

Line Officer/Agency Administrator's Desk Reference 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. This document will be reviewed annually and updated as necessary.

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A. 2020 Updates include:

- Web links updated
- Updated materials from the 2020 Redbook. Major updates to Chapter 5, Chapter 6, Chapter 7, Chapter 10, Chapter 11, Chapter 12, Chapter 15, Chapter 16, Chapter 18, and Chapter 19.
- Updated direction from FSM 5100, Chapter 5110 Wildfire Prevention and Mitigation (5/2019). Update Fuels Treatment Effectiveness Monitoring (FTEM) information to reflect the move to IFTDSS.

B. 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 to develop 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 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.

C. Organization of the Guide:

The Guide is organized into five parts:

1. Preseason Guidance -
 - Preseason activities or updates a line officer needs to be aware of and participate in.
 - Fire Planning and Preparedness – activities, training and updates that need to occur on an annual basis preseason.
2. Fires on Your Local Unit –
 - Managing fires on your unit – several resources in this section to help guide a line officer through the management of a fire or several fires, including: additional resources to call upon for support or help, team management etc.
3. Post Fire Activities –
4. Prescribed Fire Management –
Direction and activities directly related to accomplishment of fuels management and targets.
5. Appendices –Reference materials related to planning tools and WFDSS.



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Part 1. Preseason Guidance

I. FIRE POLICY AND FOREST SERVICE DIRECTIVES

The “Guidance for the Implementation of Federal Wildland Fire Management Policy” issued February 13, 2009 (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 the Land and Resource Management Plan standards, 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
- Guidance for Implementation of Federal Wildland Fire Management Policy (2009): 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: <https://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>
- National Cohesive Wildland Fire Management Strategy and Quadrennial Fire Review (QFR): <https://www.forestsandrangelands.gov/strategy/index.shtml>
- Wildland Fire Decision Support System http://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml

A. Fire Management- Preparedness- 5120 FSM

Preparedness is a continuous process that includes all fire management activities conducted in advance of wildland fire ignitions to ensure an appropriate, risk informed and effective wildland fire response to meet National and Agency goals. Activities include:

1. Developing Agency strategy, doctrine, and standards;
2. Developing Fire Management program and budget proposals; the composition and location of unit,



State/Regional, and National level firefighting infrastructure and assets;

3. Working with partners and cooperators to develop an effective, risk-based cooperative readiness program that includes community wildfire mitigation and adaptation;
4. Training; certifying, and managing records; and equipping fire management assets;
5. Detecting fires;
6. Assessing risk; developing, maintaining, and implementing systems to analyze risk, and acquire geospatial information on current and historical fire occurrence, weather, hazard, and fire danger;
7. Developing, maintaining, and implementing systems to mobilize, coordinate, and prioritize the use of firefighting and mitigation personnel and equipment;
8. Evaluating Agency performance to improve future operations.

1. 5120.41 – Chief

The Chief reserves authority to execute all Service-wide agreements with other Federal agencies and approve or reject agreements with foreign countries.

2. 5120.42 – Deputy Chief, State and Private Forestry

The Deputy Chief has the responsibility to:

1. Ensure Agency capability is sufficient to meet the Chief's goals.
2. Coordinate with the Regional Foresters to develop a unified Agency program to implement Agency wildland fire management goals.
3. Recommend for approval to the Chief, all Service-wide agreements with other Federal agencies and agreements with foreign countries.

3. 5120.43 – Washington Office, Director, Fire and Aviation Management,

The Director, Fire and Aviation Management plans, organizes, and implements the National preparedness program to:

1. Develop the doctrine, National strategies, and risk management principles for the Wildland Fire Program.
2. Provide counsel to the Deputy Chief on the Fire Management program and its capability in meeting the Chief's goals.
3. Recommend the establishment or revision of all Service-wide agreements with other Federal agencies and foreign countries to the Deputy Chief, State and Private Forestry (S&PF). The goal is to collaboratively develop National preparedness plans, Mobilization Guides, procedures, standards, and systems, to train, qualify, equip, and mobilize personnel and assets to meet National and international wildland fire and emergency needs (FSM 5121.1).
4. Consult with the Deputy Chief (S&PF) annually to determine and approve the following:
 - a. The number of all Agency wildland fire response assets;
 - b. Their period of availability, location, and funding; and
 - c. The implementation of the Chief's wildfire preparedness, mitigation, and response goals.
5. Develop and maintain the capability to mobilize wildland fire assets by maintaining and operating the National Interagency Coordination Center (NICC) in collaboration with interagency cooperators (FSM 5123).
6. Establish standards for firefighting assets and qualification requirements for fire support and fire management personnel.
7. Ensure oversight of the development, operation, and maintenance of networks and systems to:



- a. Assess weather, fire behavior, and fire danger;
 - b. Report fire occurrence;
 - c. Mobilize firefighting personnel and assets;
 - d. Maintain accountability of firefighting equipment and supplies;
 - e. Monitor suppression actions;
 - f. Track training and certifications for fire management personnel;
 - g. Evaluate effectiveness of alternative fire management programs; and
 - h. Assess risk in making strategic and tactical decisions for fire incidents.
8. Conduct National level preparedness reviews to monitor accountability and performance, correct deficiencies, and improve overall operations (FSM 5127.2).
 9. Ensure strategic assessments (for example, Cohesive Strategy, Quadrennial Fire Review) are developed to position the Agency to meet both current and future conditions.
 10. Ensure National Fire and Aviation Management leadership is trained, equipped, and directed to provide an appropriate, risk-based, and effective response.
 11. Certify, recertify, or decertify Agency personnel located in the National Office possessing Area Command and Type 1 position qualifications.

4. 5120.44 – Regional Foresters

Regional Foresters have the responsibility to:

1. Coordinate with the Deputy Chief to create a unified Agency Wildland Fire program and establish Regional capability to implement the Chief's wildland fire management goals.
2. Ensure establishment of State-wide agreements that clearly define the responsibilities of all interagency partners in wildland fire activities.
3. Establish supplemental Regional direction (Manual or Handbook) when State or local laws or regulations require additional standards. Examples include requirements related to blood borne pathogens, first responders, emergency vehicle operations, and hazardous materials.
4. Certify, recertify, or decertify Agency personnel located within the Region possessing Area Command and Type 1 position qualifications, or delegate this responsibility to the Regional Fire Director.
5. Ensure that field units plan and budget fire protection assets are within allocated budgets.
6. Ensure fire management objectives are integrated with Land Management Plan objectives
7. Ensure proper accountability of firefighting tools and equipment.
8. Ensure that Regional Activity Reviews are conducted (FSM 5127.1).

5. 5120.45 – Regional Directors, Fire and Aviation Management

Regional Directors, Fire and Aviation Management have the responsibility to:

1. Plan, organize, and implement, the Regional Wildland Fire Management program.
2. Establish State-wide agreements covering the use of interagency, National Guard, State, and local cooperator forces, and the coordination of Regional interagency wildfire response and mitigation support activities.
3. Provide oversight and conduct preparedness reviews of Forest, Grassland, and Interagency Fire Management programs to ensure units are prepared to make well informed risk-based decisions on all wildland fires that consider objectives within Land Management Plans.



