oversee the management of large or multiple incidents to which several Incident Management Teams have been assigned. Area Command may become Unified Area Command when incidents are multi-jurisdictional.
- Provide strategic support and coordination services to decision makers such as Geographic Area MAC Groups, sub-geographic area MAC Groups, Agency Administrators, Geographic Area Coordination Centers, emergency operations centers, agency operations centers, or FEMA Joint Field Offices.

The primary determining factor for establishing Area Command is the span of control of the Agency Administrator.

## T. Turn Back Standards

Prior to close out with an IMT it is important to provide clear direction as to the desired turn back condition of the fire and fire area. Consider the resources the fire will be turned over to and their logistical and functional capacity to complete remaining tasks on the incident. Unnecessary risk to firefighters, as well as unnecessary cost is often incurred during the mop up stage of many fires based on mop up/turn back standards given to Incident Management Teams (IMT). This usually occurs when the mop up/turn back standards are arbitrary metrics (“100% mop up 300 feet in from the fire’s edge”) designed to reduce the risk of a rekindle once the IMT is released. Though a distance standard is measurable and easy to describe, it can cause thousands of hours of firefighter exposure and associated costs to achieve, unnecessarily, while quite possibly increasing the chance of a rekindle due to the distances to cover, as opposed to focused mop up on areas with the greatest chance for rekindling.

The following examples are in alignment with a doctrinal approach and provide the resources on scene with the decision space to use their own professional judgment to accomplish the mission.

Example:

- Limit exposure and associated risk by confining mop up to the fire perimeter only. Mop up only to the distance which minimizes the potential for spread or spotting by considering fuel height, slope, and burn intensity (consumption).
- Fall only snags or trees which provide a source of fire spread, interfere with needed access, or pose an immediate risk to firefighters or the public. Trees which are felled should not be bucked or limbed unless they conflict with the above criteria.

Example:

- Mop up to the degree necessary to make the likelihood of escape minimal based on professional experience, terrain, fuel types and fuel conditions, and current/predicted weather conditions.

Example:

- Mop up to the extent necessary to minimize the risk of the fire rekindling (taking into consideration terrain, aspect, fuel type, predicted weather, etc...) while not transferring unnecessary risk to firefighters.

As we continue to learn and improve in risk management, we need to be mindful of transferring risk to firefighters when trying to reduce other types of risk, such as of a rekindle in this case. We’re making great strides in assessing risk on where we put our firefighters during line construction and the containment phase based on the values to be protected, but we need to continue in that vein when we move to mop up and turn back.

Below is a list of additional items to consider when drafting turn back standards. Each fire is unique and may have unique turn back standards given the terrain, capacity of remaining resources, location, etc. Consider the entire fireline, camp locations, spike camps, staging areas, remote helispots, etc. Be sure to review these with the IMT well in advance of their close out date (Appendix 2 Example Turn Back Standards Letter).

- All Spot Fires lined and out – identified on maps
- All controlled line is cold

- All Accountable Property Items identified/accounted for
- All Unnecessary Equipment demobed/returned to Regional Cache
- Cache Demobed
- Fireline rehab is complete
- All Suppression related damage identified (fence line, gates, etc.)
- All spike camps, helispots, helibases rehabbed
- All back haul completed

## U. Critical Incident

Chapter 7 of the Red Book covers Safety and Risk Management.

The NWCG has published the *Agency Administrator's Guide to Critical Incident Management (PMS 926)*. This guide is designed as a working tool to assist Agency Administrators with the chronological steps in managing a critical incident. This document includes a series of checklists, which outline Agency Administrator's and other functional area's oversight and responsibilities. The guide is not intended to replace local emergency plans or other specific guidance that may be available, but should be used in conjunction with existing policy, line of duty death (LODD) handbooks, or other critical incident guidance. Local units should complete the guide, and review and update at least annually.  
<http://www.nwcg.gov/sites/default/files/products/pms926.pdf>

## V. Reviews and Investigations

Reviews and investigations are used by wildland fire and aviation managers to assess and improve the effectiveness and safety of organizational operations. Information (other than factual) derived from safety reviews and accident investigations should only be used by agencies for accident prevention and safety purposes.

It is important to learn from all unintended outcomes, which is why we have a system of reviews, analyses, and investigations to assist in identifying, preventing, and understanding factors that may prevent future accidents and injury. When an unintended outcome occurs, a determination needs to be made by the responsible Line Officer concerning what type and level of investigation or review is appropriate. It is important to select and apply the appropriate tool to meet desired objectives. There is a variety of accident investigation and analysis tools that could be used individually or concurrently for multiple investigations or reviews. Tools available include After Action Review (AAR's), Lessons Learned Review (LLR), Facilitated Learning Analysis (FLA) (Basic and Complex), Accident Investigations (AI) and Serious Accident Investigations (SAI).

### 1. Reviews

Reviews are methodical examinations of system elements such as program management, safety, leadership, operations, preparedness, training, staffing, business practices, budget, cost containment, planning, and interagency or intra- agency cooperation and coordination. Reviews do not have to be associated with a specific incident. The purpose of a review is to ensure the effectiveness of the system element being reviewed, and to identify deficiencies and recommend specific corrective actions.

The table below summarizes Review Types and Requirements and is further discussed in Chapter 18 of the Red Book.

Type	When Conducted	Delegating or Authorizing Official
Preparedness Review	Annually, or management discretion	Local/State/Region/National
After Action Review (AAR)	Management discretion	N/A
Fire and Aviation Safety Team Review (FAST)	As fire activity dictates	Geographic Area Coordinating Group
Safety Assistance Team	As fire activity dictates	Local/State/Region/National
Aviation Safety and Technical Assistance Team Review	As aviation activity dictates	State/Regional Aviation Manager or MACG
Large Fire Cost Review	Refer to NWCG Memorandum #003-2009	Agency Director
Individual Fire Review	Management discretion	Local/State/Region/National
Lessons Learned Review (LLR)	Management discretion	Local/State/Region/National
Rapid Lesson Sharing	Management Discretion	N/A
Declared Wildfire Reviews	<i>See Interagency Prescribed Fire Planning and Implementation Procedures Guide (PMS 484)</i>	

Chapter 18 of the Red Book provides guidance on considerations for deterring when and what type of review is needed.

## 2. Investigations

Investigations are detailed and methodical efforts to collect and interpret facts related to an incident or accident, identify causes (organizational factors, local workplace factors, unsafe acts), and develop control measures to prevent recurrence. Chapter 18 of the Red Book covers Reviews and Investigations, including – Agency Administrator responsibilities, investigation processes, wildland fire serious accident investigation processes (team configuration, notifications, reports etc.) and fire cause determination and trespass investigation.

### a. Wildland Fire Incident, Accident Types and Definitions

- Serious Wildland Fire Accident - An unplanned event or series of events that resulted in death; injury, occupational illness, or damage to or loss of equipment or property. For wildland fire operations, a serious accident involves any of the following:

- One or more fatalities
- Three or more personnel who are inpatient hospitalized as a direct result of or in support of wildland fire operations.
- Property or equipment damage of \$250,000 or more.
- Consequences that the Designated Agency Safety and Health Official (DASHO) judges to warrant Serious Accident Investigation.
- Wildland Fire Accident - An unplanned event or series of events that resulted in injury, occupational illness, or damage to or loss of equipment or property to a lesser degree than defined in “Serious Wildland Fire Accident”.
- Near-miss - An unplanned event or series of events that could have resulted in death; injury; occupational illness; or damage to or loss of equipment or property but did not.
- Entrapment - A situation where personnel are unexpectedly caught in a fire behavior related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or compromised. Entrapment may or may not include deployment of a fire shelter for its intended purpose. Entrapment may result in a serious wildland fire accident, a wildland fire accident, or a near-miss.
- Burnover- An event in which a fire moves through a location or overtakes personnel or equipment where there is no opportunity to utilize escape routes and safety zones, often resulting in personal injury or equipment damage.
- Fire Shelter Deployment - The removing of a fire shelter from its case and using it as protection against fire. Fire shelter deployment may or may not be associated with entrapment.
- Fire Trespass - The occurrence of unauthorized fire on agency-protected lands where the source of ignition is tied to some type of human activity.

Chapter 18 of the Red Book provides guidance on considerations for determining when and what type of investigation is needed.

The following table summarizes Investigation Types and Requirements and is further discussed in Chapter 18 of the Red Book.

Wildland Fire Event	Investigation Type	Management Level Requiring Notification <sup>1</sup>	Management level that determines review types and authorizes review <sup>2</sup>
Serious Wildland Fire Accident	Serious Accident Investigation (SAI) FS-Coordinated Response Protocol	National	National
Wildland Fire Accident	Accident Investigation (AI) <i>FS/NPS- FLA may be used</i>	BLM/NPS- National FS/FWS- Management Discretion	Region/State/Local

Wildland Fire Event	Investigation Type	Management Level Requiring Notification <sup>1</sup>	Management level that determines review types and authorizes review <sup>2</sup>
Entrapment/Burnover	SAI, AI, LLR, depending on severity	National	National
Fire Shelter Deployment	SAI, AI, LLR, depending on severity	National	National
Near-miss	LLR, AAR	Management Discretion	Region/State/Local
Fire Trespass	Fire Cause Determination & Trespass Investigation	Local	Local

<sup>1</sup>In the event that a wildland fire entrapment or fatality occurs, immediate notification to NICC is required. A Wildland Fire Entrapment/Fatality Initial Report (PMS 405-1) should be completed and mailed to NICC electronically or by fax machine within 24 hours. Submit this report even if some data is missing. The PMS 405-1 is located at the following web site: [http://www.nifc.gov/nicc/logistics/coord\\_forms.htm](http://www.nifc.gov/nicc/logistics/coord_forms.htm)

<sup>2</sup> Higher level management may exercise their authority to determine the type of review or investigation.

Forest Service Line Officers are the deciding officials regarding what type of accident investigation or analysis method is to be used for accidents or near misses occurring under Forest Service jurisdiction. FLAs are a type of Lessons Learned Review.

The Forest Service Fire & Aviation Management's website on Organizational Learning and Cultural Change provides information on Facilitated Learning Analysis and Accident Prevention Analysis, <http://www.fs.fed.us/fire/doctrine/org-learning.html>

Refer to the following Policy Documents for more specific direction related to incident and accident investigations.

- FSH-6709.11 - Safety
- FSM-5100 and FSH-6709.11, FSM 5720 (Aviation), FSM 5130 (Ground Operations), FSM 6730 (Specific policy), FSH 6709.12 Chapter 30 (General guidance), and most recent Accident Investigation Guide, for specific guidance.

Appendix J and L of the Red Book provide sample delegation letters for a Lesson Learned Review and a Fire and Aviation Safety Team (FAST).

## W. Critical Incident Stress Management

Chapter 7 of the Red Book provides information on Critical Incident Stress Management. A critical incident may be defined as a fatality or other event that can have serious long term effects on the agency, its employees and their families or the community. Such an event may warrant stress management assistance. The local Agency Administrator may choose to provide CISM for personnel that have been exposed to a traumatic event.

The availability of CISM teams and related resources (e.g. defusing teams) varies constantly. It is imperative that local units pre-identify CISM resources that can support local unit needs. Some incident management teams include personnel trained in CISM who can provide assistance.

Serious accidents and fatalities are the most difficult events encountered. Agency policy requires assistance with the procedures for notification and respectfully dealing with serious accidents and fatalities. References include: FSM 6730- Accident Reporting and Investigation and FSM 5320- Investigation; NWCG PMS 926- Agency Administrator's Guide to Critical Incident Management (available <http://www.nwcg.gov/sites/default/files/products/pms926.pdf>); Forest Plans regarding disaster and fatality operations. Refer to regional coordination sites for specific regional directions on IMT operating plans in regards to serious incidents and fatalities.

## **X. Burn Injuries**

Chapter 7 of the Red Book provides information on the Required Treatment for Burn Injuries.

NWCG Memo #012-2008 addresses these same Standards for Burn Injuries.  
<http://www.nwcg.gov/executive-board/correspondence>

A list of burn care facilities can be found at:  
<http://www.blm.gov/nifc/st/en/prog/fire/im.html>.

For additional NWCG incident emergency medical information see:  
<http://www.nwcg.gov/committees/incident-emergency-medical-subcommittee>

## **Part 3: Post Fire Activities**

### **I. AFTER ACTION REVIEWS**

An After Action Review (AAR) is a learning tool intended for the evaluation of an incident or project in order to improve performance by sustaining strength and correcting weaknesses. AARs should be performed as soon as possible after an event. All participants should be encouraged to provide input. The focus areas 1) What was planned, 2) What actually happened, 3) Why it happened, and 4) What can be done the same or different next time.

The Wildland Fire Leadership website is a great resource for information regarding After Action Reviews [http://www.fireleadership.gov/toolbox/after\\_action\\_review/index.html](http://www.fireleadership.gov/toolbox/after_action_review/index.html). The Leadership Committee in conjunction with the Lessons Learned Center can provide an AAR training package. Supplemental documents and other resources are also available from the website.

### **II. BURNED AREA EMERGENCY RESPONSE (BAER) TEAMS**

Chapter 11 of the Red Book provides guidance on BAER Teams. BAER teams are a standing or ad hoc group of technical specialists (e.g., hydrologists, biologists, soil scientists, etc.) that develop and may implement portions of the Burned Area Emergency Response Plans. They will meet the requirements for unescorted personnel found in Red Book Chapter 7 under "Visitors to the Fireline" when working within the perimeter of an uncontrolled wildfire. The team's skills and size should be commensurate with the size and complexity of the wildfire.

Specifically, BAER work is focused on emergency watershed rehabilitation to stabilize soil, control water runoff, sedimentation, and debris movement, and prevent threats to life, property, and other downstream values resulting from the loss of vegetation and other organic material consumed by the fire. The Line Officer is responsible for assembling the BAER team and directing the team leader. The objectives set for the BAER team will largely be determined by land management standards which apply to the area impacted by the fire and the severity of the fire on that area. The process which the BAER team will follow is set forth in FSH 2509.

Reference FSH 2509.13 Burned Area Emergency Rehabilitation Handbook.

Reference NIFC's BAER Website: [http://www.nifc.gov/BAER/Page/NIFC\\_BAER.html](http://www.nifc.gov/BAER/Page/NIFC_BAER.html)

Appendix 3 provides a sample delegation of authority letter to a BAER team.

## Part 4: Prescribed Fire Management

*This direction was updated to reflect the 2014 issuance of the 5140, which combines the 5140 and 5150. Fuels Policy and Forest Service Directives*

### I. FUELS POLICY AND FOREST SERVICE DIRECTIVES

#### A. Hazardous Fuels Management and Prescribed Fire Planning – 5141 FSM

1. Overall direction for hazardous fuels management and prescribed fire is provided by the Land/Resource Management Plan. The LRMP serves as the document to initiate, analyze, and provide the basis for implementing hazardous fuels management and prescribed fire projects to meet resource management objectives.
2. The broad direction for implementing the hazardous fuels management and prescribed fire program is documented in the Fire Management Reference System (see the Fire Management Planning Guide, <http://fsweb.wo.fs.fed.us/fire/fmp>).
3. Resource objectives for specific hazardous fuels management and prescribed fire projects are derived from the NEPA analysis. The entire project area must be analyzed under NEPA. Environmental Impact Statements (EIS), Environmental Assessments (EA), and Categorical Exclusion (CE) will be used to identify objectives and analyze the effects of hazardous fuels management and prescribed fire projects.

#### B. Prescribed Fire – 5142 FSM

##### 1. 5142.41- Deputy Chief, State and Private Forestry

The Deputy Chief must ensure coordination with the State Foresters, relevant State and Federal agencies, cooperators and partners to communicate the goals and objectives of the prescribed fire program.

##### 2. 5142.42- Washington Office, Director, Fire and Aviation Management

The Director, Fire and Aviation Management must:

1. Advise Regions of national conditions (for example, asset constraints, broad scale weather patterns, wildland fire activity, and so forth) that may compromise the ability to support prescribed fire activities.

2. Develop and support training to qualify personnel to implement prescribed fire programs.
3. Ensure collection and analysis of Regional, Unit, and project Prescribed Fire Reviews to improve policy and implementation practices.

### **3. 5142.43- Regional Foresters**

Regional Foresters must:

1. Establish guidance for approval of prescribed fire initiation based on regional conditions and resource capability; and approve or disapprove new prescribed fires or continue existing prescribed fire at National Preparedness Levels IV and V.
2. Ensure Forest Supervisors are qualified to approve Prescribed Fire Burn Plans on forests and grasslands. See FSM 5142.51 for Forest Supervisor qualifications.
3. Conduct reviews (and report review results to the Chief within 90 days) of all prescribed fires resulting in serious or multiple personal injuries; that are converted to wildfire status; that burn significant private or other agency lands, or result in the issuance of an air quality regularity Notice-of-Violation from the State, air pollution control district, and/county.

### **4. 5142.44- Regional Directors, Fire and Aviation Management**

Regional Directors, Fire and Aviation Management must:

1. Provide oversight to ensure that Forests and Grasslands apply prescribed fire safely and cost effectively to achieve Land and Resource Management Plans objectives.
2. Provide recommendations to the Regional Forester to establish guidance for approval of prescribed fire initiation based on regional conditions and resource capability; and whether to approve or disapprove new prescribed fires or continue existing prescribed fire at National Preparedness Levels IV and V.
3. Monitor conditions and advise Forests and Grasslands of conditions which may compromise successful implementation of prescribed fire activities.
4. Provide recommendations to the Regional Forester on the qualifications of Forest Supervisors to make Line Officer prescribed fire decisions on forests and grasslands. See FSM 5142.51 for Forest Supervisor qualifications.
5. Ensure forests complete a fuel treatment effectiveness assessment (see 5144) (and enter assessment results in the Fuel Treatment Effectiveness Monitoring database within 90 days of control of the fire) on all wildfires which start in or burn into a fuel treatment that has been completed within the last 10 years (within the last 3 years in the Southern Region or in portions of other regions designated by the Regional Forester).
6. Monitor prescribed fire activity and ensure accurate and timely reporting (tabular and spatial) of all Forest or Grassland prescribed fire activity.