4. Provide oversight, maintain, and ensure effective operation of GACC in collaboration with interagency cooperators (FSM 5123.1).
5. Provide oversight, maintain, and ensure effective operation of all Agency wildfire response assets (see National Mobilization Guide NFES 2092).
6. Provide oversight to ensure and certify weather, fire danger rating, and risk assessment systems meet National standards and deliver accurate, current, and timely information (Weather Information Management System (WIMS), Remote Automated Weather Station (RAWS), National Fire Danger Rating System (NFDRS), Fire Danger Pocket Cards, Fire Behavior Alerts, and so forth); see Interagency Standards for Fire and Fire Aviation Operations (NWCG, NFES 2724) and Interagency Wildland Fire Weather Station Standards & Guidelines (PMS 426-3).
7. Develop and recommend supplemental Regional direction (Manual or Handbook) to the Regional Forester when State or local laws or regulations require additional standards. Examples include requirements related to blood borne pathogens, first responders, and hazardous materials. Establish supplemental Regional policy for emergency vehicle operations (FSH 5109.16)
8. Enable the availability of trained and qualified fire management personnel by:
 - a. Ensuring the availability of training programs are compliant with National, State, and local standards to train and qualify personnel for fire management and emergency assignments.
 - b. Establishing a Regional (or GACC) Qualification Review Committee to recommend certification, recertification, or decertification of personnel to the Regional Forester or designee. This requires an annual review of the qualifications for all Agency personnel located within the Region possessing Area Command and Type 1 position qualifications. (Forest Service Fire and Aviation Qualifications Guide, Chapter 2 Part1) (<https://www.fs.usda.gov/managing-land/fire/publications>)
 - c. Certifying, recertifying, or decertifying Agency personnel located within the Region possessing Area Command and Type 1 position qualifications if so designated by Regional Forester.
9. Determine Regional fire management equipment and supply need. Only obtain equipment and supplies meeting National standards and maintain accountability of these items.
10. Schedule and conduct annual preparedness reviews to identify organizational, operational, procedural, personnel, or equipment deficiencies, and recommend specific corrective actions.

6. 5120.46 – Forest Supervisors

Forest Supervisors have the responsibility to:

1. Collaborate with appropriate Federal, State, and local partners to plan, organize, and implement a preparedness and mitigation program for the National Forest or Grassland.
2. Ensure appropriate agreements cover the use of interagency and local cooperator forces, and the coordination of wildfire response activities. Establish and maintain cooperative wildland fire management agreements that accurately reflect current conditions, budget, or other significant considerations.
3. Establish a Forest Qualification Review Committee to annually review and recommend certification, recertification, or decertification of personnel (Forest Service Fire and Aviation Qualifications Guide, Chapter 2, Part 1).
4. Certify, recertify, or decertify all unit individuals possessing Type 2 or lower position qualifications.
5. Provide oversight and conduct preparedness reviews of District Fire Management programs, to ensure units are prepared to make well informed risk-based decisions on all wildland fires that consider objectives within the Land Management Plan.
6. Ensure spatial fire planning and the Fire Management Reference System is updated and provides



guidance, based upon the Land and Resource Management Plan, to respond to unplanned ignitions and support wildland fire decisions and analysis (see the Fire Management Planning Guide at <http://fsweb.wo.fs.fed.us/fire/fmp/>).

7. Ensure dispatch centers are prepared with mobilization and initial response plans to detect and respond to wildfires with effective coordination and mobilization of wildland fire management assets.
8. Ensure that adequate plans, hardware, software, qualified personnel, and facilities are available to coordinate, support, and process the timely and accurate assessment of weather conditions (RAWS network and WIMS), NFDRS), and risk (Wildland Fire Decision Support System (WFDSS)).
9. Ensure Fire Danger Pocket Cards accurately depict current conditions and trends, and are:
 - a. Certified Regionally;
 - b. Posted on the National Wildfire Coordinating Group (NWCG) website (<https://fam.nwcg.gov/fam-web/pocketcards/default.htm>);
 - c. Distributed to each Fireline Supervisor on Type 3, 4, and 5 wildfires.
10. Designate Administratively Determined (AD) hiring official(s) (see NWCG Standards for Interagency Incident Business Management (PMS 902, NFES 2160, and FSH 5109.34))_ <https://www.nwcg.gov/sites/default/files/publications/pms902.pdf>
11. Determine Forest and Grassland fire management equipment and supply needs. Only obtain equipment and supplies meeting National standards and maintain accountability of these items.
12. Implement Regional emergency vehicle operation policy (5109.16).

5120.47 – District Rangers

District Rangers have the responsibility to:

1. Maintain an organization to meet Agency standards to achieve wildland fire management objectives described in Land and Resource Management Plans. Implement applicable actions identified in unit level and GACC mobilization initial response systems and plans.
2. Provide oversight and ensure employees understand their professional and legal responsibilities and are given timely and accurate information of the latent and emerging risks in the wildland fire environment.

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, Wildfire Response, Responsibilities and Oversight, Risk Management Framework, Safety, Fuels, Prescribed Fire, and Fire Management Positions.

B. Fire Management- Wildfire Response- 5130 FSM

1. 5130.41 – Washington Office, Deputy Chief, State and Private Forestry

The Washington Office, Deputy Chief, State and Private Forestry is responsible for:

1. Protecting life as the preeminent priority on both emergency and planned work.
2. Communicating a clear vision of Agency goals and management principles, ensuring they are shared and understood by all levels of the organization.
3. Expressing clear intent concerning roles and responsibilities to ensure wildfire response assignments are appropriate, risk-based and effective.

2. 5130.42 – Washington Office, Director of Fire and Aviation Management

The Washington Office, Director of Fire and Aviation Management is responsible for:

1. Protecting life as the preeminent priority on both emergency and planned work.



2. Leading efforts to develop, update, and implement wildfire response doctrine and risk management principles learning from activities, reviews, and analyses.
3. Setting strategy for National wildfire response efforts in coordination with the Chief of the U.S. Forest Service, Deputy Chiefs, and Regional Foresters.
4. Monitoring and reporting the current National fire management situation to the Chief.
5. Initiating and maintaining contacts with appropriate officials in Federal departments, Tribes, State and local agencies to collaborate and coordinate a risk based and effective wildfire response.
6. Monitoring fire activity and communicating with adjacent organizational levels regarding delegations, decision making and incident objectives on wildfires and ensuring sound, appropriate objectives are delineated for wildfires.
7. Monitoring expenditures and ensuring fiscal oversight and accountability in wildland fire operations.
8. In conjunction with interagency partners, prioritizing, coordinating use, and mobilizing Department of Defense resources and National wildfire response resources; see guidelines in National Mobilization Guide, (NFES 2092).
9. Approving or denying requests for the mobilization and training of emergency firefighters to supplement regular personnel during emergency situations. Implementation guidance is located in the see NWCG Standards for Interagency Incident Business Management (PMS 902, NFES 2160, and FSH 5109.34)
10. Initiating and maintaining contacts of mutual interest with appropriate officials in foreign countries on matters regarding fire and aviation management and wildfire response in coordination with the Director of International Programs.

3. 5130.43 – Regional Foresters

Regional Foresters are responsible for:

1. Protecting life as the preeminent priority on both emergency and planned work.
2. Communicating Agency goals and management principles, ensuring they are shared and understood by all levels of the organization.
3. Expressing clear intent concerning roles and responsibilities to ensure wildfire response is appropriate, risk-based, and effective.
4. Ensuring employees under their supervision are available as needed to support wildfire response
5. Ensuring employees with supervisory or managerial responsibilities in wildfire management meet the Interagency Fire Program Management (IFPM) and Forest Service Fire Program Management (FS-FPM) qualification standards (FSM 5125.03), stay abreast of current wildfire response information such as: factors affecting wildfire behavior and effects; wildfire response management and organization; intent and contents of Agency and interagency wildfire management directives; Land and Resource Management Plans; and economic and risk analysis.
6. Ensuring the National Federation of Federal Employees (NFFE) Council Vice President is notified when a Forest Service incident has 300 or more individuals assigned or an incident not under Forest Service jurisdiction has a staffing level of 300 or more Forest Service employees (Master Agreement between FS and NFFE, Article 28), regardless of whether a human resources specialist is ordered in accordance with FSM 5137.03 (2).
7. Monitoring fire activity and communicating with adjacent organizational levels regarding delegations, decision making and incident objectives on wildfires and ensuring sound, appropriate objectives are delineated for wildfires.
8. Monitoring expenditures and ensuring fiscal oversight and accountability in wildland fire operations.
9. Monitoring fatigue and exposure to environmental factors (for example, heat, smoke, and so forth) and

ensuring fitness for command and leadership in fire management leadership and line positions, see guidelines in NWCG Standards for Interagency Incident Business Management (PMS 902, NFES 2160, and FSH 5109.34), FSH 5109.17, zero code, Fire and Aviation Management Qualifications Handbook and FSH 6709.11, and the Health and Safety Code Handbook.

10. Ensuring the immediate and appropriate notification of any aviation and wildfire fatality, serious injury, entrapment, fire shelter deployment, or accident with potential National significance; see definition (Reference FSM 6730 and FSH 6709.12, ch.30 for Accident Reporting and Investigation Policy and Guidelines).
11. Delegating authority for wildfire response to Regional Fire and Aviation Management Directors, with clear expectations to exercise principles that are consistent with Wildland Fire Foundational Doctrine, risk management and the Federal Wildland Fire Management Policy.
12. Approving or denying requests to train and mobilize emergency firefighters, per guidelines located in the NWCG Standards for Interagency Incident Business Management (PMS 902, NFES 2160, and FSH 5109.34)
13. Approving and ensuring that Severity funds are used in accordance with National program direction; see 5138.03.
14. Ensuring fire reports are accurate and complete within the required timeframes

4. 5130.44 – Regional Directors, Fire and Aviation Management

Regional Directors are responsible for:

1. Protecting life as the preeminent priority on both emergency and planned work.
2. Ensuring current wildfire response information, such as: factors affecting wildfire behavior; wildfire response management and organization; intent and contents of agency and interagency wildfire management directives; and economic and risk analysis, is available to employees with supervisory or managerial responsibilities in wildfire management.
3. Monitoring fire activity and communicating with adjacent organizational levels regarding delegations, decision making, and incident objectives on wildfires and ensuring sound, appropriate objectives are delineated for wildfires.
4. Coordinating, monitoring, and providing consultation and communication for all Agency and interagency wildfire response operations in order to ensure all wildfire response actions are managed in an appropriate, risk-based, effective manner. The role of the Geographic Area Fire Program Manager (GFPM) may be delegated to a member of the Regional Office FAM staff that meets the Interagency Fire Program Management (IFPM) requirements. The primary intent of this delegation is to place the appropriate individual who meets IFPM minimum qualification standards in the position of authority to support safe operations in the field. See IFPM Decision Paper #4 for Delegation of Geographic Area Fire Program Manager Role, http://www.ifpm.nifc.gov/Archives/nwcg/NWCG_Memorandum_IFPM_Decision_Paper-4.pdf
5. Determining the need and request approval to train and mobilize emergency firefighters in order to provide additional expertise and skills to supplement regular Forest Service personnel during emergency situations, per guidelines located in the NWCG Standards for Interagency Incident Business Management (PMS 902, NFES 2160, and FSH 5109.34).
6. Monitoring cumulative fatigue and exposure to environmental factors (for example, length of assignments, heat, smoke, and so forth) and ensuring fitness for command, leadership, and management, in fire management leadership and support positions, see guidelines NWCG Standards for Interagency Incident Business Management (PMS 902, NFES 2160, and FSH 5109.34), FSH 5109.17, zero code, Fire and Aviation Management Qualifications Handbook and FSH 6709.11, and the Health and Safety Code Handbook.
7. Regularly monitor wildland fire response operations for effectiveness and make recommendations for

action when there is recognition of exceptional or problematic employee performance; see guidelines in Interagency Standards for Fire and Fire Aviation Operations (NFES 2724, Chapter 5).

8. Conducting or participating in incident after action reviews (AAR), analyses, and investigations.
9. Ensuring immediate and appropriate notification of any aviation and wildfire fatality, serious injury, entrapment, fire shelter deployment, or accident with potential National significance to the Branch Chief for Aviation Safety or Branch Chief for National Ground Operations Risk Management (Reference FSM 6730 and 6709.12, ch.30 for Accident Reporting and Investigation Policy and Guidelines).
10. Ensuring upward reporting of the current fire management situation is occurring daily.

5. 5130.45 – Forest Supervisors and District Rangers

Forest Supervisors and District Rangers are responsible for:

1. Protecting life as the preeminent priority on both emergency and planned work.
2. Overseeing management of all aspects of wildfire response on all incidents and ensure all local Agency and interagency wildfire response actions are managed in an appropriate, risk-based, effective manner; see guidelines in Interagency Standards for Fire and Fire Aviation Operations (NFES 2724, Chapter 5).
3. Monitoring fire activity and communicating with adjacent organizational levels regarding delegations, decision making, and incident objectives on wildfires and ensuring sound, appropriate objectives are delineated for wildfires.
4. Delegating authority for wildfire response to staff and incident commanders, with clear expectations to exercise principles that are consistent with Wildland Fire Doctrine, see guidelines in Interagency Standards for Fire and Fire Aviation Operations (NWCG, NFES 2724) and Federal Wildland Fire Policy. Success is defined as safely achieving reasonable objectives with the least fire fighter exposure necessary while enhancing stakeholder support for our management efforts.
5. Ensuring employees are mobilized in wildfire positions pursuant to qualifications in accordance with the Fire and Aviation Management Qualifications Handbook (FSH 5109.17) and the Forest Service Fire and Aviation Qualifications Guide (FSFAQG).
6. Assigning appropriate level of management, supervision, and staffing to every wildfire according to the level of complexity; Use Indicators of Incident Complexity (NFES 1077) at initial size-up (or through pre-planned response plans) and thereafter, use the Risk and Complexity Assessment as appropriate, to assure the qualifications of the assigned incident commander are commensurate with the complexity of the incident; see guidelines in Interagency Standards for Fire and Fire Aviation Operations, (NFES 2724; Appendix E and F).
7. Ensuring sound financial management practices are implemented and costs do not drive, but are an output of the best risk informed decisions to protect values. To accomplish this, ensure assignment of incident business personnel for advice and counsel to all Type 1, Type 2, or complex incidents. Persons assigned these duties will report directly to the appropriate Agency Administrator in accordance to the incident complexity.
8. Approving and documenting wildfire response decisions in Wildland Fire Decision Support System (FSM 5133.03).
9. Supporting fire management consistent with Agency agreements and Regional or National direction.
10. Annually conveying fire response and risk mitigation responsibilities, expectations, and authorities to Type 3, 4, and 5 Incident Commanders; see guidelines in Interagency Standards for Fire and Fire Aviation Operations, (NFES 2724).
11. Ensuring the locations of all fire retardant avoidance areas on the unit, identified in the Record of Decision for the Nationwide Aerial Delivery of Fire Retardant, are provided to Incident Commanders, fire management, and supervisory personnel. Also ensuring all applicable reporting and monitoring is completed per the Record of Decision for the Nationwide Aerial Application of Fire Retardant.