### **5. 5142.45- Forest Supervisors**

Forest Supervisors must:

1. Approve or reject Prescribed Fire Burn Plans, ensuring that Prescribed Fire Burn Plans (RxBPs) are designed to achieve Land and Resource Management Plan objectives, and meet service-wide and regional requirements found in FSM 5142, 5143, and 5145, and the Interagency Prescribed Fire Planning and Implementation Procedures Guide. This authority may be delegated to a District Ranger on the basis of qualification, experience, and demonstrated ability (see FSM 5142.51).
2. Approve or disapprove ignition of new prescribed fire. This authority may be delegated to a District Ranger on the basis of qualification, experience, and demonstrated ability (see FSM 5140.7).
3. Request Regional Forester approval for new prescribed fire as required by Regional direction, or National direction for Preparedness Levels IV and V.
4. Ensure and document the relevant training and experience that demonstrate that personnel implementing Prescribed Fire Burn plans meet service-wide and regional requirements found in FSM 5142, 5143, and 5145, and the Interagency Prescribed Fire Planning and Implementation Procedures Guide.
5. Ensure accurate and timely reporting of all Forest or Grassland prescribed fire activity and report all wildfires resulting from prescribed fire actions to the Regional Forester within 12 hours of the wildfire declaration. Report exceedances of the National Ambient Air Quality Standards (NAAQS) to the Regional Forester as soon as practicable.
6. Conduct reviews of all prescribed fires that are converted to wildfire status. Report the results of the review to the Regional Forester within 60 days after the prescribed fire was declared a wildfire.
7. Ensure that prescribed fire personnel are trained in the After Action Review (AAR) process and that they routinely complete AARs after prescribed fire operations.
8. Conduct an administrative review or facilitated learning analysis on causes of any exceedances of the NAAQS associated with prescribed fire within three months of notification.

## **6. 5142.46- District Rangers**

District Rangers must:

1. If delegated by the Forest Supervisor, approve or disapprove ignition of new prescribed fire, or request Regional Forester approval for new prescribed fire as required by Regional direction, or National direction for Preparedness Levels IV and V.
2. If delegated by Forest Supervisor, approve or reject Prescribed Fire Burn Plans, ensuring that Prescribed Fire Burn Plans (RxBPs) are designed to achieve Land and Resource Management Plan objectives, and meet service wide and regional requirements found in FSM 5142, 5143, and 5145, and the Interagency Prescribed Fire Planning and Implementation Procedures Guide.
3. Ensure the personnel implementing Prescribed Fire Burn plans meet service-wide and regional qualifications (FSM 5142.5) and the Interagency Prescribed Fire Planning and Implementation Procedures Guide). Ensure documentation of the relevant training and experience.
4. Ensure adequate oversight and status reporting of all prescribed fires at the district level; reporting all wildfires resulting from prescribed fire actions to the Forest Supervisor within 4 hours.
5. Report potential and actual exceedances of the National Ambient Air Quality Standards (NAAQS) as soon as practicable.

## **C. Fire and Aviation Management Qualifications Handbook- 5109.17 – FSH**

This Handbook provides requirements for position qualifications and certifications in fire and aviation management.

### **1. 04.1- Washington Office**

1. The Director of Fire and Aviation must:
  - a. Delegate to the George Washington-Jefferson National Forest Qualifications and Review Committee (FQRC) the authority to review all Washington Office responder's qualifications and to recommend certification, recertification, or decertification. The George Washington-Jefferson FQRC recommends certification, recertification, or decertification to the Deputy Director, Operations who takes the appropriate action for the Washington Office responders.
  - b. Delegate to the Assistant Director, Operations, National Interagency Fire Center (NIFC) the authority to establish and maintain a NIFC Qualifications and Review Committee in order to review all NIFC and associated units (such as, National Advanced Fire and Resource Institute (NAFRI), Wildland Firefighter Apprenticeship Program (WFAP), Prescribed Fire Training Center (PFTC)) responder's qualifications and to recommend certification, recertification, or decertification.
2. Director of Law Enforcement and Investigations must:
  - a. Annually provide a listing of Washington Office duty station law enforcement personnel that meet the position qualifications for the Security Specialist Type 1 (SEC1) and Security Manager (SECM) to the Virginia Interagency Coordination Center at the George Washington-Jefferson National Forest.
  - b. Ensure all Washington Office Law Enforcement and Investigations personnel meet position requirements.

### **2. 04.3 – Regions and Area**

1. Regional Foresters and Area Director must:
  - a. Establish and maintain a Regional Qualification Review Committee (RQRC) (FSM 5120).
  - b. Supplement the fire and aviation management qualifications requirements only to comply with State or local law, such as requirements related to blood borne pathogens, first responder, and hazardous materials requirements.
2. Regional Directors, Fire and Aviation Management may:
  - a. Make exceptions to the NWCG instructor training requirements as provided in The Forest Service Fire and Aviation Qualifications Guide.
  - b. Sign Type 1 Command and General Staff incident qualification cards, if delegated that signing authority by the Regional Forester
3. Special Agent in Charge in each Region must:



- a. Annually provide a listing of law enforcement personnel assigned within the respective Region who meet the qualifications for Security Specialist Level 1 (SEC1), and Security Managers (SECM's) to the Director of Fire and Aviation Management.
  - b. Ensure all Law Enforcement and Investigations (LEI) personnel meet position requirements if they fill incident positions contained within the FSFAQG.
4. Regional Training Officers:
- a. Approve access requests for Incident Qualification and Certification System (IQCS) and forward them on to the Branch Chief, Fire & Aviation Training for submission to IQCS.
  - b. Serve as subject matter expert in their respective Region for the FSH 5109.17 and IQCS.
  - c. Assist the Regional Training Working Teams or the Operations and Workforce Development Staff with workforce analysis through reports provided in the Incident Qualifications and Certification System (IQCS).
  - d. Annually validate the status and role of IQCS users within their Region. The IQCS Security Lead or Forest Service IQCS Agency lead will update the current list of users and provide that information to the National IQCS Program Manager.
5. Regional Qualifications Review Committee (RQRC):
- a. Ensures all RQRC actions are documented and distributed to all committee members. Provides a copy of this documentation for preparedness reviews and auditing purposes.
  - b. Reviews all individuals possessing Area Command or Type 1 Command and General Staff position qualifications based on established review and certification criteria, and employee performance in the position.
  - c. Determines employee ICS qualifications in accordance with:
    - (1) The Wildland Fire Qualifications System Guide (PMS 310-1); except positions in which the Forest Service has elected to deviate from the minimums.
    - (2) The Forest Service Fire and Aviation Qualifications Guide.
  - d. Develop documented employee evaluation criteria for certification, re-certification, and deferral.
  - e. Provide recommendations to the appropriate certifying official or designee responsible for final certification signature.
  - f. Develop the Regional Shortage Category list.
  - g. Develop and provide input for regional and national training needs.
  - h. Establish instructor validation/certification system for 300-400 level course instructors (Field Manager's Course Guide PMS 901-1).
  - i. Provide additional RQRC roles and responsibilities in accordance with FSH 5109.17 direction and the goals of the RQRC.

### **3. 04.4 – Forest Supervisors**

Forest Supervisors must:

1. Establish and maintain a Forest Qualification Review Committee (FQRC) (FSFAQG, Ch 2).
2. Facilitate fair, transparent, and effective fire and aviation management qualifications determinations by the FQRC. Include a Line Officer representative and provide the opportunity for a Union Official to participate on bargaining units.
3. Ensure that fire training nomination and selection processes meet the needs of both the employee and the organization.
4. De-certify an individual's ICS and prescribed fire position qualifications pursuant to administrative review (FSFAQG, Ch 2).
5. Ensure that all required training is completed (for example: fire refresher, chainsaw, rappel, first aid, CPR, other refresher trainings, and so forth) before placement into an available status for assignment.

Forest Supervisors may delegate signing authority for the Incident Qualifications Card to the Unit Fire Program Manager for Type 2 command and general staff positions (FSFAQG, Ch. 2).

### **4. 04.6 – District Rangers**

District Ranger must:

1. If delegated by the Supervisor, sign incident qualifications cards for employees with qualifications no higher than firefighter, Type 1 (FFT1) and firefighter, Type 2 (FFT2).
2. Authorize and grants certification for employees for FFT1 and FFT2 by signing the “Agency Certification” on the inside front cover of the Position Task Book.

### **5. 04.7 – First Line Supervisors**

First line Supervisors must:

1. Prepare employees to function safely and effectively in the wildland fire environment. This preparation can be accomplished through training, education, experience, and physical fitness training. It must be tailored to the specific aviation and fireline assignments for which the employees are being prepared.
2. Identify training that reflects the needs of the Forest and Region with the aid of the Forest Fire Management Program Staff Officer.
3. Identify present and future organizational training needs and include those needs in the annual Individual Development Plan (FS-6100-2). Employees may work with the Unit Fire Training Officer to complete the Incident Responders Development Plan (IRDP) in IQCS.
4. Approve individual training requests.

## **D. Interagency Prescribed Fire Planning and Implementation Procedures Guide – April, 2014**

<http://www.nwcg.gov/sites/default/files/products/pms484.pdf>

### 1. Agency administrator responsibilities:

- Approve prescribed fire plans, and understand the risks and benefits associated with it.
- Agency administrator's approval signature (Prescribed Fire Plan Element 1, Signature Page) indicates that the prescribed fire plan meets agency policy, reflects the conditions specified in the project's NEPA decision and necessary agreements are in place.
- Ensure that only trained and qualified personnel participate in the implementation portion of the prescribed fire.
- Ensure that projects are monitored, evaluated, and documented in the project file.
- Discuss the conditions under which the prescribed fire is to be conducted with the burn boss and sign, date and establish an implementation time period on the Element 2A. Agency Administrator Ignition Authorization, PMS 485 (Element 2A Prescribed Fire Plan).
- Ensure that coordination with neighbors, cooperators and air quality regulators has occurred.
- Understand and approve the Prescribed Fire Complexity Analysis, PMS 424 (National Wildfire Coordinating Group, 2004), also see the section on Risk Management.
- Ensure that all prescribed fires are conducted in accordance with the approved implementation plan and established standards and guidelines.
- Ensure that periodic reviews and inspections of the Prescribed Fire Program are completed.
- Specify when the agency administrator is to be notified that contingency actions are being taken.
- Report all wildfires resulting from prescribed fires through the chain of command.
- Declare a prescribed fire a wildfire (if necessary and if responsibility is assigned in the plan).
- Ensure that prescribed fires declared as wildfires are reviewed according to established guidelines.
- Ensure that prescribed fires which receive a National Ambient Air Quality Standards (NAAQS) Notice of Violation (NOV) are reviewed according to established guidelines.

## **E. Chapter 17 of the Red Book, Fuels Management**

The purpose of the Hazardous Fuels Reduction (HFR) programs within the Department of the Interior (DOI) and the Forest Service is to reduce hazardous fuels (HF) and risks to human communities and improve the health of the land by creating fire-resilient landscapes and restoring fire-adapted ecosystems.

The DOI and FS, along with other federal, state, tribal, and local partners, will work to ensure effective HFR treatment efforts are collectively planned and implemented. These efforts will be consistent with the direction provided in:

- Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001) ([http://www.nifc.gov/PIO\\_bb/Policy/FederalWildlandFireManagementPolicy\\_2001.pdf](http://www.nifc.gov/PIO_bb/Policy/FederalWildlandFireManagementPolicy_2001.pdf))
- Guidance for Implementation of Federal Wildland Fire Management Policy (February 13, 2009) [http://www.nifc.gov/policies/policies\\_documents/GIFWFMP.pdf](http://www.nifc.gov/policies/policies_documents/GIFWFMP.pdf)

The federal fire agencies use the Interagency Prescribed Fire Planning and Implementation Procedures Guide (<http://www.nwccg.gov/sites/default/files/products/pms484.pdf>) to guide prescribed fire activities. This guide provides standardized procedures specifically associated with the planning and implementation of prescribed fire.

## **F. Chapter 5 of the Red Book, USDA Forest Service Wildland Fire and Aviation Program Organization and Responsibilities (for fuels management)**

### **1. Agency Administrator Positions**

Forest Service core fire management competencies:

- Knowledge of fire program management including ability to integrate fire and fuels management across all program areas and functions;
- Ability to implement fire management strategies and integrate natural resource concerns into collaborative community protection and ecosystem restoration strategies;
- Knowledge to oversee a fire management program including budget, preparedness, prevention, suppression, and hazardous fuels reduction;
- Ability to serve as an agency administrator during an incident on an assigned unit; and
- Ability to provide a fully staffed, highly qualified, and diversified firefighting workforce that exists in "safety first" and "readiness" environment.

### **2. Specific Agency Administrator Responsibilities for Fire and Aviation at the Field Level**

Responsibilities:

- Integrate fire and fuels management across all functional areas.
- Implement fire management strategies and integrate natural resource concerns into collaborative community protection and ecosystem restoration strategies on the unit.
- Manage a budget that includes fire preparedness, prevention, suppression, and hazardous fuels in an annual program of work for the unit.
- Ensure the DLA Wildland Fire Equipment Catalog is used as the primary and mandatory source of supply for wildland fire suppression equipment, supplies and protective clothing. Any deviation must follow the requirements listed in FSH 6309.32- Required Sources of Supplies and services and FAR 8.002- Priorities for Use of Government Supply Sources. The deviation must be supported by a Job Hazard Analysis (JHA) that documents the specific reason the stock item does not meet the job requirements and is signed by the applicable line officer. The purchasing official must confirm that the JHA supports the alternate purchase. The DLA Wildland Fire Equipment Catalog is at [http://www.gsa.gov/portal/mediald/237435/fileName/DLA\\_WFPP\\_Catalog23](http://www.gsa.gov/portal/mediald/237435/fileName/DLA_WFPP_Catalog23)
- Perform duties of agency administrator and maintain those qualifications.
- Provide a fully staffed, highly qualified, and diverse workforce in a "safety first" environment.
- Support and participate in wildfire prevention.

These responsibilities are based on current policy and provide program guidance to ensure safe, consistent, efficient, and effective fire and aviation operations.

#### Fuels:

- Complete a fuels treatment effectiveness assessment on all wildfires which start in or burn into a fuel treatment area.
- Enter results of the assessment in the Fuels Treatment Effectiveness Monitoring (FTEM) database found at: [www.nwportal.fs.usda.gov](http://www.nwportal.fs.usda.gov) within 90 days of control of the fire. Reference FSM 5140.

#### Prescribed Fire:

- Provide program leadership by visiting prescribed fire treatment projects and providing leader's intent to prescribed fire personnel.
- Ensure compliance with National and Regional Office policy and direction for prescribed fire activities and ensure that periodic reviews and inspections of the prescribed fire program are completed.
- Adhere to procedures for Regional and/or National level approvals for new and continued prescribed fire activities at National Preparedness Levels 4 and 5 as described in the *National Interagency Mobilization Guide*.
  - Ensure a Prescribed Fire Plan is written and approved for each project prior to implementation in accordance with the Interagency Prescribed Fire Planning and Implementation Procedures Guide available at: <http://www.nwcg.gov/sites/default/files/products/pms484.pdf>

#### Review Prescribed Fire Plans:

- Ensure that prescribed fire plan has been reviewed and recommended by a qualified technical reviewer.
- Ensure that prescribed fire plans are designed to achieve desired conditions as described in Land and Resource Management Plans and project-specific NEPA analysis.
- Approve Prescribed Fire Plans:
  - Minimum qualifications for Forest Supervisors, District Rangers, other Line Officers and formally delegated "Acting" Line Officers to approve prescribed fire plans are:
    - Completing a National or Regional Fire Management Leadership course, or
    - Completing an Agency Administrator Workshop at the National Prescribed Fire Training Center, or
    - Qualifying in a Type 1 or 2 Command and General Staff position (currency not required), or
    - Qualifying as a Prescribed Fire Manager (RXM1 or RXM2) or Prescribed Fire Manager (RXM1 or RXM2) (currency not required).
  - Attending an agency administrator session at the National Prescribed Fire Training Center (PFTC) may be substituted for the minimum training requirement of approved prescribed fire plans only.
  - Authority to approve prescribed fire plans is held at the Forest Supervisor level but may be delegated in writing to other qualified line officers or staff. Delegations should be based on meeting the minimum training or experience described above and

demonstrated ability. Documentation that supports the delegated authorities should be included in the individuals training records.

- Approve prescribed fire plan amendments and determine the need for additional technical review of proposed plan amendments prior to approval.
- Reauthorize all prescribed fire plans if more than one year has elapsed since last authorization.
- Report all instances of prescribed fires resulting in a wildfire declaration and/or air quality Notice-of-Violation as required in FSM 5140.

## II. PLANNING

### A. Guidance for Implementation of Federal Wildland Fire Management Policy

Planning- Every area with burnable vegetation must have an approved Fire Management Plan. Fire Management Plans are strategic plans that define a program to manage wildland and prescribed fires based on the area's approved land management plan. Fire Management Plans must provide for firefighter and public safety; include fire management strategies, tactics, and alternatives; address values to be protected and public health issues; and be consistent with resource management objectives, activities of the area, and environmental laws and regulations.

### B. Prescribed Fire Plan and Elements

A description of the plan elements and a Prescribed Fire Plan Template are available in the Interagency Prescribed Fire Planning and Implementation Procedures Guide:

<http://www.nwcg.gov/sites/default/files/products/pms484.pdf>

### C. Fire Management Planning Guide, 2014

<http://fsweb.wo.fs.fed.us/fire/fmp>

The Fire Management Planning Guide is a replacement for the Forest Service Handbook 5109.19. The guide introduces the Fire Management Reference System (FMRS) and Spatial Fire Planning (SFP) concept as a replacement for Fire Management Plans (FMP) references in Guidance for Implementation of Federal Wildland Fire Management Policy, February, 2009, and previous policy issuance. The SFP and the FMRS, when prepared according to this guide, will meet the intent of the Federal Wildland Fire Policy requiring an FMP for each acre of burnable vegetation.

### D. Fire Planning and Fuels Management Resource Portal

The Fire Planning and Fuels Management Resource Portal, <https://www.frames.gov/partner-sites/nwcg-fpfm/home/> hosts interagency information and resources regarding Fire Planning and Management including: Tools and resources, workshops and webinars, career pathways, training, and more.

### E. Smoke Planning and Management

Managers must comply with local and state air quality standards and regulations. Refer to local, state, and regional guidelines to meet planning and notification requirements.

Resources:

Smoke Management Guide for Prescribed and Wildland Fire 2001 Edition  
[http://www.fs.fed.us/pnw/pubs/journals/pnw\\_2001\\_ottmar001.pdf](http://www.fs.fed.us/pnw/pubs/journals/pnw_2001_ottmar001.pdf)

The national smoke management website (<http://www.nifc.gov/smoke>) provides information from the Interagency Smoke Committee (SmoC). SmoC is chartered by the National Wildfire Coordinating Group (NWCG) to provide leadership, coordination and integration of air resources and fire management objectives. The site provides information on: tools, regulations and policy, emissions, training, and publications. The website provides fire managers with information necessary for understanding the legal and operational aspects of smoke management.

The emissions and smoke portal brings together information, documents, websites and training materials on smoke management and air quality. The information provided here reflects the efforts of the NWCG Smoke Committee to provide interagency leadership, coordination, and integration of air resources and fire management objectives to support overall land management goals. It also reflects efforts of the University of Idaho to provide the best available science and information for land management professionals to apply in their work. More details can be found on the University of Idaho Emissions and Smoke Portal <https://www.frames.gov/partner-sites/emissions-and-smoke/smoke-portal-home/>.

Regulations and policies apply to smoke emissions from wildland fire. All land managers must manage smoke in accordance with the Clean Air Act and the regulations and policies of the Environmental Protection Agency (EPA). Land managers must additionally comply with state-level regulations and policies for smoke emissions occurring on lands within state borders. Federal land managers must abide by interagency smoke management policies, as well as separate regulations and policies established by their respective agencies.

<http://www.fs.fed.us/air/respon.htm> provides Forest Service Air Management Responsibilities.

### **1. FSM 5142.8 Smoke Management**

1. Coordinate prescribed fire program activities with Regional air quality specialists and Federal, State, Tribal, air pollution control district or county regulatory authorities to ensure compliance with their regulations which are supported by the Clean Air Act.
2. When multiple wildland fire events are occurring within an airshed, or any airshed is impacted by ongoing wildland fire events, fire managers will consider the cumulative impact to air quality which their management actions might cause and implement prescribed fire only if compliance with air quality regulations can be maintained.
3. All prescribed fires should be conducted using Basic Smoke Management Practices (see Basic Smoke Management Practices. USDA Natural Resources Conservation Service and Forest Service Technical Note (2011).  
[http://www.airquality.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1046311.pdf](http://www.airquality.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046311.pdf)

## **F. Fuel Treatment Effectiveness**

FSM 5144 – Assessing and Reporting Hazardous Fuels Treatment Effectiveness.

All wildfires which start in or burn into a fuel treatment that has been completed within the last ten years (within the last three years in the Southern Region) must have a fuel treatment effectiveness assessment conducted and results entered into the Fuel Treatment Effectiveness Monitoring (FTEM) database. All fuel treatment effectiveness assessments must be entered into the FTEM database within 90 days of control of the fire. Individual forests have the option of documenting interactions between wildfire and fuel treatments that are older than the ten years (three in Southern Region), where applicable.

Qualifying fuel treatments include all activities reported as fuels accomplishments in the Forest Activity Tracking System (FACTS). This includes management implemented activities (prescribed fire, mechanical thinning, and so forth) as well as unplanned events (such as wildfires, or portions of wildfires that were reported as accomplishment). Optional documentation such as written reports, photos, video, and such, may also be entered for archive in the database.

The Fuel Treatment Effectiveness Monitoring (FTEM) database can be found at the following website: [www.fireportal.usda.gov](http://www.fireportal.usda.gov). Links to the User Guide, optional reporting templates, and other information related to the FTEM reporting requirement can be found at: <http://fsweb.wo.fs.fed.us/fire/fam/fuels/hazardous.html>.

## **G. Planning Tools**

See Appendix 7.

## **III. REVIEWS**

### **A. After Action Reviews – Interagency Prescribed Fire Planning and Procedures Guide**

Each operational shift on a prescribed fire should have an informal After Action Review (AAR). Certain events or a culmination of events that may affect future prescribed fire implementation and/or policy should be submitted via the Roll-up documentation (Found at [http://www.fireleadership.gov/toolbox/after\\_action\\_review/index.html](http://www.fireleadership.gov/toolbox/after_action_review/index.html)). The questions to answer in conducting an AAR are:

- What did we set out to do (what was planned)?
- What actually happened?
- Why did it happen that way?
- What should be sustained? What can be improved?

#### **1. Declared Wildfire Review**

Every prescribed fire resulting in a wildfire declaration will receive an outcome review. Declared wildfire outcome review direction is found in agency documents: <http://www.nwcg.gov/sites/default/files/products/pms484.pdf> and FS refer o FSM 5140. Declared Wildfire Reviews will be submitted to the Wildland Fire Lessons Learned Center (LLC) by the agency fuels program lead. Submissions should be sent to [llcdocsuubmit@gmail.com](mailto:llcdocsuubmit@gmail.com) (Red Book Chapter 18).

The agency administrator will be notified of a declared wildfire. The agency administrator is required to make the proper notifications in accordance with agency policy.

The declared wildfire review process will be initiated by the appropriate agency administrator. Although other types of reviews may be required by agency policy, the minimum requirement of the declared wildfire review is to help prevent future wildfire declarations. This will be accomplished by analyzing key prescribed fire plan and implementation interactions and gathering knowledge and insight from the local participants for improvement of their own prescribed fire planning and implementation. The analysis and lessons learned are then disseminated for the benefit of the broader prescribed fire community.

Following the wildfire declaration, the burn boss should document the incident, including all actions prior to and after the declaration. To assist and prepare for the review team, a new file should be set up that includes the project file and other pertinent information.

The new file should include:

- Chronology of events
- Prescribed fire report
- Unit logs and individual statements
- Weather observations taken on site
- Remote Automated Weather Station (RAWS)
- National Fire Danger Rating System (NFDRS) data for the day of the wildfire declaration from the nearest station(s)
- Photos
- Other pertinent information not contained in the project file

In addition to the common outcome review elements, the declared wildfire review must include the following analysis and may be addressed in a separate review:

- An analysis of the seasonal severity, weather events, and on-site conditions leading up to the wildfire declaration.
- An analysis of the prescribed fire plan for consistency with agency policy and guidance related to prescribed fire planning and implementation.
- An analysis of prescribed fire implementation for consistency with the prescription, actions, and procedures in the prescribed fire plan.
- The approving agency administrator's qualifications, experience, and involvement.
- The qualifications and experience of key personnel involved.

When addressing these topics, it is recommended to clearly separate the analysis from the lessons learned process. The analysis of these topics can usually be accomplished through review of documentation.

An independent, peer-based review team is recommended for conducting a declared wildfire review. The number of individuals assigned to the team and their functional expertise should be commensurate with the scope and focus of the review and the intended products. Interagency participation is highly recommended for declared wildfire reviews.

## **B. Air Quality Notice of Violation (NOV) Review**

An Air Quality Notice of Violation (NOV) Review would follow direction in "Declared Wildfire Reviews" that support understanding of the planning, decisions, and actions taken that contributed to the NOV. In addition, the elements below which are unique to smoke incidents affecting air quality must be addressed.

The review may also utilize the *Guidance for After-Action-Review of Smoke Impacts* found at the <http://www.nifc.gov/smoke> website. At a minimum the NOV review will include:



- A discussion of the smoke-sensitive receptors, estimated smoke effects including modeling, identified in the prescribed fire plan, and any actual smoke monitoring observations and effects related to the prescribed fire project.
- A discussion of predicted versus actual ambient air quality using best on-site fuels information available (for example, fuel conditions, fire behavior, fuel consumption), emissions production (quantity and duration) and weather.
- If needed, a comparison between pre-prescribed fire smoke dispersion modeling and post-prescribed fire modeling using best on-site information available.
- Discussion of the smoke management practices used for the prescribed fire and the role of cumulative smoke impacts from other prescribed fire activities regarding how they affected the issuance of the NOV.

A separate review of all or some of the following items may be required by agency or local policy:

- An assessment of the smoke management training of personnel,
- Policies for smoke management,
- Performance

## APPENDIX 1: AGENCY ADMINISTRATOR CERTIFICATION PROCESS

### Hubbard Memo

**File Code:** 5100

**Date:** May 1, 2015

**Route To:**

**Subject:** Agency Administrator Coach-Shadow Program

**To:** Regional Foresters

We initiated a Line Officer Certification Program in 2007 to add further rigor to fire leadership by Line Officers. We also began a coaching/mentoring program to give more on-the-ground experience for an Agency Administrator (AA). While the AA program has evolved substantially, shadowing opportunities remain essential for preparing Line Officers to act as Agency Administrators during wildland fires or other critical incidents. The number of complex incidents has continued to increase demand for skilled, certified Agency Administrators. The concept and value of shadow/coach/mentoring has expanded, and I feel it is time to clarify intent and expectations around coaching and mentoring programs.

The Coaching-Shadow program was identified as a valuable method for facilitated exposure to many situations an Agency Administrator is likely to encounter, as well as the infrastructure that is part of managing on-going incidents. The refined guidelines for the program are as follows:

1. A Shadow assignment is an enrichment experience. As such, it is observational, and does not imply certification as a result. It does, however, provide tremendous context for AAs around all aspects of Incident Management. It is an important experience along the road to certification.
2. The Coaching-Shadow program may either be one-on-one opportunities, or in a 'team' structure. A Shadow is a trainee or lower-qualified AA not performing the duty of AA, but who is observing a qualified designated AA during an incident for increasing understanding of the duties. A Coach is a qualified journey- or advanced AA.
3. A Coaching – Shadow Team is a Coach and a group of 3-5 Shadows who may travel to multiple incidents and support sites to increase Shadows' level of understanding. These are typically short-term assignments, not the full duration of an incident, and may include visits to active fire areas.
4. The Coach facilitates training opportunities and documents experiences and the level of engagement of trainee(s), but does not provide evaluation for shadow assignments. At the end of the assignment, the Coach will lead an After Action Review (AAR) with the group.

Line Officer Desk Guide for Fire Program Management

5. The Shadow will maintain a journal or other form of documentation of experiences and will follow up with their home unit to review the experience and agreed upon documentation of the assignment. Following the assignment, the Shadow provides feedback on the quality of the experience and the Coach to the Regional Coaching/Shadow coordinator.
6. Each Region should establish a Regional coordinator responsible for implementation of the Coaching-Shadow program throughout fire season. The coordinator will facilitate determination of priority needs for Shadow assignments within the Region. The Coordinator(s) also maintains the list of qualified AAs (and levels), Coaches, Trainees, and their availability, and finds personnel to fill requests.

These recommendations are intended to provide consistency across Regions, and incorporate flexibility for Regional Foresters. Regional Foresters remain accountable for certification of Agency Administrators.

I am encouraged by the involvement of Line Officers in fire management and by the new programs being developed to facilitate that learning.

*/s/James E. Hubbard*

JAMES E. HUBBARD

Deputy Chief for State & Private Forestry

cc: FAM leadership

## Agency Administrator Coach Shadow Guide

April 2015

During Wildfire Incidents Agency Administrators (AA) must be prepared to make critical and informed wildfire management decisions related to land and assets under their span of authority. Classroom training is a good foundation yet, many AA's lack experience in the practical application of that classroom training on wildfire incidents. The coach-shadow program provides AA's lacking fire experience the opportunity to perform as an AA, with the oversight of a coach as an advisor. With a Coach's guidance, an AA will learn to apply policy and classroom training to an actual large and/or complex wildfire incident.

A coaching/mentoring program was initiated in 2007 to provide on-the-ground experience for an Agency Administrators. The AA program has evolved substantially and shadowing opportunities are essential for preparing Line Officers to act as Agency Administrators during wildland fires or other critical incidents. From here forward this program will be referred to as the Coach-Shadow program (Hubbard memo 2015).

### Objectives:

The objective of this program is to develop and enhance knowledge, skills and abilities to perform in the role as an Agency Administrator. The goal is to increase line officer's understanding of concepts and principles in alignment with incident complexity. This is achieved by:

- Allowing the AA trainee to work through the various aspects of an incident with an experienced Coach as an advisor.
- Allowing AA trainees to participate in Coach/Shadow team assignments.

### Eligibility:

The Agency Administrator Coaching Program is available to any Agency Administrator. It is also available as a career development tool at the discretion of the Regional Forester and Forest Supervisor. Criteria to be a trainee include:

- AA on unit that the fire is occurring, and has not met core training requirements.
- An individual currently serving as a federal AA with fire management responsibilities.
- An individual the agency is training or has the potential to be an AA.
- Is seeking to enhance their knowledge and responsibilities as an AA responsible for fire management in a practical application setting;
- The person also must have become eligible for the program in accordance with Red Book AA training requirements – (Red Book Chapter 5).

### **Program Guidance:**

Each Region should establish a regional coordinator responsible for implementation of the Coach-Shadow program throughout fire season. The Coordinator will maintain the list of qualified AA's (and levels), Coaches, Trainees, and their availability, and finds personnel to fill requests. The following are helpful suggestions for successful implementation:

- Develop a mechanism or point of contact in order to deploy Coach-Shadow Teams and Agency Administrators, e.g. establish an AA coordinator.
- A Regional LOT may review AA trainee documentation and make certification recommendations to the Regional Forester.
- Identify AA Coaches and priority trainees.

### **Coaches**

#### **Requirements**

- Must be certified at "Journey" level line officer in dealing with large fire incident, or rated at an experience level commensurate with the incident being managed.
- Is currently or has served as an AA previously, including retirees and still have the aptitude and knowledge to serve in this role.
- Is willing and able to serve as a coach and remain committed to the trainee.
- Have a clear understanding of risk based decisions for selected strategies.

#### **Role**

The role of the Coach is to advise and support (but not replace) the AA as they work through the various aspects of an incident. A coach allows the AA to be the decision maker while providing the oversight that allows the AA to gain the knowledge and understanding of their roles and responsibilities as described in the 2015 Interagency Standards for Fire and Aviation Operations – Red Book – Chapter 5. The role of the coach includes but not limited to:

- Support, teach, and advise trainee- or lesser experienced AA.
  - Support may be for the purpose of assisting lesser experienced AA during a complex incident, or to assist AA or AA(T) with advancing skills and qualifications.
- May coach one-on-one or a group of trainees.
  - Participate in a brief annual "coach the coaches" refresher and pre-season preparation.

#### **Role with a team of shadows**

- Communicate with receiving AA and Region. Establish point(s) of contact. See if in-brief is possible.
- Set up training opportunities, such as site visits.
- Communicate with trainees (team) about logistics and schedule.
- Cover logistics such as meeting place and transportation during the assignment.
- Monitor incident activity for other opportunities within the geographic area.
- Facilitate engagement and dialogue of team members.

- Documents experiences and level of engagement of trainee(s), but does not provide *evaluation* for shadow assignments. Documentation will include the following questions:
  1. What did you observe?
  2. What did you participate in?
  3. How did you engage?
  4. What did you learn?

Lead an evaluation with the group at the end of the assignment.

### **Coach Attributes**

- Adaptable to changing demands.
- General understanding of the “Big Picture” functions of an Agency Administrator.
- Understands value-based leadership and its role in decision-making.
- Solid communicator especially in areas of providing feedback (instructional and motivational feedback), facilitating unbiased discussions, and will ask open-ended questions to generate discussions.
- Aptitude to work in stressful situations in a professional manner, and be willing to share concerns as a coach.

The duration of the coaching assignment will be negotiated by the Regional Forester and Forest Supervisor. Assignment length will depend on experience level of trainee and discussions with the next level Agency Administrator and the assigned coach. If a need arises for the Coach to unexpectedly return to their home unit, the coach will not leave until a replacement coach has arrived. A back-up coach should be pre-identified.

### **Shadows**

A *Shadow* is a trainee or lower-qualified AA not performing the duty of AA, but is observing a qualified designated AA during an incident for the purpose of increasing understanding of the duties. The shadow may participate as an individual or part of a group of trainees.

- Maintain a journal or other form of documentation of experiences.
- Remain flexible to possible changes in the schedule.
- Actively observe, e.g. ask questions and be engaged.
- Be prepared to travel in active fire areas. Communicate with Coach about what clothing, gear, or supplies may be needed for the assignment.

It is essential trainees are exposed to the decision environment associated with early phases of wildfire operations and not just “large fire events”. The early phases may include the day preceding an anticipated upward surge in wildfire activity, as well as the initial attack and extended attack phases. To meet this need a Coach may be “pre-positioned” to areas forecasted to be at “imminent risk” for an outbreak of heightened wild fire activity.

During the coaching assignment, every effort will be made to help the trainee learn about the core competencies, consistent with the Fire Doctrine Principles:

- Safety
- Strategies and tactics for Cost Containment



- Incident Management Processes
- Understanding of decision support tools
- Situational Awareness of resource availability and allocation
- WFDSS
- Monitoring and Evaluation of fire operations
- Risk Management and Strategic Risk Assessment
- Social/Political awareness and interpersonal relations

To help accomplish these needs the trainee will gain experience in as many of the following elements as practical (refer to the AA Learning Action Plan – 2015)

#### Risk Management and Decision Tools

- Incident Management Team Interactions
- External Relationships and Coordination
- Overall Program Management

### **Coach-Shadow Team**

The Coach-Shadow Team replaces the concept of “LOST” (Line Officer Strike Team). The goal of coach-shadow assignments is to provide exposure to a variety of situations that an AA encounters during an incident. It is an *observational* learning assignment; certification recommendations should be reserved for active trainee assignments where tasks are being performed.

- Small groups of 3-5 people
- Short-term assignment, not full duration of incident
- Be prepared to visit active fire areas.
- Opportunities may exist to visit multiple incidents.
- Works best to travel in 1 vehicle
- Works best if team has similar certification levels

### **Documentation**

Agency Administrators that participate in the coaching program as a trainee will have their coaching documented. The coach will document each completed task on the Agency Administrator Learning Action Plan for the trainee. Evaluation and feedback should be sought by the trainee from the coach and vice versa. The Learning Action Plan can be used for multiple incidents as a long term record of experiences.

## Agency Administrator Delegations

For every incident, there needs to be a conscious decision made to insure there is a delegated AA certified to the level commensurate with the complexity of incident. For example when the home unit's Line Officer is not qualified at an Agency Administrator level commensurate with the complexity of the incident a decision will need to be made to provide the unit with an Agency Administrator who can provide the oversight and coaching. Potential solutions include but aren't limited too:

- RF retains AA authority for the incident. Unit's 'unqualified' LO remains in place and uses the incident as a training opportunity under the guidance of a qualified Coach.
- RF delegates AA authority to a fully qualified AA of the appropriate level, who may be from a different unit than the host unit of the incident, and allows the host unit LO to remain with the delegated AA either as a Shadow or trainee AA.
- RF retains AA authority but assigns a Regional Forester's Rep to the host unit. The RF Rep is an AA who is qualified at the appropriate level, and may coach the host unit's LO.
- RF assigns a qualified AA to the host unit for the incident. The LO continues to provide local area expertise, but does not perform AA duties for the incident.

### Definitions:

#### **Acting Agency Administrator**

The *Acting AA* is a fully certified AA at the level required by the incident complexity, who temporarily becomes the delegated AA in order to provide relief and support. An Acting AA may be requested in situations such as long duration incidents, multiple incidents, or the primary AA's need.

#### **Agency Administrator**

An Agency Administrator is the official responsible for the management of a geographic unit or functional area. Agency Administrators are the managing officer of an agency, division thereof, or jurisdiction having statutory responsibilities for incident mitigation and management. Some examples include: NPS Park Superintendent, BIA Agency Superintendent, USFS Forest Supervisor, BLM District Manager, FWS Refuge Manager, State Forester, Tribal Chairperson, Fire Chief, and Police Chief. Red Book chapter 11.