12. Ensuring that incident commanders engaged on Type 1-3 wildfires have no collateral duties.
13. Ensuring that Medical Emergency Procedures Plans and/or Incident Emergency Plans are developed for all incidents.
14. Monitoring cumulative fatigue and exposure to environmental factors (for example, length of assignments, heat, smoke, and so forth) and ensure fitness for command, leadership, and management in fire management leadership, Agency Administrator, and support positions; see guidelines in Interagency Incident Business Management Handbook (PMS 902, NFES 2160) and FSH 5109.17, zero code, Fire and Aviation Management Qualifications Handbook.
15. Regularly monitor operations for effectiveness and take action when there is recognition of exceptional or problematic employee performance.
16. Ensuring employees with supervisory or managerial responsibilities in wildfire management stay abreast of and are skilled in current wildfire response information, such as: factors affecting wildfire behavior; wildfire response management and organization; intent and contents of Agency and interagency wildfire management directives; Land and Resource Management Plans; and economic and risk analysis.
17. Ensuring area burned from unplanned natural ignitions will be assessed to determine if desired conditions described in the Forest Land and Resource Management Plan have been met. These outcomes will be assessed and reported regardless of the strategy and objectives established for management of the wildfire. Refer to annual program direction for specifics on how to report accomplishments resulting from natural ignitions.
18. Ensuring their respective Geographic Area Coordination Center (GACC) and the appropriate Regional Fire Operations and/or Aviation Safety Program Manager are notified immediately of any aviation and wildfire fatality, serious injury, entrapment, fire shelter deployment, or accident with potential National significance (Reference FSM 6730 and FSH 6709.12, Ch. 30 for Accident Reporting and Investigation Policy and Guidelines).
19. Forest Supervisors must ensure that the Incident Status Summary (ICS-209) is submitted to the Geographic Area Coordination Center.
- 19 District Rangers must ensure that a sufficient number of incident after-action reviews are conducted for Type 3, 4, and 5 wildfires to adequately assess the unit's wildland fire response capability, performance, procedures and to enhance learning; see guidelines in Interagency Standards for Fire and Fire Aviation Operations (NFES 2724, Chapter 5) USFS Program Organization & Responsibilities and the Incident Response Pocket Guide (NFES 1077).
- 20 Determining the need and requesting authority to train and mobilize emergency firefighters in order to provide additional expertise and skills to supplement regular Forest Service forces during emergency situations; see guidelines in Interagency Incident Business Management Handbook, (PMS 902, NFES 2160).
- 21 Ensuring an Individual Wildland Fire Report is prepared for each wildfire and entered into the historic database Fire Statistics System (FIRESTAT, FSM 5180).

In addition, Agency Administrators (AA) are responsible for implementing an effective, efficient, risk-based wildfire response. All employees are required to support wildfire response actions.

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.
5. Utilize a National risk assessment model to inform the identification and prioritization of hazardous fuels reduction projects on National Forest System lands.
 - a. The results of the National risk assessment model will inform the allocation of funds and resources to the Regional level.
 - b. The National risk assessment model will function as both a baseline assessment for the Regions, and as a consistency check against the Regional assessment models to compare the results.
6. Review and approve Regional risk assessments to ensure consistency with the national risk assessment model.

3. 5140.43 – 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. Develop a Regional risk assessment model which identifies and prioritizes hazardous fuels reduction projects consistent with the National risk assessment model. This Regional risk assessment model shall inform hazardous fuels allocations.

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.



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/Fire_Mgt_Planning_Guide_2017FINAL.pdf, 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).
4. Utilize the National, Regional, or locally developed landscape level risk assessment process to inform the identification and prioritization of hazardous fuels reduction projects.
5. Document the project selection process.

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. Fire and Aviation Management Qualifications Handbook- 5109.17 – FSH

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

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.

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.

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).

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.

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.

E. Red Book Chapter 5, USDA Forest Service Wildland Fire and Aviation Program Organization and Responsibilities

Specific Line Officer Responsibilities for Fire and Aviation at the Field Level

The Forest Service has developed core fire management competencies for Line Officers with oversight responsibilities over fire management programs. They are presented here for reference:

- 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 exercising authority to initiate prescribed fire and other hazardous fuel reduction activities;



- 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 a “life first” and “readiness” environment.

Responsibilities

- Line Officers are responsible for all aspects of fire management.
- 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.
- 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.
- Ensure operational fire management responsibilities remain separated from agency administrator responsibilities in order to avoid collateral duty conflicts.

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

Preparedness

- Preparedness is a continuous process that includes all fire management activities conducted in advance of wildfire ignitions to ensure an appropriate, risk informed and effective wildfire response to meet National and Agency goals.
- Take all necessary and prudent actions to ensure firefighter and public safety.
- Ensure sufficient qualified fire and non-fire personnel are available to support fire operations at a level commensurate with the local and national fire situation.
- Ensure accurate position descriptions are developed and reflect the complexity of the unit. Individual Development Plans promote and enhance FMO currency and development.
- 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.
- Ensure the plans contained in the Fire Management Reference System (FMRS) are based on resource objectives found in the LRMP.
- Ensure budget requests and allocations reflect preparedness requirements from the program of work and support objectives from the LRMP.
- Develop preparedness standards that are in compliance with agency fire policies.
- Management teams 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.
- 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.
- Meet annually with cooperators and review interagency agreements to ensure their continued effectiveness and efficiency.



- Meet annually with local US Fish and Wildlife Service and NOAA Fisheries specialists to ensure the avoidance maps reflect changes during the year on additional species or changes made for designated critical habitat, and reporting and monitoring guidelines are still valid and being applied.

Wildfire Response

- Ensure use of fire funds is in compliance with Agency policies.
- WFDSS will be used to approve and publish decisions on all fires. See Chapter 11 for the fire criteria that require a published decision.
- Personally attend reviews on Type 1 and Type 2 fires. Ensure Agency Administrator representatives are assigned when appropriate.
- Provide incident management objectives, written delegations of authority, and a complete Agency Administrator briefing to Incident Management Teams.
- Ensure briefings include any applicable information for avoidance areas and waterways per the nationwide aerial application of fire retardant direction, mapping, and cultural resources. Include the reporting requirements in the briefing if a misapplication of fire chemical occurs. Provide resource advisors if the use of aerially applied fire retardant is expected and the unit has mapped avoidance areas (which include waterways and 300' or larger buffers) and otherwise evaluate the need for resource advisors for all other fires, and assign as appropriate.
- For all unplanned human-caused fires where responsibility can be determined, ensure actions are initiated to recover cost of suppression activities, land rehabilitation, damages to the resource, and improvements.
- Ensure structure exposure protection principles are followed (FSM 5135).
- Ensure that a sufficient number of incident after action reviews are conducted for Type 3, 4, and 5 wildfires to adequately assess the unit's wildfire response capability, performance, procedures and to enhance learning.

Wildfire Response Responsibilities and Oversight

- Agency Administrators will ensure that all Forest Service employees and employees of interagency partners working on Forest Service jurisdiction wildfires clearly understand direction.
- Agency Administrators must approve and publish decisions in WFDSS in a timely manner and issue delegations of authority to the Incident Commander in accordance with FSM 5133.3.
- Line Officer will assign an Agency Administrator to oversee an incident based on their certification level by incident type as directed in Chapter 5 of the Red Book (See Table 1).

Table 1. USFS Decision Approval by Incident Type, Red Book Chapter 5

Incident Type	USFS AA Certification Level to Approve WFDSS Decisions & Provide Incident Oversight*
Type 1	Advanced level
Type 2	Journey level
Type 3, 4, 5	Working level

*Authority may be retained at the Regional Forester level.

- Critical long duration wildfire oversight roles include ensuring that:
 - Up-to-date Published Decisions are completed and documented in WFDSS.



- Hazards are identified and risk assessments are incorporated into Published Decisions.
- Coordination with partners and potentially affected parties is conducted (including smoke impacts); Unified Command is implemented early when appropriate.
- Resource capacity and availability are adequately assessed to meet expectations.

Safety

- Review safety policies, procedures, and concerns with field fire and aviation personnel.
- Ensure timely follow-up actions to program reviews, fire preparedness reviews, fire and aviation safety reviews, and management reviews.
- Monitor the fire situation and provide oversight during periods of critical fire activity and situations of high risk.
- Ensure there is adequate direction in fire management plans to maintain fire danger awareness.
- Take appropriate actions with escalating fire potential.
- Ensure appropriate investigation or Lessons Learned analyses are conducted for incidents, entrapments, and serious accidents (see FSM 6730).

Agency Administrator Training and Certifications for Wildland Fire Management

Chapter 5 of the Red Book provides specific agency guidance on Agency Administrator certification. Direction states that Agency Administrator evaluation will cover training, background and experience, and demonstration of understanding of concepts and principles. Three levels of certification are described: Working level, Journey level, and Advanced level. Regional Foresters are accountable for certification of Line Officers.