#### **Agency Administrator Representative**

The Agency Administrator Representative (the on-scene Agency Administrator) is responsible for representing the political, social, and economic issues of the Agency Administrator to the Incident Commander. This is accomplished by participating in the Agency Administrator briefing, in the IMT planning and strategy meetings and in the operational briefings. (Red Book chapter 11). In addition, performance of AA Rep duties may be used towards certification at for the next-level Agency Administrator.

#### **AA Trainee**

An *Agency Administrator trainee [AA(T)]* is working on certification by performing the role of AA or AA Rep by working under the supervision and authority of a qualified AA. The duties assigned to the trainee

may include AA duties not related to decision making, depending on factors such as whether or not the trainee is from the host unit and current level of qualification.

### **Coach**

A *Coach* is a fully qualified Agency Administrator at journey or advanced level. (Position of “Coach” does not formally exist, but is key to increasing the number and capacity of qualified AA’s. AA’s who are qualified and willing to be coaches will be determined by each Region, e.g. by Regional LOT.)

- Support, teach, and advise trainee- or lesser experienced AA.
- Support may be for the purpose of assisting lesser experienced AA during a complex incident, or to assist AA or AA(T) with advancing skills and qualifications.
- May coach on-on-one or a group of trainees.
- Documents experiences of the AA(T) during incident or assignment.

### **Coach-Shadow Team**

A *Coach – Shadow Team* is comprised of a qualified journey- or advanced AA acting as the Coach, and group of Shadows who may travel to multiple incidents and support sites to increase levels of understanding. This was previously known as LOST – Line Officer Strike Team.

### **Line Officer**

A Forest Service official who serves in a direct line of command from the Chief and has been delegated authority to make and execute decisions for their administrative unit(s). Examples are the deputy chiefs, Director of Law Enforcement and Investigations, regional foresters, station directors, forest supervisors, and district rangers. Line officers have authority to issue direction within delegated levels.

### **Shadow**

A *Shadow* is not performing the duty of AA, but is observing a qualified designated AA during an incident for the purpose of increasing understanding of the duties. The shadow may participate as an individual or part of a group of trainees.

### **Regional Forester Representative**

To serve as a RF Rep, an AA must be qualified at the level mandated by the incident complexity. For example, a Type I incident would require an advanced level AA to act as Regional Foresters Representative.



## Learning Action Plan

Agency Administrator Learning Action Plan – Version 6.2

### AGENCY ADMINISTRATOR TRAINEE ASSIGNMENT WILDLAND FIRE LEARNING ACTION PLAN<sup>1</sup>

The purpose of the Learning Action Plan is to provide consistency for the Agency Administrator Coach/Evaluator to evaluate trainees and document their demonstrated abilities to achieve the core competencies, which will be used as a component to achieve the next level certification. The Coach/Evaluator is encouraged to record each completed element for the trainee. Dialogue and feedback between the Coach/Evaluator and the trainee is strongly encouraged. These elements are designed to help achieve the **Core Competencies** of an Agency Administrator at the Working, Journey or Advanced level:

- Risk Management
- Incident management Processes
- WFDSS and other decision support tools
- Social, political economic impacts
- Collaboration with partners and stakeholders

These elements are not an all-inclusive list, and, there may be other skills and abilities that may be evaluated during the assignment. The elements are tiered to the standards as identified in the “Red Book,” Chapter 05 and Chapter 11, as well as the 2013 Wildland Fire Response Protocols. The Line Officer Desk Reference Guide for Fire Program Management is also a valuable resource that may be used as reference material for the trainee. All reference materials can be found on the following web site: [www.wfmrda.nwcg.gov](http://www.wfmrda.nwcg.gov).

#### Trainee Current Level

- Working
- Journey
- Advanced

Agency Administrator Trainee Name: \_\_\_\_\_

Trainee Name/Home Unit: \_\_\_\_\_

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<sup>1</sup> Line officer evaluation includes standards for training, background and experience, and demonstrated ability, which will result in a qualitative evaluation of readiness by the Regional Forester (Redbook Chapter 5).



Integrating  
science, technology  
and fire management

Wildland Fire Management RD&A

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**Evaluation 1**

Incident Name and Type: \_\_\_\_\_

Evaluation Dates: \_\_\_\_\_

Evaluator's Name (Initials): \_\_\_\_\_

Incident Location: \_\_\_\_\_

Evaluator's Home Unit: \_\_\_\_\_

**Evaluation 2**

Incident Name and Type: \_\_\_\_\_

Evaluation Dates: \_\_\_\_\_

Evaluator's Name (Initials): \_\_\_\_\_

Incident Location: \_\_\_\_\_

Evaluator's Home Unit: \_\_\_\_\_

**Evaluation 3**

Incident Name and Type: \_\_\_\_\_

Evaluation Dates: \_\_\_\_\_

Evaluator's Name (Initials): \_\_\_\_\_

Incident Location: \_\_\_\_\_

Evaluator's Home Unit: \_\_\_\_\_

**Evaluation 4**

Incident Name and Type: \_\_\_\_\_

Evaluation Dates: \_\_\_\_\_

Evaluator's Name (Initials): \_\_\_\_\_

Evaluator's Home Unit: \_\_\_\_\_

Incident Location: \_\_\_\_\_

Elements & Measures	<b>Rating:</b> <ul style="list-style-type: none"> <li>• S = Successful</li> <li>• N= Needs Additional Training,</li> <li>• O= Observed not Demonstrated</li> <li>• NR= Not Rated</li> </ul>	Remarks <sup>2</sup>
<b><u>Risk Management &amp; Decision Tools</u></b>		
Incorporates concepts of risk management and relationship to safety.		
Demonstrates good judgment in assessment current and long term risk.		
Engages in meaningful strategic Risk Assessment and Risk Decision, and consider alternatives (objectives, strategies and tactics) against desired outcomes, respondent exposure, probability of success, and values to be protected. Initially with the home unit and carry forward with the Incident Management Team.		
Participates in Wildfire Risk and Complexity Assessment process.		
Completes an Incident Risk Assessment with key stakeholders and partner agencies, to predetermine the optional response strategies for protecting values at risk.		
Actively monitors the fire situation, and the implementation and effectiveness of hazard mitigation, especially during periods of critical fire activity and/or high risk situations. Takes appropriate actions to safeguard incident responder and public safety.		
Conducts ongoing dialog on the current incident situation with Incident Commander and Fire Management Officer to assess risk and determine immediate needs on a daily basis or as the situation warrants with an emphasis on safety.		
Assures that the Periodic Assessment is undertaken to validate earlier decisions. Revises the risk decision-making process, as warranted by changing conditions.		

<sup>2</sup> Initial remarks and comments

Elements & Measures	<b>Rating:</b> <ul style="list-style-type: none"> <li>• S = Successful</li> <li>• N= Needs Additional Training,</li> <li>• O= Observed not Demonstrated</li> <li>• NR= Not Rated</li> </ul>	Remarks <sup>2</sup>
Engages in the development and publication of the Wildland Fire Decision Support System (WFDSS) decision-making and monitoring (e.g. establishing clearly written incident objectives, incident requirements, course of action, approving Management Acting Points, etc.).		
Ensures that the Risk Assessment and Risk Decision is completed and incorporated into the WFDSS decision-making.		
Demonstrates strong oversight with long duration incidents, assuring that risk assessments and risk decisions are periodically re-evaluated, with any changes incorporated into WFDSS decision-making, and, resource capacity/availability are adequately assessed.		
<b><u>Incident Management Team (IMT) Interactions</u></b>		
Provides published WFDSS, written Delegation of Authority and In-Briefing package for the incoming IMT.		
Identifies clear and specific incident objectives and concerns in Delegation of Authority and/or Briefing Package.		
Identifies unit administrative needs in the briefing (e.g., road closures, equipment authorization procedures for wilderness, permittee notifications, land use agreements, Union etc.)		
Conducts a thorough in-brief with the IMT, clearly communicating Leader's Intent/preferred strategy. Determines participants and cooperators needing to attend.		
Discusses/reviews delegation of authority with the incident commander and revise as necessary.		
Identifies and oversees local Resource Advisor (RA), Agency Administrator Representative (AAR), Incident Business Advisor (IBA) and/or Buying Unit Team to support the IMT.		
Requests the IMT's mobilization and coordinates with the Incident Commander (IC).		

Elements & Measures	<b>Rating:</b> <ul style="list-style-type: none"> <li>• S = Successful</li> <li>• N= Needs Additional Training,</li> <li>• O= Observed not Demonstrated</li> <li>• NR= Not Rated</li> </ul>	Remarks <sup>2</sup>
Negotiates team configurations based upon Wildfire Risk & Complexity Assessment.		
Engages with the IMT's deliberate risk assessment process, operational briefings, planning/strategy sessions, and/or fireline visits.		
Clearly conveys expectation to the IC, AAR and FMO about timely communications concerning incidents within an incident.		
Meets with the IBA on regular bases to actively monitor that the incident's cost objectives are being met and/or to determine if additional cost analysis beyond what the IMT is providing may be needed.		
Regularly interacts with the assigned AARs and the IC to monitor the decision's effectiveness and support their needs towards the tactical implementation of that decision.		
Coordinates with Unit FMO, Resource Advisor and IMT in the development of, and validates turn-back standards, fire suppression damage repair plans, and transition plans (to include the positions necessary for the residual incident organization).		
Deploys an interdisciplinary Burned Area Emergency Response (BAER) team as required.		
Prepares and presents the IMT Evaluation <b>in coordination with essential leadership personnel.</b>		
Actively prepares for and participates in the IMT close-out.		
Schedules and participates in During & After Action Reviews.		
<b>External Relationships &amp; Coordination</b>		
With multi-jurisdictional incidents or Unified Command, establishes and approves cost share agreements as		

Elements & Measures	<b>Rating:</b> <ul style="list-style-type: none"> <li>• S = Successful</li> <li>• N= Needs Additional Training,</li> <li>• O= Observed not Demonstrated</li> <li>• NR= Not Rated</li> </ul>	Remarks <sup>2</sup>
appropriate and engaged with any cost apportionment negotiations with partners.		
Coordinates with partner agencies and stakeholders on multi-jurisdictional fires to issue a joint Delegation of Authority (DOA), and, develop a single decision in WFDDS.		
Initiates and engages in a dialogue with line officers and stakeholders aimed at understanding, acceptance and support for the alternatives and likely decisions.		
Interfaces and/or coordinates with key external stakeholders, cooperators, and partner agencies to assure two-way risk communication.		
Participates in public fire information activities, as outlined in the DOA (e.g. community meetings, media interviews, briefings with elected officials).		
Organizes and leads the Unit's discussion with the Regional Forester (RF) Engagement Team.		
Engages regularly with senior Line Officers and political appointees and/or Congressional staff, as mutually agreed, with ongoing risk-sharing dialogue.		
Conducts risk sharing dialogue with key partners.		
<b><u>Overall Program Management</u></b>		
Incorporates concepts of risk management and relationship to safety for all aspects of fire management.		
Regularly participates in After Action Reviews with local unit personnel.		
Assures employees under their supervision understand the intent of Forest Service Policy, Wildland Fire Foundational Doctrine, risk management principles and the Federal Wildland Fire Management Policy.		

Elements & Measures	<b>Rating:</b> <ul style="list-style-type: none"> <li>• S = Successful</li> <li>• N= Needs Additional Training,</li> <li>• O= Observed not Demonstrated</li> <li>• NR= Not Rated</li> </ul>	Remarks <sup>2</sup>
Ensures sufficient qualified fire and non-fire personnel are available to support fire operations at a level commensurate with the local and national fire situation.		
Takes proactive steps to ensure all wildfire response actions are managed in an appropriate, risk informed, effective manner.		
Ensures the complexity analysis is completed for wildfires at initial size-up or through pre-planned response plans and thereafter, as appropriate, to assure the qualifications of the assigned Incident Commander are commensurate with the complexity of the incident.		
Ensures that Incident Commanders on Type 3 wildfires have no collateral duties.		
Effectively manages a budget that includes fire preparedness, prevention, suppression, and hazardous fuels in an annual program of work for the unit.		
Ensures resource management objectives are identified to maintain a current Fire Management Plan that identifies an accurate level of funding for personnel and equipment.		
Ensures scientific information is available and up to date to inform risk analyzes and decision making tools.		

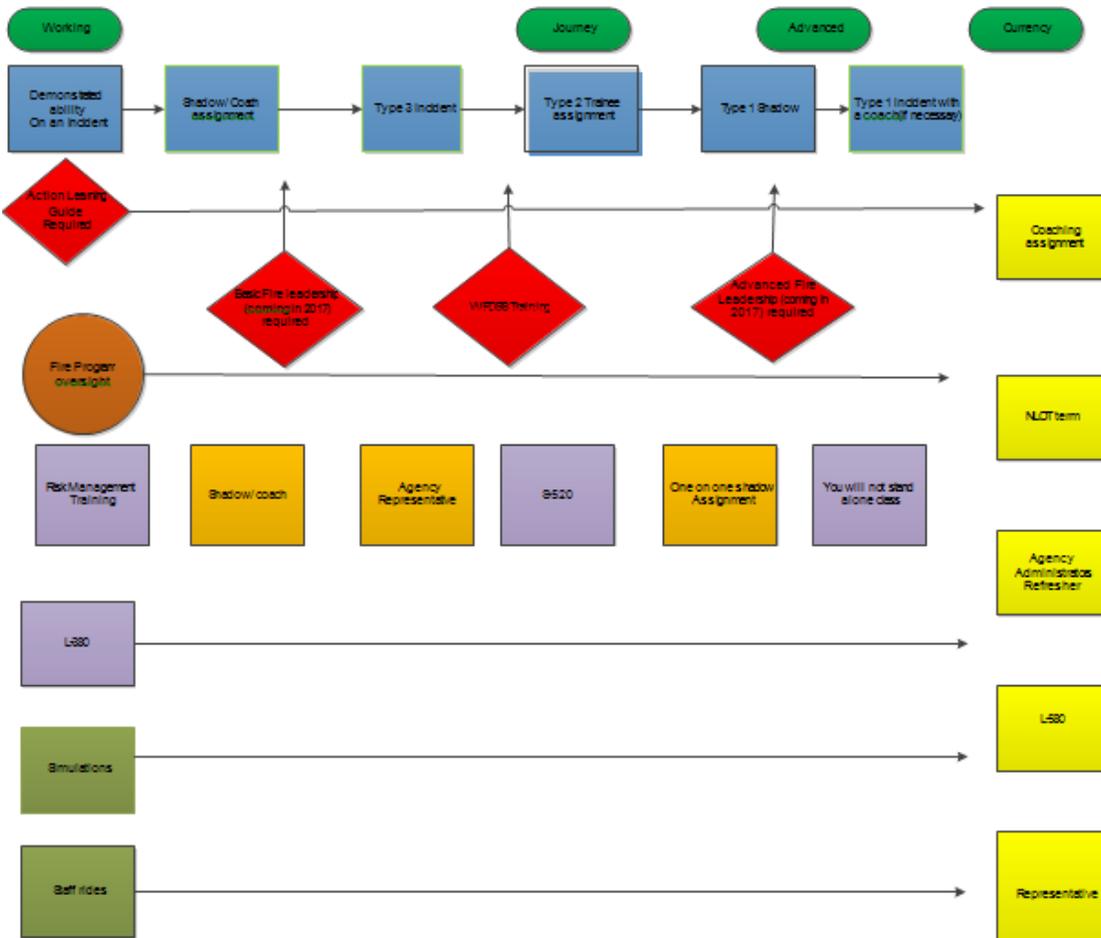
## Pathways Diagram

# Pathways Chart

This chart illustrates a menu of experiences that a supervisor can consider to certify an employee as an Agency Administrator (AA). Reading the Chart from top to bottom, the different classes or assignments are displayed as the employee gains experience. The intent is that a mixture of observed accomplishments and learning opportunities are used to certify the employee and that these experiences are commensurate with the employee's AA level. For example, it is not recommended that a Working level AA attend L-580, and be moved to the Advanced level. This is not a linear process, and the ultimate responsibility lies with the Regional Forester for certification.

### Key

- Red** = Required training
- Blue** = Action Learning Guide process
- Brown** = Acknowledgement of Complex Fire unit oversight
- Lavender** = Optional training that can be considered.
- Tan** = Suggested learning opportunities.
- Green** = Optional learning opportunities (can be done locally).
- Yellow** = Opportunities for staying current.



## APPENDIX 2: EXAMPLE LETTER - TURN BACK STANDARDS FOR IMT

The following is a summary of the Turn Back Standards the XX National Forest is providing as a guideline to **XXXXX** IMT prior to transition to a Type 3 organization.

As projected by the Operations section, the **XXXXX** incident will be 90-95 percent contained by end of the **XXXXX** (DATE) shift. One hundred percent containment is not likely due to the nature of the discontinuous fuels on Divisions A and D until interior mop-up of ragged fingers and islands have been mopped up to reduce likelihood of interior torching and spotting potential (see Recommended Mop-up Standards below).

Continue daily PALM IR flights up to, and after transition with Type 3 team. Utilize PALM IR data to prioritize mop-up as well as to monitor effectiveness of mop-up. Provide XX Forest representative/agency administrator with daily IR maps.

Division	Action	Recommended Mop-up Standard
Z	Rehab all firelines per Resource Advisor specifications. Remove all garbage at drop points and other collection points on the Division to ICP. Return all equipment to ICP supply. Pull all non-essential flagging.	Mop up to the degree necessary to make the likelihood of escape minimal based on professional experience, terrain, fuel types and fuel conditions, and current/predicted weather conditions.
W	Complete mop-up of all PALM IR identified hot spots below H16. PALM IR mission to concentrate on the ragged, partially unburned vegetation, below saddle west of H16. Rehab all firelines per Resource Advisor specifications. Remove all garbage at helispots on the Division to ICP. Pull pumps and hose, and return to helibase. Pull all non-essential flagging.	Mop-up 1 chain interior from fireline or edge of fire due to spotting potential in ragged burn.
L	Rehab all firelines per Resource Advisor specifications. Remove all garbage at drop points and helispots on the Division to ICP. Return all equipment to ICP supply. Pull all non-essential flagging. Aerial patrol of slop-overs and spots in the old XX Creek Fire.	Mop-up 1 chain interior from fireline or edge of fire.  Mop-up 1 chain on either side of XX Creek Road.
K	Monitor hotspots on south side of Middle Fork from road. Remove all garbage at drop points and other collection points. Return all equipment to ICP. Pull all non-essential flagging.	Mop-up hot areas that have potential to torch and/or smoke for long durations, within sight of the XX Road.
D	Rehab all firelines per Resource Advisor specifications. Remove all garbage at drop points and helispots on the Division to ICP. Return all equipment to ICP supply. Pull all non-essential flagging.	Mop up to the extent necessary to minimize the risk of the fire rekindling (taking into consideration terrain, aspect, fuel type, predicted weather, etc...) while not transferring unnecessary risk to firefighters. Concentrate on ragged green fingers or islands that have potential to torch and spot. One hundred percent mop-up of all spot fires outside the perimeter.

## APPENDIX 3: DELEGATION OF AUTHORITY - BAER TEAM

### MEMORANDUM

Reply To: Office of the Superintendent, Agency

Subject: Delegation of Authority, Burned Area Emergency Stabilization and Rehabilitation

To: David N. Smith, Burned Area Emergency Response Team Leader

You are hereby delegated authority and responsibility to establish an Emergency Stabilization Plan outlining emergency treatment measures and standards necessary to mitigate fire and suppression damage resulting from the \_\_\_\_\_ Fire. You will also identify and direct mitigation measures that are immediate in nature and that should be completed by the suppression organization. All rehabilitation activities will be conducted within the framework of provisions contained within Part 620: Department of Interior Manual Chapter 3; National Park Service policy, \_\_\_\_\_ policy and sound resource management practices.

Your primary responsibility is to organize and direct your assigned resources to establish and complete both short and long-term measures to protect the resources of the \_\_\_\_\_ Reservation from further damage and start the process of recovery. You are to work in cooperation with the \_\_\_\_\_ Incident Management Team, which is in charge of incident suppression and you will coordinate your activities with \_\_\_\_\_ Incident Commander. I am also directing the IMT Incident Commander, through copy of this delegation, to assist you and your team in the rapid assessment and implementation of emergency stabilization measures to protect the lives, property and critical natural and cultural resources of \_\_\_\_\_ tribes. This assistance from the IMT will include aerial reconnaissance assistance, ordering of supplies, materials, equipment, and personnel, and implementation of treatments where feasible to complete your task. You are accountable to me, or in my absence, my designated representative.

Mr. \_\_\_\_\_, Forest Manager will represent me as Line Officer when I am unavailable. \_\_\_\_\_ is designated as principle fiscal oversight and business management contact for the Agency.

---

Superintendent, XX Agency

---

Date

Cc: \_\_\_\_\_ Incident Commander

## APPENDIX 4: COST SHARE AGREEMENT TEMPLATE

### COST SHARE AGREEMENT

**Between the**

**XX AGENCY**

**And the**

**XX AGENCY**

This cost share agreement is between the agencies identified above, as negotiated for the following incident in accordance with the Statewide Cooperative Fire Protection Agreement #xx-xx executed between the parties on (date). The purpose of this agreement is to allocate financial responsibility as outlined in the XXX Fire Decision Document and to describe the cost division.

#### General Incident Information:

Incident Name:		
Incident Start Date and Time:		
Origin:		
Township:	Range:	Section:
Estimated Size:	Acres at the time of this agreement:	
Incident Cause:		

#### Incident Numbers by Protection Agency:

Agency	Incident #	Accounting Code

Cost Share Period: This agreement becomes effective on the date indicated below and will remain in effect until amended or terminated.

State date/time:

End date/time:

#### Other conditions relative to this agreement:

1. Costs incurred by cooperators not engaged with the host agency or IMT in the fire suppression activities will not be included as a part of this cost share agreement.

2. Responsibility for tort claim costs will not be a part of this agreement. Responsibility for these costs will be determined outside this agreement.
3. Costs for accountable, sensitive, and durable property purchased by each agency will be charged directly to that agency and will not be shared.
4. Non-suppression rehabilitation costs are the responsibility of the jurisdictional agency and will not be shared.
5. Each agency will bill for their costs as outlined in the XX Cooperative Fire Agreement billing procedures.

Cost Share Methodology:

Describe the chosen cost share method for this fire and the details that explain the apportionment. A map must be included that shows fire area with the methodology applied to that map.

Final Agency Apportionment:

1. Federal Share:

a.	USFS	%
b.	BLM	%
c.	FWS	%
d.	NPS	%
e.	BIA	%

2. State Share :

a.	MT	%
b.	ID	%
c.	ND	%
d.	other	%

Principal Contacts:

The following personnel are the principal contacts:

<b>Title:</b>	<b>Name:</b>	<b>Agency:</b>
Agency Administrator		
Agency Representative		
Agency Administrator		

Agency Representative		
Incident Business Advisor(s)		
Incident Commander(s)		
Other IMT members as appropriate		

Signatures of Authorized Personnel & Attachments:

This agreement and the apportionment described are our best judgments of fair and equitable agency cost responsibilities.

List and include appropriate attachments (such as I-Suite reports, Aircraft Use Reports, map, etc.):

Original Agreement: \_\_\_\_\_ (#1)

Supplemental Agreement: Number \_\_\_\_\_ Supersedes Agreement # \_\_\_\_\_ Dated \_\_\_\_\_

Agency Name: \_\_\_\_\_

Address \_\_\_\_\_

City, State Zip \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

XXNAME, Title

Agency Name: \_\_\_\_\_

Address \_\_\_\_\_

City, State Zip \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

XXNAME, Title

## APPENDIX 5: GLOSSARY OF TERMS

NWCG Glossary of Wildland Fire Terminology: <http://www.nwcg.gov/glossary-of-wildland-fire-terminology>

For a complete list of terms within WFDSS see the WFDSS Help Topic *Glossary of Terms*  
[http://wfdss.usgs.gov/wfdss\\_help/index.htm](http://wfdss.usgs.gov/wfdss_help/index.htm)

**Analysis Area:** In WFDSS, the analysis area refers to the user-defined box drawn on a map that indicates the landscape used in the fire behavior analysis.

**Burn Probability:** The probability that a specific geographic location (cell) will experience a wildland fire during a specified time period.

**Cadastral Data:** The information about rights and interest in land. Cadastral data may also be known as real estate data, parcel information, or tax parcel information ([FGDC Cadastral Subcommittee](#)).

**Constraints, Land Management:** Factors that would preclude application of a strategy at a particular time or in a particular place. Constraints could include such things as topography, weather, wildland-urban interface, land management objectives, threatened and endangered species, national or local issues, etc.

**Decision Summary:** Provides information about a decision, such as date published, estimated cost, incident Owners and Editors, reviewers, and approvers. A brief decision history shows which team members participated in developing a decision document. This summary appears automatically when a decision is published.

**Desired Condition:** The composition and structural characteristics of the plant community on a site or ecological unit which meets land management plan or other management objectives (after FSH 2090.11); or those landscape conditions that are most conducive to ecosystem health based on long-term management objectives. Desired conditions can be the same as existing conditions. Desired conditions may also refer to the state of a site or ecological unit in relation to a desired process, such as fire return interval, rather than to a specific vegetative structure or composition of the unit.

**Discovery Size:** The defined, typical size of a fire that is discovered in each Fire Management Unit. The entry is used as the starting fire size in the fire growth simulation.

**Dispatch Location:** A physical location from which fire resources respond. Dispatch locations must have facilities that support the fire resources and have a recurring operation and maintenance cost. Facilities must meet state and federal health, safety, and construction and access regulations.

**Energy Release Component:** Energy Release Component (ERC) is a number related to the available energy (BTU) per unit area (square foot) within the flaming front at the head of a fire.

**FAMWEB:** The Fire and Aviation Management Web Applications (FAMWEB) web site brings together a variety of applications, tools, and services related to interagency fire and aviation management managed by the National Wildfire Coordinating Group (NWCG) and participating agencies. The website provides detailed information, data access, and application entry points for system users, interagency partners, providers, and the public.

**FARSITE:** FARSITE is a two-dimensional fire growth simulation model that simulates fire growth and fire behavior characteristics using spatial data under conditions of fine-scale weather heterogeneity. At this time FARSITE only exists as a PC-based application.

**Final Fire Size:** The number of acres burned before the fire was considered out.

**Fire Behavior Specialist (FBS):** Fire Behavior Specialist (FBS) is a designated user role within WFDSS that was formerly called the FSPro Analyst role. The name change reflects additionally fire behavior tools available in WFDSS. Users with this role should have fire behavior modeling experience, including knowledge of historic climate, NFDRS, and forecast weather information. In addition the FBS should have experience evaluating and modifying landscape files.

**Fire Containment Time:** The elapsed time from the beginning of the modeled fire event until fire containment is achieved.

**Fire Management Plan (FMP):** A plan that identifies and integrates all wildland fire management and related activities within the context of approved land/resource management plans. It defines a program to manage wildland fires (wildfire and prescribed fire). The plan is supplemented by operational plans, including but not limited to, preparedness plans, preplanned dispatch plans, prescribed fire burn plans, and prevention plans. Fire Management Plans ensure that wildland fire management goals and components are coordinated (Guidance for Implementation of Fed Wildland Fire Mgmt. Policy).

**Fire Management Unit (FMU):** A land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regime groups, etc. that set it apart from the characteristics of an adjacent FMU. The FMU may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives ([NWCG Wildland Fire Glossary](#)).

**Fire Management Unit Constraint:** Prohibition on the use of particular fire resources specific to each fire management unit. Constraints are derived from direction provided in policy, law and/or local land management plans.

**Fire Manager:** A generic term to describe fire management leadership, generally a direct cost component. Examples: District, Unit, Forest Fire Management Officers, Assistant and Deputy FMOs, Aviation Officers, Wildland Fire Use Specialists, etc.

**Fire Perimeter:** The entire outer edge or boundary of a fire ([NWCG Wildland Fire Glossary](#)).

**Fire Planning:** Systematic, technological, and administrative management process of designing organization, facilities, and procedures, including fire use, to protect wildland from fire ([NWCG Wildland Fire Glossary](#)).

**Fire Probability:** Likelihood of a fire starting and then spreading, either outside its cell or pixel or spreading from an adjacent cell or pixel.

**Fire Progression:** The progress of the fire outwards from the point of origin ([NWCG Wildland Fire Glossary](#)).

**Fire Spread Probability (FSPro):** A web-based (within the Wildland Fire Decision Support System) geospatial model that calculates the probability of fire spread from a current fire perimeter or ignition point for a specified time period. It requires GIS landscape data (LCP file) as provided by LANDFIRE or other sources. Additionally the application requires data from a representative RAWS station so as to develop a historical data set relative to wind and ERC.

### Fire Suppression Organization

- The personnel collectively assigned to the suppression of a specific fire or group of fires.
- The personnel responsible for fire suppression within a specified area.
- The management structure, usually shown in the form of an organization chart of the persons and groups having specific responsibilities in fire suppression.

**FlamMap:** FlamMap is a two-dimensional, non-temporal fire behavior modeling system. It can be viewed as a "spatial BehavePlus" because it simply makes BehavePlus-like fire behavior calculations (for one instant in time) for all points on a landscape or analysis area using one set of wind and fuel moisture conditions. FlamMap exists as a stand-alone computer program (version 3) and an automated version implemented in WFDSS (Basic Fire Behavior). An updated stand-alone version is planned (version 5).

**FlamMap Minimum Travel Time (MTT):** FlamMap's Minimum Travel Time (MTT) is a (PC-based) two-dimensional fire growth model that calculates fire growth and behavior by searching for the set of pathways with minimum spread times from a point, line, or polygon ignition source, keeping environmental (fuel moistures and winds) conditions constant for the duration of the simulation. MTT is implemented in the stand-alone FlamMap (version 3 and the planned version 5). There is also an automated version in WFDSS (Short Term Fire Behavior).

**Geographic Area Coordination Center (GACC):** The physical location of an interagency, regional operation center for the effective coordination, mobilization and demobilization of emergency management resources. Listings of geographic coordination centers and their respective geographic coordinating areas can be found within the National Interagency Mobilization Guide, Chapter 20, Section 21.1 ([NWCG Wildland Fire Glossary](#)).

**Highly Valued Resource:** Nationally or locally defined natural resources to be protected or improved through appropriate fire management strategy ([FPA Glossary](#)).

**Incident Objectives** - Statements of guidance and direction necessary for the selection of appropriate strategy(s), and the tactical direction of resources. Incident objectives are based upon agency administrators direction and constraints. Incident objectives must be achievable and measurable, yet flexible enough to allow for strategic and tactical alternatives. ([NWCG Wildland Fire Glossary](#)).

**Incident Requirements:** Incident Requirements are developed by the local unit to provide management organizations direction in incident management. They are recommended technical and scientific specifications for management activities and/or potential actions to help achieve objectives for a site-specific area and defined time period. They provide the foundation, framework, and limitations/challenges for potential management activities.

**Initial Response (IR):** Expands the Initial Attack definition to include the response and associated workload with wildland fire responses in the broad context of appropriate management response.

**Land Management Objectives:** The objectives set forth in an approved Land Management Plan, Resource Management Plan, Fire Management Plan, or other guiding document that provide the basis for the fire management program in a designated area. The objectives identify the need for and use of fire role in a particular area and for a specific benefit. Not all land management objectives are directly related to the fire management program.

**Land Ownership:** Ownership information contained within the landscape inventory. Includes federal, state, municipal, and private ownership.

**Land/Resource Management Plan (L/RMP):** A document prepared with public participation and approved by an Agency Administrator that provides general guidance and direction for land and resource management activities for an administrative area. The L/RMP identifies the need for fire's role in a particular area and for a specific benefit. The objectives in the L/RMP provide the basis for the development of fire management objectives and the fire management program in the designated area ([NWCG Wildland Fire Glossary](#)).

**Latitude:** Part of the Lat/Long location identification.

**Longitude:** The angular distance, expressed in degrees, minutes, and seconds of a point on the earth's surface east or west of a prime meridian (usually the Greenwich Meridian). All lines of longitude are great circles that intersect the equator and pass through the North and South poles. (GSTOP)

**Management Requirements:** Management Requirements are derived from land and resource management plan and fire management plan standards and guidelines information. They represent the recommended technical and scientific specifications for management activities and/or potential actions to help achieve objectives across broad areas in general terms. They provide the foundation, framework, and limitations/challenges for potential management activities. Management Requirements are not commitments or final implementation decisions.

Example statements:

- Management of wildland and prescribed fire should avoid adding smoke into the Grand Canyon viewshed.
- Mechanical firelines should not be constructed on erosive X, Y, and Z type soils nor on slopes greater than 30 percent.
- In the Rocky Gorge management area, when perimeter control is the response to wildfire, natural barriers should be used as firelines.
- Fire camps staging areas, helibases should be located on lands that:
  - Are not forested;
  - Are adjacent to a well-maintained forest road (36 CFR 212.1);
  - Have less than 5 percent slope; and
  - Are 100 feet or more from all bodies of water, wetlands, and trails.

- Responses to wildland fire and fuels management activities should avoid loss due to fire in the Old Heritage Area.
- To avoid unacceptable risks of erosion, mechanical firelines should not occur on slopes greater than 30 percent or on the highly erosive X, Y and Z soil types.

**National Fire Danger Rating System (NFDRS):** NFDRS is a uniform fire danger rating system that focuses on the environmental factors controlling moisture content of fuels.

**Non-Federal Partners:** Refers to any entity that is not a federal government agency. This could include state organization, counties, local governments, independent fire departments, and organizations like The Nature Conservancy.

**Organizational Unit:** Refers to any of the levels (national, region, state, forest, refuge, park, district, agency, tribe, state, or other local) generally with a Line Officer or leader with responsibility for fire protection.

**Out Date:** The day it's decided that documentation for an incident is complete, all fields are up to date (including final fire size) and periodic assessments are no longer needed. Entering a date in this field will lock an incident permanently in WFDSS and edits are no longer possible.

**Planning Area:** The area on the landscape where the fire might burn on the landscape; it includes the area used for analysis and planning to manage the fire.

- Planning areas help you to establish a boundary for the area of interest around an incident. Planning areas should be large enough to include the following areas:
  - where you want to contain the fire
  - where the fire might burn (even if you don't want it to burn there)
  - where actions are planned (e.g., firelines, evacuation points)
  - planned contingencies
  - Planning areas are required for documenting a decision.

**Protection Responsibility:** Within an FPU, the portion for which an FPU partner has responsibility for responding to wildland fires.

**Remote Automated Weather Station (RAWS):** A RAWS is a GOES satellite telemetered weather station (often in a remote location) that transmits hourly observations 24 times per day used mainly to observe potential wildfire conditions.

**Spatial Fire Planning:** A planning process available in WFDSS that can spatially describe an administrative unit's Strategic Objectives and Management Requirements.

**Strategic Direction:** The general plan selected to accomplish incident objectives. There can be multiple Strategic Directions in a Course of Action to accomplish multiple objectives. The leader's intent should be reflected in the incident objectives/incident requirements and accomplished through strategic direction.

**Strategic Objectives:** These are broad statements, specified in land and resource management and Fire Management Plans that identify changes in water, soil, air, or vegetation from the present to proposed conditions but can also describe an existing resource condition that should be maintained. Objectives deal with large areas over long time periods and project intended outcomes of management activities that contribute to the maintenance or achievement of desired conditions.

**Stratified Cost Index (SCI):** Regression equation that calculates the expected suppression cost of a large fire (greater than 300 acres) given its characteristics.

**Sub-Unit:** An administrative part, such as a Ranger District, of the Planning Unit.

**Unit ID:** Unit Identification of an agency.

**Unsupervised Analysis:** Basic fire behavior analysis that is run without the assistance of a fire behavior specialist.

**Value Inventory:** Personal, municipal, state, or federal property found in a particular locale. This list includes, but is not limited to, cultural assets, threatened and endangered species habitat, utility infrastructures.

**Values At Risk:** Personal, municipal, state, or federal property that is near the predicted path of a wildland fire. This list includes, but is not limited to, cultural assets, threatened and endangered species habitat, utility infrastructures. Fire spread probability analyses help managers determine the likelihood of a particular asset being damaged by an incident.

**WFDSS:** Wildland Fire Decision Support System. This decision support system is intended to assist wildland fire managers in assessing risks and fire behavior during an event.

**WFDSS Basic Fire Behavior:** The automated version of WFDSS Basic Fire Behavior (BFB) is a very simple way to get "snapshot in time" fire behavior outputs for every cell of an analysis area. It can be thought of as a "spatial BEHAVE" (or BehavePlus). BFB is web-based and is essentially an automated version of FlamMap Basic (desktop).