Agency Administrator Core competencies:

Core competencies that must be demonstrated by Agency Administrators exercising decision-making authority for wildfires or prescribed fires include:

- Risk Management
- Wildfire response and incident management processes
- WFDSS/IFTDSS and other decision support tools
- Fuels management and prescribed fire processes
- Fire Prevention, mitigation, and education processes
- Social, political, economic and environmental impacts of wildland fire management activities
- Collaboration with partners and stakeholders
- Fiscal management

These core competencies form the basis for the Agency Administrator Task Book which is used to document that an individual has indeed demonstrated these competencies while working toward certification. For access to the Task Book, Pathways Chart and additional information on the Forest Service Agency Administrator Fire Certification Programs, visit the Decision Support Toolbox at https://wfmrda.nwcg.gov/line_officer_resources.php.

Agency Administrator Wildfire Certification Program

The following principles will guide certification of Agency Administrators in wildfire management:

- Regional Foresters are accountable for annual certification of Agency Administrators;
- Agency Administrator evaluation includes standards for training, background and experience, demonstrated ability, and utilizing the Task Book and Wildfire Pathways Chart which will result in a

qualitative evaluation of readiness by the Regional Forester;

- When the complexity level of a wildfire exceeds an Agency Administrator's certification, a coach will be assigned;
- Care should be taken when assigning Acting AAs to ensure operational fire management responsibilities remain separated from agency administrator responsibilities in order to avoid collateral duty conflicts;
- Agency Administrator competencies (aka certification level) supersedes position (e.g., a District Ranger certified at the Advanced Level may be the AA for a Type I Incident);
- This certification program will be periodically evaluated and updated as needed. When changes are made in training requirements, the Regional Forester may choose to "grandfather" Agency Administrators thereby maintaining their existing certification level; however, the updated training requirements must be met before advancement to the next level or before recertification after a lapse in currency;
- Assistance with decision documentation and analysis can be requested through the Wildland Fire Management RD&A – National Fire Decision Support Center (NFDSC); and
- The Coaching/Shadowing functions, to be administered by each region, is an integral part of this certification program.

Agency Administrators will be evaluated in three basic areas:

- Training;
- Background and experience; and
- Demonstrated understanding of concepts and principles as outlined in the Task Book.

This certification program is a multi-level process where Agency Administrators demonstrate competence in one of three levels of managing wildfires. Those levels would be Working, Journey, and Advanced.

Guidelines

In consideration of the appropriate level (Working, Journey, Advanced) to assign an Agency Administrator, the Regional Forester should consider the following guidelines:

- For individuals that do not meet at least the Working Level, a coach will be assigned to support that Agency Administrator in managing Type 3 or higher wildfire incidents.

Working Level –

The Agency Administrator could manage a low to moderate complexity fire. The Agency Administrator Trainee must meet the following in order to be certified at the Working Level:

- **Required Training:** *Risk Management 101* (in development); M-581, *Fire Program Management, an Overview*; or M-582, *Fire Program Management, Leading Complex Fire Programs*; and WFDSS training – WFDSS Refresher Topics located on the Decision Support Toolbox.
https://wfmrda.nwcg.gov/line_officer_resources.php
- Required Background and Experience:
 - Successful management of a minimum of one Type 3 or higher fire. Consider duration, complexity and size of the fire.
- Other Background, Experience, and Training That Supports:
 - Applicable experience in prescribed fire, wildfire, all-hazard or other incident oversight may also be considered in addition to other guidelines.
 - Management oversight of a low-complexity fire program and/or experience as an Agency



Administrator or representative.

- **Demonstrated Ability:** Successful evaluation by a coach (including feedback from ICs or ACs) that the candidate has demonstrated understanding and application of the responsibilities of an Agency Administrator on smaller low-complexity fires with a basic understanding of the elements of the core competencies. Use AA Task Book to document.

Journey Level –

The Agency Administrator could manage a moderate to high complexity fire. The Agency Administrator Trainee needs to be certified at the Working Level and meet the following to become certified at the Journey Level:

- **Required Training:** Risk Management 101 (in development); M-581, Fire Program Management, an Overview; or M-582, Fire Program Management, Leading Complex Fire Programs; and WFDSS training. WFDSS Refresher Topics located on the Decision Support Toolbox. https://wfmrda.nwcg.gov/line_officer_resources.php.
- **Required Background and Experience:**
 - Successful management of a minimum of one Type 2 or higher fire, or one successful higher complexity fire (Type 1). Duration, complexity and size of the fire should be considered.
- **Other Background, Experience, and Training That Supports:**
 - Applicable experience in prescribed fire, wildfire, all-hazard or other incident oversight may also be considered in addition to other guidelines.
 - Management oversight of a moderate-complexity fire program, or experience as an Agency Administrator or Representative on Type 2 or higher fires.
- **Demonstrated Ability:** Successful evaluation by a coach (including feedback from ICs or ACs) that the candidate has demonstrated understanding and application of the responsibilities of an Agency Administrator/Representative on moderate to large complex fires in the core competencies, and other elements that may be relevant. Use AA Task Book to document.

Advanced Level –

The Agency Administrator could manage one or more high complexity fire(s). The Agency Administrator Trainee needs to be certified at the Journey Level, and meet the following to become certified at the Advanced Level:

- **Required Training:** *Risk Management 101* (in development); M-582, *Fire Program Management*, Leading Complex Fire Programs; and WFDSS training – WFDSS Refresher Topics located on the Decision Support Toolbox. https://wfmrda.nwcg.gov/line_officer_resources.php.
- **Required Background and Experience:**
 - Successful management of several Type 1 or 2 fires (at least one is a Type 1 fire), depending on fire experience. Duration, complexity, and size of the fires should be considered.
- **Other Background, Experience, and Training That Supports:**
 - Applicable experience in prescribed fire, wildfire, all-hazard or other incident oversight may also be considered in addition to other guidelines.
 - Management oversight of a moderate to high-complexity fire program.
- **Demonstrated Ability:** Successful evaluation by a coach (including feedback from ICs or ACs) that the candidate has demonstrated understanding and application of the responsibilities of an Agency Administrator on large complex fires in the core competencies, and other elements that may be relevant. Use AA Task Book to document.

Evaluation Process-

- Every trainee will receive an evaluation from a certified Agency Administrator/Agency Administrator

Representative or coach using the Agency Administrator Task Book.

https://wfmrda.nwcg.gov/line_officer_resources.php.

- Individuals involved in a shadow assignment should receive creditable experience through documentation.
- The purpose of the Task Book 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.
- Every trainee will complete a Task Book for evaluation from an Agency Administrator/Agency Administrator Representative or coach. https://wfmrda.nwcg.gov/line_officer_resources.php.

Creditable work experiences to achieve and maintain certification levels:

- Coaching
- Regional Forester Representative (RFR)
- Acting Agency Administrator/Representative assignments
- Shadow assignments

Training opportunities to achieve and maintain core competencies:

- Upper levels of fire leadership and fire management courses,
- Function as the Agency Administrator or cadre member for S-420, S-520, 23 S-620, M-581, M-582, and other fire courses;
- Participate in advanced risk management training;
- Assigned to a Type 1 or Type 2 team as a training assignment (e.g., shadow plans) and see the world from their viewpoint;
- WFDSS training (see the WFDSS homepage <https://wfdss.usgs.gov> for training materials and the WFM RD&A Line Officer Resources page for Agency Administrator specific refresher training materials <https://wfmrda.nwcg.gov/>);
- Include risk management and fire management topics during annual line officer meetings;
- Attend staff rides (staff rides need to include a stand that portrays the Line Officer or Agency Administrator's perspective);
- Participate in prescribed fires and/or attend prescribed fire training;
- Participate in other leadership and/or decision-making training;
- Attend L-580, Leadership is Action.

Currency

Currency is reviewed annually by the Certifying Official for frequency of demonstrated exercise of Core Competencies through activities such as those described above or assignment as Agency Administrator/Coach/Representative. To maintain currency, an Agency Administrator/Representative will at a minimum, engage in at least one extended response wildfire incident within a three year period.