**WFDSS Production System:** The live system where actual wildland fires are recorded, tracked, and reported. This system is used in analyzing real events and should not be used to create "what-if" scenarios or for practice. Users who abuse the system will be barred from the system and their supervisors will be notified. The Production Login Site is: [https://wfdss.usgs.gov/wfdss\\_proto/faces/jsp/login/WFDSSLogin.jsp](https://wfdss.usgs.gov/wfdss_proto/faces/jsp/login/WFDSSLogin.jsp)

**WFDSS Training System:** The training system can be utilized for training, testing, and creating "what-if" scenarios and generally for practice. It should not be used for real events. Documentation of real incidents occurs in the Production system. The Training Login Site is: <https://wfdss.usgs.gov/training/faces/jsp/login/WFDSSLogin.jsp>

**WFDSS Short Term Fire Behavior:** WFDSS Short Term Fire Behavior (STFB) is a two-dimensional fire growth model. This web-based (mostly automated) application calculates spread rates and maximum spread direction at each cell. Using one set of wind and fuel moisture conditions, it provides potential fire spread (arrival times and major paths) for a user-defined length of time. STFB is essentially a web-based version of FlamMap's Minimum Travel Time (MTT) which is a desktop application.

## **APPENDIX 6: COMMON ACRONYMS**

AA- Agency Administrator

AAR- After Action Review

AD- Administratively Determined

AI- Accident Investigation

APA- Accident Prevention Analysis

ARA- Air Resource Advisor

BAER- Burned Area Emergency Response

BFB- Basic Fire Behavior

BI- Burning Index

BIA- Bureau of Indian Affairs

BLM- Bureau of Land Management

CISM- Critical Incident Stress Management

COA- Course of Action

DSG- Decision Support Group

ERC- Energy Release Component

FAST- Fire and Aviation Safety Team

FACTS- Forest Service Activity Tracking System

FBAN- Fire Behavior Analyst

FLA- Facilitated Learning Analysis

FLAME (Act)- Federal Lands Assistance, Management and Enhancement Act

FMO- Fire Management Officer

FMP- Fire Management Plan

FMU- Fire Management Unit

FS- Forest Service

FSH- Forest Service Handbook

FSM- Forest Service Manual

FSPRO- Fire Spread Probability

FWS- Fish and Wildlife Service

GA Editor/ GAE- Geographic Area Editor

GACC- Geographic Area Coordination Center

GIS- Geographic Information System

GMAC- Geographical Multi- Agency Coordination  
IAP- Incident Action Plan  
IBA (I, II)- Incident Business Advisor (One and Two)  
IC- Incident Commander  
ICS- Incident Command System  
IIBMH- Interagency Incident Business Management Handbook  
IMT- Incident Management Team  
InciWeb- Incident Website  
IRPG- Incident Response Pocket Guide  
LANDFIRE- Landscape Fire and Resource Management Planning  
LLC- Lessons Learned Center  
LLR- Lessons Learned Review  
LOT- Line Officer Team  
LRMP- Land and Resource Management Plan  
LTAN- Long Term Analyst  
LTIP- Long Term Implementation Plan  
MAC- Multi-Agency Coordination  
M.A.P.- Management Action Point  
MIST- Minimum Impact Suppression Tactics  
MTT- Minimum Travel Time  
NASF- National Association of State Foresters  
NFDRS- National Fire Danger Rating System  
NFDSC- National Fire Decision Support Center  
NICC- National Interagency Coordination Center  
NIFC- National Interagency Fire Center  
NMAC- National Multi- Agency Coordination  
NPS- National Park Service  
NRR- National Ready Reserve  
NTFB- Near Term Fire Behavior  
NWCG- National Wildfire Coordination Group  
ONA- Organizational Needs Assessment  
OSHA- Occupational Safety and Health Administration

PAO- Public Affairs Officer

PIO- Public Information Officer

PMS- Product Management System

PPE- Personal Protective Equipment

RA- Resource Advisor

RAWS- Remote Automatic Weather Station

RCA- Risk and Complexity Assessment

RFR- Regional Forester's Representative

SAI- Serious Accident Investigation

SC- Spread Component

SCI- Stratified Cost Index

SIP- Strategic Implementation Plan

SOP- Standard Operating Plan

SOPL- Strategic Operational Planner

STFB- Short Term Fire Behavior

TEPC- Threatened, Endangered, Protected, Candidate

USFA- United State Fire Administration

VAR- Values At Risk

VI- Values Inventory

WFDSS- Wildland Fire Decision Support System

WFIP- Wildland Fire Implementation Plan

WFM RDA-Wildland Fire Management Research Development and Application

WFSA- Wildland Fire Situation Analysis

WIMS- Weather Information Management System

## APPENDIX 7: PLANNING TOOLS

Many individual tools and programs exist to aid specialists and managers in fuels treatment planning. Below are some (not all) of the programs and tools that have been used by agency personnel to plan and model effects of fuels treatments on fuel loading, hazards, soil effect, smoke, etc.

### A. ArcFuels

[www.arcfuels.org](http://www.arcfuels.org) ArcFuels is a library of ArcGIS macros developed to streamline fire behavior modeling and spatial analyses for fuel treatment planning. The program links: 1) key wildfire behavior models; 2) fuels and vegetation data (e.g. LANDFIRE, FVS databases); 3) MS Office, and 4) ArcGIS. ArcFuels is used to rapidly design and test fuel treatments at the stand and landscape scale via linkages to models such as FVS-FFE (Forest Vegetation Simulator with the Fire and Fuels Extension), SVS (Stand Visualization System), FARSITE (Fire Area Simulator), FlamMap, Nexus, and FVS (Forest Vegetation Simulator) within a spatial interface. The ArcMap framework helps specialists leverage local data to address project-specific issues that typify many fuel treatment projects.

### B. IFTDSS

<http://iftdss.firenet.gov> IFTDSS is a web-based software and data integration framework that organizes previously existing and newly developed fire and fuels software applications to make fuels treatment planning and analysis more efficient and effective. IFTDSS has been developed for fuels treatment specialists by fuels treatment specialists. On May 30, 2014 the Wildland Fire Information and Technology (WFIT) Executive Board formally approved IFTDSS for further planning and development toward eventual operational deployment. The Wildland Fire Management Research Development & Application (WFM RD&A) team will provide the management of IFTDSS going forward. IFTDSS will be beta until 2017.

### C. Wildland Fire Management RD&A- Fuels and Fire Ecology

<http://www.frames.gov/partner-sites/wfmrda-ffe/home> The primary mission to "coordinate, develop, and transfer consistent, efficient, and science-based fuel and fire ecology technology" is still relevant under the Fuels and Fire Ecology portion of the WFM RD&A. Expect to see integration of current tools into online applications, state-of-the-art training materials, videos and dynamic learning experiences.

### D. Consume

<http://www.fs.fed.us/pnw/fera/research/smoke/consume/index.shtml> Consume is a decision-making tool designed to assist resource managers in planning for prescribed fire, wildland fire for use, and wildfire. Consume predicts fuel consumption, pollutant emissions, and heat release based on a number of factors including fuel loadings, fuel moisture, and other environmental factors. Using these predictions, resource managers can determine when and where to conduct a prescribed burn or plan for a wildland fire to achieve desired objectives, while reducing the impact on other resources.

### E. Smoke Modeling Tools

Many smoke and air quality monitoring modeling tools exist to assist fire managers in planning and implementation of prescribed fire.

- a. AirFire tools <http://firesmoke.us/wfdss/>

The Pacific Northwest Research Station's AirFire works on applied meteorology, climatology, and air quality science problems for land and fire decision support nationwide. AirFire Tools include smoke point forecasts, smoke regional maps, wind analysis, climate graphs of ventilation indices, air quality maps, smoke trajectories, and fuels and consumption smoke modeling.

- b. VSmoke <http://shrmc.ggy.uga.edu/maps/vsmoke.html>

VSMOKE is a computer-based model for predicting concentrations of fine particulate matter and cross-plume visibility from prescribed fires. It is used extensively in the Southeast by state and federal agencies. VSMOKE is based on weather conditions and smoke-related problems found in the eastern United States, generally in flat or rolling topography. It was designed for single, low-to-moderate intensity surface fires and dry weather visibility impacts. Dry weather visibility generally means daytime use rather than at night when humidity levels rise.

- c. Simple Smoke Screening Tool <http://shmc.ggy.uga.edu/maps/screen.html>

This is a simple screening tool designed to help identify smoke sensitive targets, not to predict smoke concentrations. The online simple smoke screening tool is a simple, easy-to-use application that relies on google maps and the methodology laid out in the Southern Forestry Smoke Management Guide.

## APPENDIX 8: WFDSS GUIDANCE

The following provides guidance on utilizing WFDSS from the Agency Administrator perspective.

### I. COMMON WFDSS LINE OFFICER QUESTIONS

#### A. Who Should be Involved in Developing the Decision?

As the Planning Area is developed for a fire and affected land and resources are determined, it is imperative that other experts and specialists get involved in developing a decision. If the fire will affect other agency lands, they too would likely become a signatory/approver for a decision.

- Cooperators (Agency and Non-Agency)
- Resource Management Specialists
- Cultural Resource Specialists
- Is the fire being managed under unified command? If so has the unified command been involved with developing and publishing a decision?

#### B. What User Roles Do I Need within WFDSS?

At a minimum the Approver will need to have the WFDSS “Viewer” role. This role is automatically granted when a user creates an account. The Viewer role allows individuals to view incident information for all incidents and view completed analyses and published decisions and reports.

As a Viewer you can be granted either “Approver” or “Reviewer” privileges for specific incidents by the Incident Owner(s). Incident Approvers are by default granted editing privileges for an incident, but edit privileges can be removed by Incident Owners if desired.

##### 1. Decision Reviewer

Reviewers are responsible for examining the documentation related to an incident decision, and indicate whether their review is complete or to reject a decision.

- If a decision is rejected, the Reviewer needs to include comments in the box provided as to why it was rejected. A rejected decision goes back into editable status and can be edited.
- Marking a decision as Reviewed, *does not* mean that it is approved. A decision can only be approved by the Approver(s).

Reviewers must meet the following criteria:

- Have the authority and knowledge to adequately review an incident decision within the Geographical Area where the incident is located.
- Understand the decision process and budgetary requirements for an incident.
- Have an active WFDSS account with any user role.

While a Reviewer can also be an Editor, he/she cannot be an Approver for that incident. The Reviewer privilege allows the Owner(s) to grant access to specialists who might have specific input on a decision, but do not have the fiscal authority to approve a decision.

## 2. Decision Approver

Approvers are responsible for examining the documentation related to an incident decision, and indicating whether they approve or reject a decision.

- Approving a decision adds it to the system of record for the incident. Once a decision is approved, it can't be altered.
- If there is more than one designated Approver for an incident, all must approve a decision before it becomes published and part of the system of record.
- Approvers should ensure all review is complete prior to approving a decision.

Decision Approvers must have the financial authority to sign-off on an incident decision.

### C. How Do I Request User Roles?

To establish the "Viewer" user role (basic role needed to be granted an incident privilege) to track, review, or approve incidents the applicant must request an account through WFDSS. Once an account is set up, the user has access to both the Production and the Training applications using the same user name and password; although your user privileges might be different in each system.

The applicant must provide their federal email address in the appropriate field; this provides the administrator approving the applications validity that the individual has completed required federal security training. Non-federal employees are approved as needed to support the interagency fire management mission, but are required to provide proof of security awareness training.

You can access the Request Account page from the WFDSS Home Page left hand menu (<http://wfdss.usgs.gov>), or from either the Production or Training login pages by selecting the *Request new account* link. The Request User Account page provides the required information.

Once your request is approved, you will receive an email confirming your user name and password. If you don't receive an email with your password within a couple of hours of submitting your request, please contact the WFDSS Help Desk ([IIA-Helpdesk@fs.fed.us](mailto:IIA-Helpdesk@fs.fed.us)) or 1 (866) 224-7677. The basic WFDSS user role is a Viewer. For more information refer to the WFDSS Help section *Requesting an Account* [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_request\\_acct.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_request_acct.html)

### D. How are Incident Specific Objectives and Requirements Developed?

Incident Objectives and Requirements are specific to the incident. Incident Objectives and Requirements are entered into WFDSS after the incident is created and a Planning Area is established. Incident Objectives and Requirements should define what the leader's intent is for the incident as well as indicate any restrictions on managing the fire. All objectives and requirements must be in line with unit planning documents, such as Fire Management Plans and Land and Resource Management Plans.

- Be sure incident objectives apply specifically to the current fire. Often incident objectives are overwhelmingly generic and could be applied to any fire in the country. Do not restate broad policy, core values and doctrine, or make general resource protection or restoration statements.
- Be cognizant of how many objectives are developed. Too many (often greater than five) may be difficult for an IMT to successfully achieve.
- Ensure incident objectives are written in a way that they are applicable to specific fire incidents.
- When logical prioritize incident objectives. Prioritizing helps IMTs have a clear understanding of the Line Officer's intent for the incident and where his/her priorities lie when resources are scarce.

- Ensure incident objectives (along with the rest of the published WFDSS decision) are available to the IMT at the earliest possible time so that they can be incorporated into the teams management from the beginning.

## E. How Does the Relative Risk Assessment Inform a Decision?

The Relative Risk Assessment is required before publishing a decision. Its purpose is to assist with planning, assessing, and managing an incident. The Relative Risk Assessment is comprised of three separate assessments: Hazard, Values, and Probability. By assessing the risk in these three areas and assigning a Potential Fire Duration a cumulative Relative Risk value will be assigned. WFDSS will provide a list of recommendations, and if they exist, inconsistencies in the assessment. Managers should review the recommendations and clarify any inconsistencies. Managers should utilize the 'Notes' sections next to each chart to document their thought process. The information included in the Notes sections are by default included in decision content in the Validation section. The Relative Risk Assessment can be updated at anytime throughout the life of the fire.

For instruction on completing the Relative Risk Assessment view the *Wildland Fire Relative Risk Assessment* Topic from the WFDSS help [http://wfdss.usgs.gov/wfdss\\_help/4035.htm](http://wfdss.usgs.gov/wfdss_help/4035.htm), which contains sections on *Three Risk Components*, *Value Assessment*, *Hazard Assessment* and *Probability Assessment*.

The Relative Risk Assessment provides text space and relative risk charts to aid in determining and documenting firefighter risk and exposure. Intelligence gathered from the Situation map may also provide insight into firefighter risk, such as terrain, estimated ground evacuation time, topography, barriers to spread such as bodies of water or past fire scars, weather forecasts, etc.

## F. How is the Course of Action Developed?

The Course of Action is developed by strategically thinking about the incident. These actions support the incident objectives and provide the guidance for overall management of an incident; providing direction to incident personnel for tactical decision making.

Be sure to include the overall fire strategy to give clear guidance to the IMT. A Strategy slider box can be used to indicate the overall fire strategy on a continuum from monitor to full suppression. A comment box is available to provide further detail regarding the strategy for the incident.

The Course of Action should inform the IC of the true leader's intent on how aggressively the Agency Administrator wants the fire managed. Make sure that the COA and the incident objectives are in alignment.

For more information on completing, editing, deleting, and validating a Course of Action view the *Course of Action* topics in the WFDSS Help, [http://wfdss.usgs.gov/wfdss\\_help/4365.htm](http://wfdss.usgs.gov/wfdss_help/4365.htm)

## G. What Cost Estimate Tools are Available?

Multiple tools are available in WFDSS to estimate the final cost of a proposed Course of Action.

- SCI: The Stratified Cost Index (SCI) tool (available under the Cost tab) can be used to estimate federal wildland fire costs in the continental U.S. Cost estimates are based on 5-10 years of historical fire costs. It isn't valid for fires less than 300 acres in size. See the *Stratified Cost Index* Topic from the WFDSS Help [http://wfdss.usgs.gov/wfdss\\_help/WFDSS\\_Help\\_SCI.html](http://wfdss.usgs.gov/wfdss_help/WFDSS_Help_SCI.html)
- Historic Costs: If historical fire costs for a unit are known those cost estimates can be used.

- e-ISuite Projection: The e-ISuite application consists of Resource, Cost, Time, Incident Action Plan, and Supply Units, supporting an incident. This information can be used as “real” time information for the management of an incident, or it can be used to help build a historical financial database for a specific unit.
- Cost Spreadsheet: A cost spread sheet can be downloaded from the Cost tab. The spreadsheet contains estimated costs for teams, crews, equipment, aircraft etc. and can be used to estimate potential final costs.

## H. How Much Information Should be Included in a Decision?

Decision content should contain any and all relevant information used to determine and support the Course of Action and Action Items. This can include weather and fire behavior forecasts, map screen captures of values at risk or the Planning Area, economic assessments, images of fuel conditions or M.A.P.'s, and much more. Decision content does not need to include tactical direction which would be better suited for an Incident Action Plan (IAP). If the fire is being managed for the long term consider including long term predictive information.

### I. How are potential smoke impacts included in a decision?

A seven day Smoke Dispersion Forecast is available by selecting *Smoke Dispersion* from the sub-tab *Info* on the *Situation* tab. It provides projections of mixing height, transport winds, ventilation rates, Haines indices, and PM2.5 values.

- Smoke and air quality tools are available from the “Fire Related Links” (left hand menu).
- Other analysis or air quality information that was used to inform a decision can be entered into decision content from the Decisions tab. View the topic on *WFDSS Decision* from the WFDSS Help for information regarding editing and adding content to a decision, [http://wfdss.usgs.gov/wfdss\\_help/5054.htm](http://wfdss.usgs.gov/wfdss_help/5054.htm)

Air quality impacts from a wildfire need to be considered in three specific risk areas for the anticipated duration of the incident: public health impacts, public as well as fire personnel exposure, and transportation safety. A seven day Smoke dispersion forecast and other links in WFDSS can aid in assessing public health impacts. Risks to transportation corridors used by the public and/or fire personnel need to be assessed in combination with the IMT coordinating with local personnel. Fire personnel exposure may change over the duration of the incident but should include smoke impacts to spike camps, aviation assets, ICP and base camps, arduous worker exposure and non-arduous worker exposure. (NWCG June 12, 2012 Monitoring and Mitigating Exposure to Carbon Monoxide and Particulates at Incident Base Camps) <http://www.nwcg.gov/sites/default/files/memos/eb-m-12-006.pdf>

Smoke impacts and resources can be used to help justify Course of Actions, or to help weigh out the various alternatives and potential impacts to adjacent populations.

### J. How can alternatives be compared within a decision?

WFDSS decision content sections provide an ‘open slate’ for decision makers to document comparisons of any nature. Text can be copied and pasted into decision content sections or users can type comparative information directly into decision content. Tables can be screen captured and uploaded into decisions as images or created using the custom Risk Table feature. Fire behavior requests can be initiated to evaluate different scenarios for a variety of possible actions.

## II. DOCUMENTING A DECISION

Incident Owners and Editors use the Decision Editors to create and edit decision content, which tells the story of the incident by incorporating Incident Information, Weather, Modeling, Risk, Benefits, Objectives, Courses of Action, Cost,

and Rationale. Approvers are by default Editors of an incident and in this capacity they can assist with the documentation process. Once a decision is documented Incident Owners submit it for Review/Approval. The section below describes the components of a decision and discusses items to think about while creating/editing decision content.