Guidance on the Selection of Coaches

Coaches can be a current or former Agency Administrator/Representative. The Regional Forester determines the level of certification for which a coach is qualified.

Criteria for individuals serving as coaches are as follows:

- Must be a "Journey" level Agency Administrator/Representative in dealing with large fire incident, or

rated at an experience level commensurate with incident being managed. Present and past Agency Administrators can serve as coaches, including retirees that were qualified/experienced; and

- Must be willing and able to serve as a coach.

Definitions:

Agency Administrator:

A general term meaning the official with the delegated authority, responsibility, and qualifications for decision-making on incidents or prescribed fire within a particular administrative unit.

Coach:

A fully qualified Agency Administrator/Representative at journey or advanced level.

Shadow:

An individual that does not perform the duty of Agency Administrator/Representative, but observes a qualified, designated Agency Administrator/Representative.

Agency Administrator Trainee:

An Agency Administrator working on certification at any given level by performing the role under the supervision and authority of the Agency Administrator and/or Representative.

Coach/Shadow Team:

A team comprised of a qualified Coach and group of Shadows who may travel to multiple incidents and support sites to increase their level of understanding.

Acting Agency Administrator:

An individual who has been delegated writing the necessary authorities to act in an Agency Administrator roll and is certified at the level required by the incident complexity to provide relief and support.

Regional Forester Agency Administrator Representative:

A representative that carries out roles and responsibilities as delegated.

F. 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: <https://www.nwcg.gov/publications/210>

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

G. 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

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.

Operational Risk Management (ORM)

Operational Risk Management is a continuous, systematic process of identifying and controlling hazards to increase certainty of outcomes. The ORM training and website was stood up to host risk training and reference materials relevant to all agency personnel – to help people assess risk and potential for consequences in their daily jobs. The ORM website is: <https://sites.google.com/firenet.gov/operational-risk-management/operational-risk-management> and the Risk Terminology Primer GTR 349 (https://www.fs.fed.us/rm/pubs/rmrs_gtr349.pdf) are good reference tools.

H. 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.

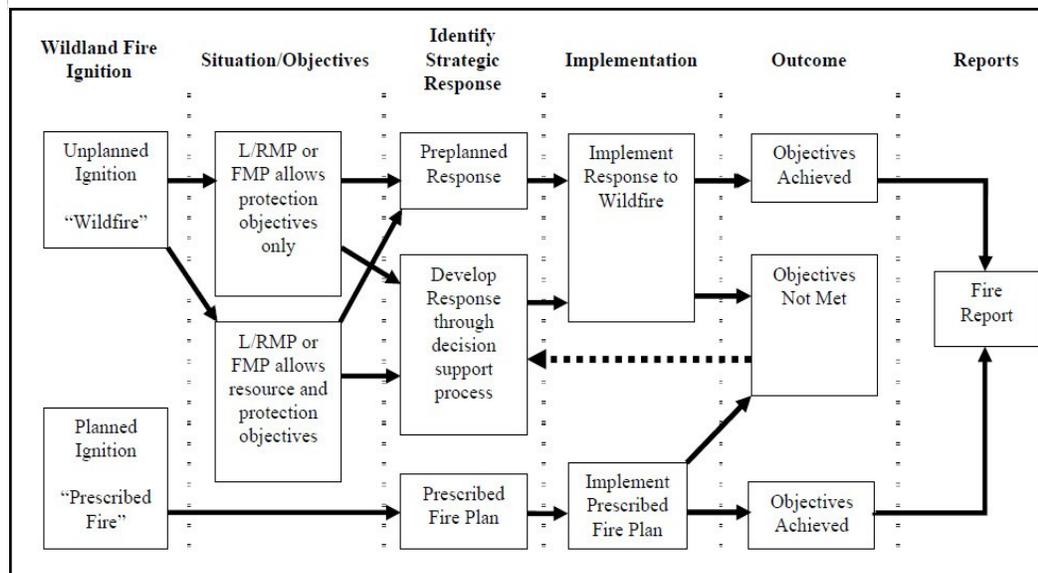


Figure 1. “Guidance for Implementation of Federal Wildland Fire Management Policy” 2009. Flow chart

The Risk Management Cycle is discussed in RMRS GTR-298 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

I. Incident Objectives and Requirements

Examination of wildland fire incident decisions during 2015 and 2016 (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 as intended.

The WFM RD&A Decision Support Toolbox webpage, <https://wfmrda.nwcg.gov> provides examples and guidance for writing good Incident Objectives and Requirements.

- Creating Incident Specific Objectives in WFDSS, https://wfmrda.nwcg.gov/docs/ Objectives & Example Fires/CreatingIncidentSpecificWFDSSObjectives_201902.pdf describes some best practices for creating incident specific objectives.
- USDA FS Briefing Paper, https://wfmrda.nwcg.gov/docs/ Objectives & Example Fires/BriefingPaperFindings04_08_2016.pdf provides recommendations and examples for improving Incident Objectives.
- White Paper- Improving WFDSS Incident Objectives and Incident Requirements and Relaying Leader’s Intent, https://wfmrda.nwcg.gov/docs/ Line Officer Guide/Writingincidentobjectives_LeadersIntentWhitePaper_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 Fire Management Planning Guide, http://fsweb.wo.fs.fed.us/fire/fmp/Fire_Mgt_Planning_Guide_2017FINAL.pdf replaces 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) referenced in the Guidance for Implementation of Federal-Wildland Fire Management Policy, February 2009, and previous policy issuance. The SFP and the FMRS, when prepared according to the Fire Management Planning Guide, will meet the intent of the Federal Wildland Fire Policy requiring an FMP for each acre of burnable vegetation.

Wildfire management, in response to ignitions, can help maintain or improve current conditions toward the desired conditions stated in the Land and Resource Management Plan (LRMP). However, current fuel conditions are dynamic, due to wildfires and prescribed fires, which can be easily displayed spatially, hence, the need for a spatial Fire Management Planning rather than a narrative Fire Management Plan.

The LRMPs of the National Forests and Grasslands provide direction and make decisions while SFP products visually depict that direction and FMRS documents guide implementation of the LRMP direction and decisions. Strategic objectives, represented in the SFP format, must link back to the resource management objectives found in the LRMP. LRMP objectives will also provide the basis for development and periodic revision of the FMRS implementation documents. These documents will be completed in collaboration with partner agencies to identify issues or concerns, especially regarding values at risk. Our strategy for response should be reflective of the Cohesive Strategy and collaboration with adjoining land managers, after a thorough assessment of risk, in relation to communities and other values.

SFP will more clearly represent only those LRMP objectives, requirements, social and resources/values at risk necessary to inform decisions related to a potential incident. SFP is implemented using Strategic Objective shapes and Management Requirement shapes that best represent an administrative unit's planning direction and will likely differ based on the complexity of a unit. Administrative units moving to the SFP process should leverage the spatial capabilities of WFDSS, but can keep their current fire management unit (FMU) shape layer when the shapes are representative of the Strategic Objective shapes found in the LRMP. However, if the FMU shapes do not represent the LRMP-defined areas, those shapes should not be converted into Strategic Objective shapes and new Strategic Objective shapes must be defined and loaded into Wildland Fire Decision Support System (WFDSS) using the SFP process.

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 (<https://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.

B. Preparedness

Redbook [Chapter 10](#): Fire preparedness is the state of being ready to respond to wildfires 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 Fire Management Plan (FMP).

Preparedness plans should include, but are not limited to:

- Fire Danger Operating Plan (as specified by agency requirements)
- 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)
- Geographic Area Mobilization Guide (updated annually)
- Geographic Area Draw-Down guidance (update annually)

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. <https://www.fs.fed.us/managing-land/fire/aviation/publications>.

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. <https://www.fs.fed.us/managing-land/fire/avsafety>.

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 (https://www.nifc.gov/policies/pol_ref_intgncy_prepcheck_USFS.html) provides access to the Interagency Preparedness Review Checklists on the following:

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

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 (Wildland Fire Decision Support System)

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) 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 for 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_ https://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*,_ https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_user_role.html
- Ensure Land and Resource Management Plan(s) direction is preloaded by a Data Manager. See the WFDSS Help Topic Data Management https://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*, https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Data_Mgmt.html
- Review the following:
 - What you need to know about WFDSS for the current year – Under the Decision Learning Resources Banner: https://wfdss.usgs.gov/wfdss/WFDSS_Training.shtml

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
- NWCG Standards for Interagency Incident Business Management
- Types of Agreements
- Annual Operating Plans
- International Wildland Fire Coordination and Cooperation
- Agreements
- 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

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.

1. 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.

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 <https://www.nwcg.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 Decision Support Toolbox page: https://wfmrda.nwcg.gov/line_officer_resources.php
 - Forest Service Agency Administrator Certification
 - Delegation of Authority, Leaders Intent and Briefing Package Template
 - Links to Incident Objectives Project with example and references for creating better Incident Objectives
 - Decision Making for Wildland Fire Incidents
 - Agency Administrator Refresher content
- WFDSS Help content: https://wfdss.usgs.gov/wfdss_help/index.htm

Part 2. Fires on Your Local Unit

I. SUCCESSFUL FIRE MANAGEMENT RESPONSE

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 if an IRWIN (Integrated Reporting of Wildland Fire Information) integrated CAD system is not used by the local unit.

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

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: https://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. <https://inciweb.nwcg.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 an Organization Assessment, and publish a decision.

All fires will have a published decision within WFDSS when they:

- Escape initial attack; or
- Exceed initial response; or
- Include objectives with both protection and resource benefit elements consistent with land management planning documents.

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 2 of this document and the WFDSS Help (http://wfdss.usgs.gov/wfdss_help/index.htm).

1. Initial Decision

When determining if a decision is needed consider the following (Redbook [Chapter 11](#)):

- 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 or other concerns such as air quality 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 Decision Support Toolbox page https://wfmrda.nwcg.gov/line_officer_resources.php on the WFM RD&A's website, see the heading Incident Objectives Project.

2. Criteria for a New Decision

Redbook [Chapter 11](#): A new decision is required when:

- The Periodic Assessment indicates the Course of Action (decision) is no longer valid; or
- The fire moves beyond the Planning Area; or
- The incident exceeds an established agency threshold for approval authority (cost or complexity); or
- The Risk and Complexity Assessment indicates that the incident exceeds existing management capability.

Considerations for determining when a new decision is needed:

- Costs are expected to exceed the estimated final costs in the current Decision; or
- Management Action Points have changed since the current Decision was published.

Additional information about WFDSS can be found in the Redbook [Appendix N](#) and Appendix 2 of this document. User support information, training materials, and other resources can be found at the WFDSS homepage. https://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml

B. WFDSS Decision and the Incident Management Team

The Agency Administrator 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 Agency Administrator(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".

<https://www.nwcg.gov/sites/default/files/memos/eb-m-12-005.pdf> and attachment <https://www.nwcg.gov/sites/default/files/memos/eb-m-12-005a.pdf>

1. Delegating portions of WFDSS to the IMT

The Agency Administrator 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. **Agency Administrator 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 Agency Administrator which include:

- 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.

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 (Redbook Chapter 11)**

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 (WFDSS).

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.

Populating the Relative Risk Assessment and Organization Assessment portions of the Wildland Fire Decision Support System (WFDSS) fulfill the need for a RCA. The RCA is also available at <http://www.nwccg.gov/publications/210>.

2. **Ordering an Incident Management Team and Transfer of Command**

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

The responsible Line Officer/ Agency Administrator 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.
- The ordering unit will specify times of arrival and transfer of command and discuss these timeframes with both the incoming and outgoing command structures.

3. **Prior to meeting the Team**

The responsible Agency Administrator, 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. **Setting Team Expectation**

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, In-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 consistent templates for the DOA, Leaders Intent and In-Briefing Package for the field to use to help alleviate these inconsistencies. These templates can be found in the 2019 Red Book as cited below (Appendix D and G), as well as on the WFM RD&A– Decision Support Toolbox page: https://wfmrda.nwcg.gov/line_officer_resources.php

a. **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 and FSM 5130.

[Chapter 11](#) and [Appendix G](#) of the Red Book provides direction and templates on delegations of authority and leader's intent. Agency Administrators must issue written delegations of authority to Incident Commanders.

The delegation should bridge direction provided in the Wildland Fire Decision Support System Decision, the Leader's Intent Letter and the Team In-Briefing Package.

b. Leaders Intent

This is an optional document to provide leadership expectations from the Agency Administrator information to an IMT that is not directly related to the strategic direction for managing a wildfire (strategic direction belongs in the WFDSS Decision). This Leader's Intent Document is one piece of many components of the entire Briefing Package provided to the Incident Management Team (IMT).

Appendix G of the Red Book and the WFM RD&A webpage – References and Guidance page: https://wfmrda.nwcg.gov/line_officer_resources.php provides an example Leaders Intent letter.

c. Agency Administrator/IMT Briefing Checklist

The 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 Agency Administrator 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.

For an Agency Administrators Briefing to IMT template consult Appendix D of the Red Book while also consulting Geographic Area and Regional sites for localized specific information regarding briefings.

d. The purpose of the Agency Administrator briefing is to:

- Provide a common understanding between the Agency Administrator 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 Agency Administrator 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 Agency Administrator 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.

e. Conducting the Line Officer/Agency Administrator briefing

The agenda for the Line Officer's briefing is outlined in [Appendix E](#) of the Redbook. 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.

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.
- 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. 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. The responsible Agency Administrator 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/or Leader's Intent Letter, and overall relationship with the host unit, cooperators, and incident support organization. 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.

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. Find out what other specific needs the team may have or anticipate and help make those resources available to them.

The responsible Agency Administrator, or a delegated representative (Agency Administrator'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.

The following are suggestions for the Agency Administrator 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. If you are competing for resources, you may need to consider alternative management strategies.
- 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.

7. Area Command Teams

A primary role of Area Command Team (ACT) is to coordinate the determination and implementation of overall objectives and strategies for incidents, set priorities for the allocation of critical resources within an area, and facilitate the effective use of resources for the fires they are delegated.

Specifically, Area Command Teams manage multiple complex incidents with three or more Type 1, or a combination including Type 2 or Type 3 Incident Management Teams in a geographic or sub-geographic area. Area Command are generally mobilized when the magnitude of the emergency situation exceeds the capacity of the local unit.

In general, when an Agency Administrator (AA) (i.e. Forest Supervisor, Park Superintendent, State Forester, Area Manager, etc) is overseeing multiple incidents with IMT's assigned, an Area Command Team can provide the leadership needed to get through the life of the incident(s). ACT's will assist the AA in setting overall strategy and priorities, allocating critical resources, ensuring incidents are properly managed, and ensuring objectives are met and strategies followed.

Area Command Teams are organized and managed by the National Multi-Agency Coordinating Group (NMAC) at the National Interagency Fire Center in Boise, ID. Currently, there are three (Land Management) Area Command Teams in the United States:

- Area Command Team 1
- Area Command Team 2
- Area Command Team 3

Each Area Command Team consists of

- Area Commander
- Assistant Area Commander, Plans

- Assistant Area Commander, Logistics
- Area Command Aviation Coordinator
- Additional positions, as deemed necessary at the time, may include: Facilities Unit Leader (Logistics), Information Officer (Command), Resource Unit Leader (Plans), Situation Unit Leader (Plans)

The Area Command website provides the following that may be helpful when considering use of an ACT:

<http://areacommandteam3.squarespace.com/>

- Orientation to Area Command
- Complexity indicators for ordering an Area Command Team
- Standard Operating Guidelines for Area Command Teams

D. Resource Advisors

When a wildland fire is managed by an incident management team, the Agency Administrator should assign a resource advisor (READ) to work for them, and with the team, to represent Agency Administrator 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 Agency Administrator and READ must remember that the READ works for the Agency Administrator 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. 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)
- 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.
- 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)

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, Aug 2017), available here: <https://www.nwcg.gov/sites/default/files/publications/pms313.pdf>

E. 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 ladderfuel.
- 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.