## **A. Using the Decision Editor**

In order to view and/or edit content included in the WFDSS decision, first a draft decision must be created via the Decision tab. From the Decision tab, editing a decision can be accomplished using either the Default or Advanced Decision Editors which are both accessible on the Decisions tab.

Default Decision Editor editing is accomplished in each individual section and previously uploaded images and content are quickly accessible for insertion. This editing option provides a simplified approach to creating a decision that is intuitive and meets the needs of most incidents, regardless of complexity.

Advanced Decision Editor editing is accomplished via the Text Editor; content is added from the Incident Content Tree (all incident content) to the Decision Content Tree (current pending decisions content). This editor provides advanced editing features not available in the Default Decision Editor and may be useful for complex decision documents with extensive text, tables and images.

The interface for editing a decision is different for each editor, however the editable sections of a decision remain the same.

Both decision editors allow multiple Owners or Editors to work on a decision simultaneously. This strategy is more efficient and helps a unit produce a decision document more quickly than if multiple users work together in one WFDSS account. Users can check out and edit a portion of the decision and check it back in when they are finished. Checked out portions of a decision can only be edited by the user that check it out, to eliminate the risk of multiple editors 'walking' on each other. A decisions consist nine parts and you can select/check out the full pending decision for editing or just a section. Typically, it is best to just edit one section of a document at a time. This enables other users to edit other sections of the decision at the same time. When a decision or its sections show as Available in the status column, the decision and its parts are available for editing and are not checked out by Incident Owners or Editor.

## **B. Incident Information**

This section is auto-populated with a summary of the incident information as well as the incident map. Add content here to enhance the basic incident information including but not limited to:

- Cooperators
- Unified Command
- Individuals involved in developing the Decision Documentation
- Maps or pictures depicting important features of the fire area

## **C. Weather**

The Weather section contains the current weather forecast for the planning area. Additional information to consider adding includes:

- Spot weather forecasts
- Incident Meteorologist forecasts
- Long-term fire weather assessment
- Drought Assessment
- Include images, text, data or analyses

## **D. Modeling**

The Modeling section is intended for analysis products produced inside or outside WFDSS. In the Default Decision Editor one can choose from a drop down menu the current or completed WFDSS-generated analyses to include within the decision. Modeled outputs generated outside of WFDSS, such as for smoke, can be screen captured, uploaded and added as images.

Consider including additional information to help support the decision documentation, potential items to include:

- Long term assessment information from local experts or fire behavior personnel
- Fire Behavior Assessments (Short, Near and/or Long Term)
- Additional Risk Assessment information
- Other analysis products produced inside or outside of the application e.g. smoke modeling, or predictive services information
- Contingency planning or Contingency assessments

## **E. Risk**

The Risk section is to document support and describe the risk assessment. The Relative Risk and Organization Assessment are required. Optional content can be included in a decision by selecting a check box. Additional information to consider including:

- Relative Risk Chart
- Relative Risk Input Charts
- Organization Assessment Chart
- Organization Assessment Inputs Chart
- Customized Risk Tables
- Point of Origin Values Inventory
- Current Fire Perimeter Values Inventory
- FSPro Values at Risk
- Additional text and or/uploaded images

## **F. Benefits**

The Benefits section of a decision contains a Benefits slider bar to show the amount of benefit expected from a fire and an associated comment box to document and describe the natural resource, intrinsic and or other benefits of the fires.

These tools are available from the Benefits vertical tab if using the default decision editor or they can be accessed from the Assessment tab of the incident if you are using the advanced decision editor for decision editing.

The Benefits slider and comment box are optional.

## G. Incident Objectives and Incident Requirements

This section includes the Fire Management Units or Strategic Objectives shapes within the Planning Area and the associated Strategic Objectives & Management Requirements as well as Incident Objectives and Incident Requirements.

Strategic Objectives and Management Requirements come from the Fire Management Plans and the Land/Resource plans. They are then tiered down to specific Incident Objectives and Incident Requirements for the Planning Area. For example, a units Strategic Objective for a given area provides the desired condition, standard, guideline or objective relating to management of the land; the incident objectives and requirement should directly relate to what that guidance means for the current fire at hand under the current and expected conditions.

When Incident Objectives are written in a specific manner with context, it increases the likelihood that they are understood and can be achieved. Additionally, they should include content that is specific to the location, conditions, and time of the fire. They include context on the intent and reasoning behind the objective statement. When the intent and reasoning (the “why”) behind an Incident Objective is included in concise form, it increases the ability of all persons involved in a fire to understand and make site- and time-specific decisions about actions to take.

Ensure Incident Objectives and requirements are included and excluded appropriately; modifications can be made from the Objectives tab. Ensure that all Incident Objectives are documented and achievable. If necessary, add content to this section to document the issues/concerns/mediations.

For more information see the Topic on *Incident Objectives and Requirements*  
[http://wfdss.usgs.gov/wfdss\\_help/4368.htm](http://wfdss.usgs.gov/wfdss_help/4368.htm)

## H. Course of Actions

The Course of Action (COA) is comprised of one or more Action Items that an Incident Owner or Editor develops to accomplish Incident Objectives and/or Requirement and a Strategy slider bar. Use this section to clearly define the strategy and actions to the IMT. An Action Item can be edited until it is included in a pending decision that has been submitted for review. As you are developing Action Items make sure they will accomplish the Incident Objectives or Requirements, and if they won't; the Action Item(s) should be modified or make a determination that they will achieve an Incident Objective or Requirement that hasn't yet been created. Creating a Course of Action can help you identify gaps in your Incident Objectives and Requirements.

Create Action Items in a way that an individual Action Item can be easily excluded from a pending decision if it's no longer applicable. If the planning area is modified or new Incident Objectives and Requirements are added to a pending decision, the proposed COA should be modified, as needed, to ensure that it will accomplish Incident Objectives and Requirements and address recent changes. A new COA, and a new decision is warranted if the current, published COA no longer accomplishes Incident Objectives and Requirements. Review maps, images or photos that were uploaded to help clarify the situation.

If you choose, use the Strategy slider bar to communicate the overall strategy for the fire (its use is optional). Add comments as necessary to clarify the Course of Action and/or identify priorities.

Consider the following:

- What type of actions will meet unit(s) strategic objectives and management requirements?

- Are local resources available, or are additional resources needed for incident management, and are they available?
- Does the incident have potential to spread to adjoining land ownerships?
- Are fiscal authorities a concern?
- Are there environmental/political concerns that will have an effect on the management of the incident (smoke, area closures, agreements with other parties, time of year etc.).

For more information see the Topic on *Course of Actions* from the WFDSS Help, [http://wfdss.usgs.gov/wfdss\\_help/WFDSS\\_Help\\_about\\_decisions\\_coa.html](http://wfdss.usgs.gov/wfdss_help/WFDSS_Help_about_decisions_coa.html).

Are more images needed for supporting documentation? View the WFDSS Help sections *Uploading Images* and *Capturing Map Images* from the *Maps and Shapes* Topic, [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_map\\_shapes.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_map_shapes.html)

## I. Cost

Use this section to provide the estimated final cost of for the incident based on the Course of Action(s). Select the method used to estimate the cost from the options available: the cost estimator spreadsheet, Stratified Cost Index, Historic costs, ICRS, or other. In order to update the cost a new decision will need to be created and published.

For more information see the Topic on *Estimating Final Cost for an Incident* from the WFDSS Help, [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Est\\_Cost\\_Incident\\_1.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Est_Cost_Incident_1.html)

## J. Rationale

This section documents why a decision was made to implement the Course of Action. Consider the following:

- What influenced managers to make this decision?
- What caused managers to choose the Course of Action?
- What are the causes and influences on the incident?
- What are the social and political concerns/pressures?
- What does the Relative Risk tell the user?
- Are there air quality and smoke concerns?
- What Fire Behavior Models informed your decision?
- Was the qualitative and quantitative decision support documented elsewhere?

For more information see the Topic on *About Decisions: Rationale* in the WFDSS Help, [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_About\\_Rationale.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_About_Rationale.html)

## III. APPROVING/REJECTING AND PUBLISHING A DECISION

### A. How Does the Approver Know When to Approve a Decision?

If you are designated as a decision Approver (or Reviewer), you will receive an email when a decision is ready for Review and Approval. This email is automatically generated in WFDSS when an Incident Owner clicks the Begin Review/Approval Process button (there may be slight delay before you receive it). To go directly to the decision that needs approval, click the link provided in the email. After prompting you to log in to WFDSS this link will take you directly to Decisions tab where you can Review and Approve decisions. If the email has been lost or is inaccessible the

approver can access the information by logging into WFDSS > Incident tab > select the Incident to work on > then click the Decisions tab.

If an incident Reviewer(s) has been designated in WFDSS, care must be given to ensure their review has been completed prior to approving a decision. To check if a decision has been reviewed, you can select a decision and then click the View Info option on the Decisions tab. If multiple reviewers or approvers are being used, this coordination is critical, as an Approver has the ability to approve a decision regardless of whether incident Reviewers have completed their review. If you want to ensure Reviewers have looked at a decision prior to your decision approval you need to coordinate with them.

## **B. Approving or Rejecting a Decision**

From the Decisions tab, select the Review/Approve Decision button. The following screen provides decision content in a content tree in the left pane. View each portion of a decision by opening the folders and pages in the content tree.

As an Approver, consider the following questions prior to approving a decision:

- Do the strategic objectives and requirements support the Land and Resource Management Plan/Fire Management Plan?
- Have the short term issues, or potential issues been addressed ie: coordination with appropriate specialists, partners/cooperators, current and predicted weather, fire behavior (current and predicted) etc?
- Are there long term issues that may influence future management of the incident that should be considered ie: time of year, seasonality, climatic events, planning levels etc. Is it adequately addressed?
- Has the fire made significant runs? Are similar patterns expected with the predicted weather, unburned fuels and topography? Does the plan address this fire behavior or plan for it?
- Are there enough resources available to implement the Course of Action?

Remember that once a decision is in the Review/Approval Process it cannot be edited. Therefore if edits are needed after a decision is in the Review/Approval Process the decision should be rejected. Incident Owners and Editors can make needed adjustments and resubmit the decision for review and approval.

If an Approver selects "Reject Decision" a comment box will appear on the screen. It is expected that comments will be provided as to why a decision was rejected.

If the "Approve Decision" button is selected the final Approver must complete further steps to Publish a decision on the following screen.

## **C. Publishing an Approved Decision**

Once the final Approver approves a decision by selecting "Approve Decision" a new screen will prompt them to select a time frame for the Periodic Assessment and to Publish the decision. The final Approver must select the Publish button to officially Publish a decision. When a decision is published, it will be listed as Published. No additional edits or information can be added once a decision is published.

For further information view the WFDSS Help section on *Approving and Publishing a Decision*  
[http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Approve\\_Decision.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Approve_Decision.html).

## IV. PERIODIC ASSESSMENT

The Periodic Assessment tab provides space for Line Officers to document their Periodic Assessment of a fire. This assessment documents whether or not the current decision is still valid and if the Courses of Action and Objectives and Requirements can still be met. Once a decision is approved, the final Approver needs to set the Periodic Assessment timeframe. All incident Approvers can conduct Periodic Assessments throughout the life of the fire. Notes should be captured in the Periodic Assessment to document why the Approver thinks a decision is still valid.

### A. Set Up

Once the final Approver approves a decision by selecting “Approve Decision” a new screen will prompt them to select a time frame for the Periodic Assessment. The final Approver can select the number of days between required Periodic Assessments, from 1 up to 14 days using the drop down arrow. The Approver can also check the box that reads “Send me an email reminder the morning the next assessment is due” if they would like to receive an email reminder that a required Periodic Assessment is due. The email reminder will contain a link that leads directly to the Periodic Assessment tab after prompting the user to log into WFDSS.

To determine the length of time between required Periodic Assessments consider:

- A need to re-evaluate Courses of Action, Objectives and Requirements, or adjust Management Action Points due to fire growth, political/environmental concerns, resource concerns etc.
- Time of year, beginning/end of fire season
- Anticipated changes in Geographic and National Planning Levels
- Changes in Regional prioritizations
- Current and expected fire behavior
- Local/regional resource capabilities
- Anticipated changes in weather, fuel conditions, or seasonal ERC conditions

The time interval between required Periodic Assessments can be changed at any time. To change the duration between required Periodic Assessments use the Periodic Assessment tab to adjust the days between assessments.

### B. Completing

If the Periodic Assessment is not completed on time, the decision is not valid and out of compliance. Incident Approvers do not need to wait until a required Periodic Assessment is due to complete an assessment, it can be completed any time and as often as they deem necessary.

The Periodic Assessment is accessed from the Periodic Assessment Tab. To refresh your knowledge, review the current decision content. Consider whether the Relative Risk has changed since the beginning of the incident. Does this warrant a new decision? Approvers may also want to re-visit the Situation tab for a visual display of the incident specific Planning Area, fire perimeters, M.A.P.s, Points of Interest, Fire Behavior Analysis, Fire-Related data, Boundaries, Designated Areas, Infrastructure, Natural & Cultural Resources, and any unit specific layers that were loaded.

The Approver should determine whether the current decision is still valid. Consider some of the following questions when evaluating an assessment.

- Is the fire expected to remain within the Planning Area?
- Is the actual cost of the fire in line with the estimated planned costs in the current published decision?

- Has there been any unexpected fire growth since the last Periodic Assessment?
- Have additional values been threatened since the decision was published?
- Have significant resources not identified in the Courses of Action been requested?

### **C. Creating a new decision**

If it is determined that the current decision is not valid a new decision should be created.

Incident Owners/Editors can use the Decisions Tab to create a new decision.

As needed the Incident Owners/Editors can update or change some or all of the following in the next decision:

- Redraw the Planning Area from the Situation tab.
- Create new Incident Objectives and Requirements from the Objectives tab, or Include or Exclude Objectives and Requirements that already exist.
- Create new versions of Management Action Points (M.A.P.s) for small changes, or Include and Exclude M.A.P.s from the current list, or create new M.A.P.s all together.
- Include, Exclude, or create new Strategic Direction from the Courses of Action tab or update the Estimated Cost.
- Include desired content into appropriate content sections, such as fire behavior analysis and associated Values at Risk (VAR) and Values Inventory (VI), map captures, air quality concerns, threatened and endangered species habitat assessments, etc.
- Update the Relative Risk Assessment and Organization Assessment. If you just want to modify the Relative Risk Assessment and doing so does not change your decision, you do not have to create and publish a new decision. You can modify the Relative Risk Assessment without creating a new decision. However, if an updated Relative Risk Assessment then warrants a new Course of Action or other portions of a decision to be adjusted then a new decision should be created and approved.
- Improve or change Rationale section of a decision.

## **V. WFDSS LITE**

Beginning in March 2012, WFDSS is available for mobile devices. The mobile version of WFDSS, known as WFDSS Lite, can be accessed from the Production or Training logon page. WFDSS Lite does not have the full functionality of WFDSS. WFDSS Lite allows users to complete simple tasks in WFDSS, such as View Incident Information, View and Approve a Decision, or complete a Periodic Assessment. Maps displays and fire behavior modeling are not available in WFDSS Lite.

## **VI. DECISION SUPPORT TOOLS**

There are several Decision Support Tools available for supporting fire management decisions. Tools are described in three categories: Non-WFDSS Tools, WFDSS Fire Behavior Tools, and WFDSS Fire Economic Tools. A brief explanation is provided here. This section also contains WFDSS Help reference Topics for WFDSS tools.

## A. WFDSS Fire Behavior and Fire Economic tools

There are tools available outside of WFDSS that can aid in understanding fire behavior and danger for a local area—the Fire Danger Rating Pocket Cards, the BehavePlus Fire Modeling System, and Term Report in Fire Family Plus are three commonly used tools.

### 1. WFDSS Fire Behavior Tools

WFDSS has incorporated several fire behavior tools that provide deterministic and probabilistic fire spread projections. Most of these have been adapted from existing desktop fire behavior tools. All of the fire behavior tools in WFDSS are geospatial, utilizing maps of elevation, slope, aspect, fuel models, canopy cover, canopy base height, canopy height, and canopy bulk density represented on a grid. The data includes LANDFIRE and a California dataset.

Confidence in outputs from these tools is heavily influenced by the quality and calibration of modeling inputs. These tools require a representative landscape file. Local calibration of data is essential to receiving quality outputs. This calibration can be done in the pre-season or at the time of analysis, as long as local in-depth knowledge of the actual conditions of the landscape is available to the analyst. Additionally, quality weather and wind data require local RAWS stations to be maintained. Without daily RAWS observations, it is difficult to use many of the fire behavior tools available in WFDSS. The importance of quality inputs and an analyst experienced in fire behavior predictions cannot be overstated. These tools use models which are useful to inform decision, but results should never be regarded as exact. Results may drastically depart from reality if an analysis has poor input data, the modeler is inexperienced, or conditions violate model parameters (e.g. it is not possible to model plume-dominated fires or influences of merging fires on one another).

### 2. WFDSS Fire Economic Tools

Several economic tools have been added to WFDSS to assist in assessment of not only the economic values at risk in the fire area but also to compare the cost of a fire to other fires of historically similar size and location for your agency. Tools are described as WFDSS Values Inventory (VI), WFDSS Values at Risk (VAR), and Stratified Cost Index (SCI). It is important to remember that the economic values associated with these tools are only estimates to support decisions they are not definite values.

## B. Non-WFDSS Fire Behavior and Fire Danger Tools

### 1. Fire Danger Rating Pocket Cards

The **Fire Danger Rating Pocket Card** is produced by local fire management agencies on an annual or bi-annual basis. It was developed to aid firefighters in situational awareness by allowing them to interpret the National Fire Danger Rating elements of Energy Release Component (ERC) or Burning Index (BI) or Spread Component (SC) for any local area. Values associated with Fire Danger Rating elements are only useful when displayed and interpreted relative to local data. For example, an “ERC of 65” will mean different things to a firefighter in Florida or Montana or Arizona. A pocket card can tell you the trend and status of this year’s fire season, compare this season to previous and historical maximum years, and give fire danger values related to past extreme fires. The card is meant as a supplement to experienced firefighters to interpret daily and seasonal fire conditions. It does not help predict fire behavior for an incident, but does give fire behavior thresholds for the area, such as “extreme fire behavior potential when 1000-hour fuel moistures are less than 12%”.

## 2. Behave Plus

The **BehavePlus Fire Modeling System** is a desktop program with a collection of models that describe fire behavior, fire effects, and the fire environment for a uniform set of conditions. It can produce tables, graphs, and simple diagrams for fire management applications. Modules are available for surface fire, crown fire, safety zone size, size of a point-source fire, containment success, spotting distance, crown scorch height, tree mortality, and probability of ignition of a firebrand. Fire behavior modelers use BehavePlus to understand basic mathematical concepts before moving to the spatial modeling systems, and can use it to answer basic fire behavior questions for one point in time and place.

## 3. Term Report (Fire Family Plus)

The **Term Report in Fire Family Plus** is used to analyze historical season-ending or season-slowng weather events. The user determines dates when past seasons ended and then a distribution graph is calculated to show probabilities of a season ending event by date. This graph can be produced annually at the end of each fire season for a District or Unit as it only requires one date per year. It can be used to answer, "When may the fire season end?" or, "How long could we potentially be managing this fire?" Tabular and graphic outputs tell the user, "Based on recent history, there is a 50% chance of a season ending event by August 31, and a 75% chance of a season-ending event by September 20."

## C. WFDSS Fire Behavior Tools

### 1. Basic Fire Behavior (BFB)

BFB is often described as a "spatial Behave Plus," predicting fire behavior for one point in time over a landscape. BFB is a spatial fire behavior tool that gives simple fire behavior outputs such as flame lengths and rates of spread from initial fuel moistures and a single wind-speed/direction input by the user. BFB uses the inputs to calculate gridded winds and fuel moistures that vary spatially across the landscape. Although the map output shows variations in fire behavior, each pixel is the result of an independent calculation for fire behavior prediction. BFB provides outputs as if each pixel has its own custom BehavePlus run. For more information about BFB, what the outputs mean, potential uses, and assumptions and limitations see the WFDSS Help Topics *Automated Basic Fire Behavior* and *WFDSS Analyst-Assisted Basic Fire Behavior* [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Fire\\_Behavior\\_Ref.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Fire_Behavior_Ref.html).

### 2. Short-Term Fire Behavior (STFB)

Short-term fire behavior predicts fire growth for a set of constant conditions in time over a landscape. It predicts fire growth using FlamMap's Minimum Travel Time (MTT). In addition to the similar outputs of BFB, STFB also generates outputs of fire arrival time and major travel paths. Although the visual output of STFB is similar in appearance to FARSITE and Near Term Fire Behavior, it is not modeled in the same way. Rather, it is more similar to the manual vectoring and plotting of fire growth using tabular Behave Plus outputs. It is merely Rate Of Spread x time (burn period) plotted in the direction of maximum spread for each point of calculation along the perimeter of the ignition file or subsequent modeled fire perimeters. It is important to remember that the arrival time output in STFB is based on static weather like BFB. The Major flow-paths output is similar to a hydrologic map for fire on the landscape. Based on the fuels, topography, and weather inputs major flow paths are projected based on direction of maximum spread and the influence each cell has every other cell within the time of arrival grid. For more information about STFB, what the outputs mean, potential uses, and assumptions and limitations see the WFDSS Help Topic *WFDSS Short-Term Fire Behavior* [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Fire\\_Behavior\\_Ref.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Fire_Behavior_Ref.html).

### 3. Near-Term Fire Behavior (NTFB)

NTFB predicts fire growth over changes in time and space. When spotting is disabled, NTFB is deterministic; with the same inputs every simulation will produce identical outputs. A fire progression is modeled using forecasted wind and weather information for 1-7 days. This tool incorporates hourly changes in weather/wind, daily changes in burn periods or several burn periods per day, and deal fuel moisture conditioning adjusted to shading, elevation, and aspect. It is similar to the desktop version of FARSITE, but many user-features are simplified for use in WFDSS. NTFB differs from STFB in that it incorporates more detailed information. Outputs from NTFB usually show spotting in more detail than STFB, but to not model gridded winds. For more information about NTFB, what the outputs mean, potential uses, and assumptions and limitations see the WFDSS Help Topic *WFDSS Near-Term Fire Behavior Analysis* [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Fire\\_Behavior\\_Ref.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Fire_Behavior_Ref.html).

### 4. Fire Spread Probability (FSPro)

Fire Spread Probability (FSPro) is a spatial fire spread probability tool that uses current forecasted and historical weather as well as the landscape information used by the aforementioned tools. The resulting output does not show fire sizes or perimeters, but the probability that fire will burn a particular cell. It is not possible to extract fire behavior or fire growth information from FSPro output, nor is there a way to tell what type of fire burned an area (e.g. surface fire, crown fire). FSPro will produce numerous weather scenarios for the specified modeling period (7-30 days). Using these scenarios and the landscape information, 1000-4000 fires are modeled. Greater numbers of simulated fires increases the probability that FSPro will model a rare spread event. FSPro uses the final arrival time perimeters and overlays them to generate output showing the probability any specific location will burn during the simulated time. Because historic climatology plays such an important role in this tool it is important to make sure representative RAWS are selected for wind and weather. Having an analyst familiar with fire behavior modeling, and calibrating the model to the fire of interest is very important in obtaining quality outputs. FSPro output is easily misinterpreted, it is imperative to properly interpret the results if it is to be used properly. For more information about FSPro, what the outputs mean, potential uses, and assumptions and limitations see the WFDSS Help Topic *FSPro Overview*, and associated FSPro related topics [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Fire\\_Behavior\\_Ref.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Fire_Behavior_Ref.html).

### 5. Fire Behavior Modeling Assumptions and Limitations

Most of these tools are not best-utilized straight “out of the box”. It is imperative that you understand the major assumptions and limitations imposed not only by the tool but by the particular fire situation. The analyst you are working with should have a complete understanding of the tools, analysis assumptions and limitations, and be able to communicate them to you. The analyst should provide a written record that may be given to future analysts to improve the quality of analyses over time. The WFDSS Help provides assumptions and limitation for each tool.

### 6. Choosing the Right Fire Behavior Decision Support Tools

Before deciding which tool you need, ask these questions:

- *Do you actually need Decision Support Tool outputs to make a decision (use of these tools is not required), or has a decision essentially been made?*
- *Is your question about fire spread, fire behavior, or values at risk?*
- *Do you want information for a specific time period such as “the next 24 hours” or “the next 14 days”?*
- *How much time do you have before the product is needed?*

The following tables can guide your choice of Decision Support Tools. The “\*” indicates a tool available as desktop software outside of WFDSS.



*Integrating  
science, technology  
and fire management*

**Wildland Fire Management RD&A**

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Table 1. Fire Behavior Tools

Tools	Basic Fire Behavior (BFB)	FlamMap* or Short-Term Fire Behavior (STFB)	FARSITE* or Near-Term Fire Behavior (NTFB)	Fire Spread Probability (FSPro)
<b>Type of Tool</b>	Spatial, only in WFDSS	Spatial, desktop and WFDSS	Spatial, desktop and WFDSS	Spatial, only in WFDSS
<b>General Time Frames</b>	For current burn period	For Next 1-3 Days	For Next 1-7 Days	For 7-30 Days in Future
<b>Fire Behavior Questions</b>	Basic Fire Behavior (BFB)	FlamMap* or Short-Term Fire Behavior (STFB)	FARSITE* or Near-Term Fire Behavior (NTFB)	Fire Spread Probability (FSPro)
How and where will the fire spread with the forecast weather?		Using <i>unchanging</i> weather, wind and fuel moistures provides map of fire spread over next 1-3 days. Identifies fastest fire travel routes.	Using <i>variable</i> (e.g. hourly, diurnal) weather, and fuel moisture, provides a map of fire spread over the next 1-7 days.	
What fire behavior (e.g. flame length, rates of spread, spotting) is expected with known weather and fuel conditions?	Using <i>static</i> weather/wind input and varying fuel models/terrain, provides fire behavior outputs within a “box” drawn around the fire area.	Using <i>static</i> weather/wind input and varying fuel models/terrain, provides output of fire behavior for a “box” around the fire; fire size, and time of arrival also given.	Using <i>variable</i> weather/wind inputs and varying fuel models/terrain, provides output of fire behavior, fire size, and time of arrival. Used with next 1-7 days of forecast weather.	
If a fire reaches a point of concern, what fire behavior can I expect at that location?	Fire behavior outputs are available within a “box” drawn around the point of concern; uses static weather scenario.	Fire Behavior outputs and fastest fire travel routes are available for a “box” around the fire; uses one static weather scenario.	Mapped Fire Behavior outputs are only available if the modeled fire actually reaches the point of concern, if so it is for the weather conditions modeled when the fire reaches that point	
What is the <i>probability</i> the fire may reach a point of concern in the next 1-7 days? In 8 or more days?				Uses forecast weather and climatological probabilities for a probabilistic fire spread output. Outputs best used after calibrating the landscape and tool.
There is a major wind event in the forecast—how far might the fire travel? What is the potential fire behavior?		A single windspeed and direction (static or gridded) input can show fire growth and behavior in complex fuels/terrain.	Multiple windspeeds and directions per day can show fire growth and behavior in complex fuels/terrain.	

## VII. WFDSS FIRE ECONOMIC TOOLS

### A. WFDSS Values Inventory

WFDSS Values Inventory (VI) provides a table of values within a given area (a Planning Area or the fire projection path from either Short-Term or Near Term Fire Behavior). The table provides information on the value quantity (acres, miles, count, etc.) data source, currency, and coverage. Users can view a map display of the queried area from the Situation tab to help users visualize data geographically and can be included as a map capture into the incident content or decision content. There are numerous national and interagency geospatial values layers in WFDSS. Local data can be loaded pre-season as Unit Shapes, see the WFDSS Help Topic on *Unit Shapes* [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_unit\\_shapes.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_unit_shapes.html). WFDSS Values Inventory includes geospatial data such as Class I Airsheds and national infrastructure to quantify the values within the given area. This is intended as a strategic tool and is the fastest method to see and quantify values within the fire planning or fire projection area. For more information see the WFDSS Help topic *Obtaining a Values Inventory*, [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Obtain\\_VI.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Obtain_VI.html)

### B. WFDSS Values at Risk

WFDSS Values at Risk (VAR) combines FSPRO output with WFDSS and preloaded local value data to quantify the specific values within each probability contour (acres, miles, count, etc.). Similar to VI, VAR provides the values information in a table and a map of the inventory area is available from the Situation map. The map capture feature can be used to add an image to the incident and decision content. Like VI, VAR is also intended as a strategic tool and provides a quick method to quantify values within an FSPRO projection area. For more information see the WFDSS Help topic *Values at Risk Information*, [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_values\\_at\\_risk\\_info.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_values_at_risk_info.html).

### C. Stratified Cost Index (SCI)

SCI is intended as a self assessment tool for cost per acre for on fires larger than 300 acres and is not dependent on any spatial information except the latitude and longitude of the fire. The SCI tool is based on historical suppression costs based on fire size, location (inside or outside wilderness and distance to town), ERC percentile, fuel model, and the agency of jurisdiction. There are six separate models: including one for the Department of Interior (BIA, NPS, and BLM) and USDA Forest Service for the eastern and western U.S. The user can put up to 4 fire sizes into the tool. The result is a matrix of fire sizes and percentage of fires in comparison. The results are also color coded, anything less than the 50<sup>th</sup> percentile is green to indicate near or below average costs, yellow means costs are high and should be monitored and documented closely, red means you are in the upper 10% of similar fires and that you should carefully document your costs and decisions as your costs are high and for some fires a cost review may be possible. See the WFDSS Help Topic on *Stratified Cost Index* for subsections on *Creating a Stratified Cost Index*, *Editing and Accepting an SCI*, and more, [http://wfdss.usgs.gov/wfdss\\_help/WFDSS\\_Help\\_SCI.html](http://wfdss.usgs.gov/wfdss_help/WFDSS_Help_SCI.html)

**Table: 2 Comparing the Three Economic Tools Currently Available**

Tools	Values Inventory (VI)	Values at Risk (VAR)	Stratified Cost Index (SCI)
Time Period of Interest (must be same as analysis period)	1 – 7 days	Next 7 – 30 days	Immediate and cumulative
Time Needed to Complete Analysis	Less than one minute upon completion of STFB and NTFB, immediate upon drawing planning area	Completed with FSPro simulation	A few minutes
Analysis Type	Automated	Automated	Manual
What are the Values at Risk near this fire?	Lists the number of values by specific type within a planning area or STFB/NTFB Arrival Time footprint.	Lists the number of values by specific type and their probability of being affected by fire.	
How do costs on this fire compare to similar fires?			SCI is a table that compares costs of similar fires based on jurisdiction fuel model at point of ignition, and fire size.
What values are in the predicted fire movement over the next day or two?	X		
What is the probability and count of values being affected in the next week or two?		X	
Most values in FMUs are included. Primarily values related to land management agencies	X	X	
Buildings on federal land	X	X	
Local values data preloaded as Unit Shapes in the fire's vicinity such as species of concern, no dipping areas, specific habitat etc, provided the data manager selected to have the data populate in the values tables.	x	x	
Partial county building cluster data	X	X	

### 1. Choosing the Right WFDSS Economics Support Tools

Before deciding which tool you need, ask these questions:

- *Do you actually need Decision Support Tool outputs to make a decision (use of these tools is not required), or has a decision essentially been made?*
- *Is your question about values at risk or relative costs?*
- *Do you want information for a specific time period such as “the next 24 hours” or “the next 14 days?”*
- *How much time do you have before the product is needed?*

## VIII. AIR QUALITY IMPACT TOOLS

Multiple tools are available from the Wildland Fire Air Quality Tools Portal site: <http://firesmoke.us/wfdss/>

The tools include:

- Smoke Guidance Point Forecast
- Smoke Guidance Regional Maps
- Diurnal Surface Wind Pattern Analysis
- Climatological Ventilation Index Point Statistics
- Current Air Quality Conditions Map
- Fire Information and Smoke Trajectories
- Customized Fuels, Consumption, and Smoke Modeling

### Wildland Fire Air Quality Tools

	Historical Data	Current Conditions	Forecast/Gaming
Atmospheric Conditions	<ul style="list-style-type: none"> <li>Diurnal Surface Wind Pattern Analysis <small>graphic</small></li> <li>Climatological Ventilation Index Point Statistics <small>graphic</small></li> </ul>		<ul style="list-style-type: none"> <li>Smoke Guidance Point Forecast <small>text</small></li> <li>Smoke Guidance Regional Maps <small>graphic</small></li> </ul>
Smoke	<ul style="list-style-type: none"> <li>Probabilistic Smoke Impacts <small>graphic</small></li> </ul>	<ul style="list-style-type: none"> <li>Current Air Quality Conditions Map <small>graphic</small></li> </ul>	<ul style="list-style-type: none"> <li>Customized Fuels Consumption &amp; Smoke Modeling <small>text</small></li> <li>Smoke Guidance Regional Maps <small>graphic</small></li> <li>Fire Information &amp; Smoke Trajectories <small>graphic</small></li> </ul>

<small>Localized Tool</small>	<small>text</small> Text Output
<small>Regional Tool</small>	
<small>Local &amp; Regional Tool</small>	<small>graphic</small> Graphical Output

### Wildland Fire Air Quality Tool Attributes

		Instant Access	Easy to Use	Localized	Regional	Textual	Graphical	Interactive	Smoke	Atmospheric Conditions
Historical Data	Diurnal Surface Wind Pattern Analysis	X	X	X			X			X
	Climatological Ventilation Index Point Stats	X	X				X			X
	Probabilistic Smoke Impacts based on Past Weather			X		X		X		
Current Condition	Current Air Quality Conditions Map	X	X	X		X		X		
Forecast/Gaming	Smoke Guidance Point Forecast	X	X	X		X				X
	Fire Information & Smoke Trajectories	X	X	X		X	X	X		
	Customized Fuels, Consumption, & Smoke Modeling	X	X	X	X	X	X	X		
	Smoke Guidance Regional Maps	X	X	X		X		X		X

## IX. OBTAINING ADDITIONAL WFDSS SUPPORT

Local expertise may exist on your unit or surrounding units, consider checking locally for assistance when needed.

Non local WFDSS assistance includes 1) the WFDSS Help and Helpdesk, 2) Geographic Area Editors and 3) The Wildland Fire Management Research Development and Application unit [www.wfmrda.nwcg.gov](http://www.wfmrda.nwcg.gov) or 1-208-473-8107.

### A. WFDSS Help and Helpdesk

Consider your first line of WFDSS assistance the WFDSS Help: [http://wfdss.usgs.gov/wfdss\\_help/index.htm](http://wfdss.usgs.gov/wfdss_help/index.htm) The Help content is up to date and provides detailed information about all aspects of WFDSS. The WFDSS Helpdesk can be reached at: [IIA-Helpdesk@fs.fed.us](mailto:IIA-Helpdesk@fs.fed.us) or 1-866-244-7677.

### B. Geographic Area Editors (GA Editor)

Geographic Area Editors (GA Editor) have been identified for each region and can often provide assistance with decisions, aid in analysis, or at a minimum assist the unit in finding resources who can assist. The GA Editor role is a regionally designated individual who has editor privileges and oversight of incidents throughout a region. This user role can grant privileges requested by various users throughout a region. As a GA Editor they are the main communication link between the Wildland Fire Management Research Development & Application (WFM RD&A) team and field units. They participate in monthly GA Editor conference calls with the WFM RD&A in which they receive new information regarding WFDSS, data requests or updates. The WFM RD&A receives feedback from the field through the GA Editors. If you have feedback you would like to relay, please provide it to your GA Editor.

GA Editors provide oversight to requests submitted through the system and assist local units as needed with their incident objectives, and requirements along with various fire behavior requests. You can determine your regional GA Editors using the filter tools in WFDSS. For steps on how to do this refer to the WFDSS Help section *Finding Your Geographic Area Editor*, [http://wfdss.usgs.gov/wfdss\\_help/WFDSSHelp\\_Find\\_GA\\_Editor.html](http://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Find_GA_Editor.html).

### C. WFM RD&A

The Wildland Fire Management Research Development and Application (WFM RD&A) program has staff who work on WFDSS development and application as well as decision support. The WFM RD&A works to develop and deliver existing and new wildland fire applications to assist with and improve fire management programs.

#### 1. Fire Decision Support

The WFM RD&A consists of fire application and management specialists. The primary goal of this group is to assist with decision support to the field for large and long duration fire events, providing analysts as needed to assist with fire behavior analyses, interpretation of the results and to mentor/train field units with the use of current tools in WFDSS.

A coordinator is on call seven days a week to assist and coordinate fire behavior requests. Coordination will be primarily with the Geographic Area Editors (GA Editors), but if they are unavailable this coordination will be done with the field as needed. The coordinator will monitor requests within WFDSS, if the request is in the queue for more than a few hours the coordinator will work with GA Editors to coordinate additional assistance if necessary. Personnel at the WFM RD&A are set up to assist field units remotely, and depending on the complexity of the incident the WFM RD&A can provide support on site.



## **D. WFM RD&A Ordering Process**

Visit the WFM RDA website for information and ordering  
[http://www.wfmrda.nwccg.gov/wildlandfire\\_decision\\_support.php](http://www.wfmrda.nwccg.gov/wildlandfire_decision_support.php)