2. Long Term incidents

- Consult with Resource Advisor to locate suitable campsites. Scout thoroughly to avoid hazards (bee's nests, widow-makers, etc.).
- Plan for appropriate methods of:
 - - Helispot locations
 - - Supply deliveries
 - - Trash backhaul
 - - 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.

F. 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.

A Large Fire Cost Reviews (FS) may be conducted at the discretion of the Washington Office, at the request of the Regional Office, or when requested by multi-jurisdictional cooperators ([Redbook Chapter 18](#)).

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.

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

[Chapter 18](#) of the Red Book provides guidance on Large Fire Cost Reviews.

Consult Geographic and Regional sites for more localized cost share guidance and templates.

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 Standards for Interagency Incident Business Management (PMS 902, NFES 2160, and FSH 5109.34) 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:

<https://www.nwcg.gov/sites/default/files/publications/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.
- Documentation and reporting of claims.
- Documenting costs and cost management practices.

- Administrative processes for all-hazard incidents.

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. 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.

- 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

I. Post-Wildfire Activities

Chapter 11 of the Red Book provides direction regarding wildland fire management agency responsibilities for taking prompt action to determine the need for, and to prescribe and implement, emergency treatments to minimize threats to life or property or to stabilize and prevent unacceptable degradation to natural and cultural resources resulting from the effects of a fire on the lands they manage.

J. 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.

K. 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.)

Other considerations for long duration incidents include:

- Consulting with the 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. Resources Available to Line Officers

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.
 - People are 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.
- 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.

M. Additional Support Available to Line Officers Include:

- Regional Forester Representatives (RFR), discussed below. Contact the regional forester's office or regional fire director.
- RMA – Risk Management Assistance: The role of RMA is to bolster the line officer and the incident management team's ability to examine alternative strategies that better consider inherent tradeoffs of exposure, risk to highly valued assets, and opportunities for fire benefits. The intent is to bring enhanced capacity, apply existing and emerging decision support tools with risk management expertise, and improve the overall effectiveness and efficiency of our fire management response.
<https://wfmrda.nwcg.gov/RMAT.html>
- Decision Support Groups: Groups of individuals, who can gather and complete input requirements for a decision; work with your Geographic Area Editor and/or visit
https://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. <https://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.
- Area Command Teams. Managed by the National Multi-Agency Coordinating Group, NMAC and assist AA's managing multiple Type 1 and II incidents.
- In addition to these work with your Supervisor, Fire Staff Officer, and Regional Specialists (Fire Planning, Air Quality Specialist, Assistant Fire Directors etc.).

N. 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 (FS). A Large Fire Cost Review may be conducted at the discretion of the Washington Office, at the request of the Regional Office, or when requested by multi- jurisdictional cooperators (Redbook [Chapter 18](#))

O. Interagency Coordination and Cooperation

[Chapter 8](#) of the Red Book provides a section on Multi-Agency Coordination and Cooperation.

P. 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.

Q. 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.

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

R. 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.

S. Critical Incident

[Chapter 7](#) of the Red Book cover Safety and Risk Management as well as provides information on Critical Incident Stress Management (CISM). 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 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. <https://www.nwcg.gov/sites/default/files/publications/pms926.pdf>

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 at: <https://www.nwcg.gov/sites/default/files/publications/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.

The BLM assembled a program/website devoted to Critical Incident Stress Management (CISM) to provide peer support for work related incidents primarily for individuals and groups who work in the area of emergency response. Resources hosted on the website include but aren't limited too: requesting support, tool box for resource managers, training, references regarding suicide, PTSD, cumulative stress, reaction to stress etc. There are many useful references for more information visit the CISM website at: <https://gacc.nifc.gov/cism/index.html>.

T. 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. Forest Service Manual Direction 5139.1 and 5139.2 and the Red Book, [Chapter 18](#) identify different types of reviews, criteria for conducting them, and the Delegating or Authorizing Official required.

1. Forest Service Manual Direction 5139.1 and 5139.2

a. Regional Fire Reviews

The Regional Forester has the discretion to determine the need of a fire review. To determine the scope of a review, objectives identified above in sections 5139.01 and 5139.02 may be utilized. A review should be timely and should be a positive and constructive opportunity to examine opportunities for change in future actions. The Regional Forester may consult with the Washington Office, including the Director of Fire and Aviation Management to determine the need and extent of a review. This allows for improvement of program performance, operations, evaluation of costs, risk management and facilitates the application of focused improvements. A review may occur when an incident meets one or more of the following criteria:

- A Type 1 or Type 2 incident management team is assigned to the incident.
- There are significant political, social, natural resource, or policy concerns.
- The affected Forest Supervisor requests a review team.

At a minimum, the following areas should be focused on in the review process:

- Long-term strategies and objectives identified within the Wildland Fire Decision Support System (WFDSS).
- Management decisions and their alignment with Agency policy and direction.
- Recommendations to management for incident-specific and programmatic process improvements.
- Clarity of communication of Chief's Intent and the effectiveness of implementation in the field.
- Effectiveness of pre-season planning activities.

Results of the review process will be published annually describing lessons learned, systematic trends, significant factors that are influencing outcomes of response operations, and operational and systematic improvement recommendations. Findings will be sent to Regional Foresters, Deputy Chief, State and Private Forestry, Director of Fire and Aviation Management and appropriate wildland fire responders.

b. National Fire Reviews

The Washington Office, Director of Fire and Aviation Management, will select a subset of fires for review based on complexity and National significance ensuring the selected fires provide a cross sectional representation of cost, size, and oversight complexity. The reviews will be multi-tiered and foster a working environment that will improve the decision making process and develop a capacity for organizational learning. If a site visit is required, the Washington Office, Deputy Chief, State and Private Forestry, will notify the Regional Forester. The National review process can include real time analysis of fire information, informal discussions with fire managers and Regional personnel, and/or site visits by a cadre of specialists to individual incidents and or geographic areas.

1. The Washington Office, Director of Fire and Aviation Management, will conduct a National review on a statistically significant sample of large fires including incidents that exceed \$50 million in suppression costs and/or 100,000 thousand acres of Forest Service-managed land. In accordance with the Consolidated Appropriations Act, 2018, (H.R. 1626), the reviews will include analysis of the following factors:
 - a. Cost drivers
 - b. The effectiveness of risk management techniques and whether fire operations strategy tracked the risk assessment
 - c. Any resulting ecological or other benefits to the landscape
 - d. The impact of investments in wildfire suppression operations preparedness
 - e. Effectiveness of wildfire suppression operations, including an analysis of resources lost versus dollars invested
 - f. Effectiveness of any fuel treatments on fire behavior and suppression expenditures
 - g. Levels of exposure experienced by firefighters
 - h. Suggested corrective actions
 - i. Any other factors the Secretary of Agriculture determines to be appropriate.
2. At the discretion of the Washington Office, Director of Fire and Aviation Management, a national review can be conducted on incidents that meets one or more of the following criteria:
 - a. A Type 1 or Type 2 incident command team is assigned to the incident.
 - b. There are significant political, social, natural resource, or policy concerns.
 - c. The affected Regional Forester requests a review team.
3. The purpose of the review process is to:
 - a. Improve overall program performance and operational effectiveness through organizational learning while maintaining Agency oversight and accountability responsibilities.
 - b. Establish if Chief's Intent was clearly communicated and effectively implemented in the field.
4. Reviews will be conducted by a team of subject matter experts selected by the Washington Office, Fire and Aviation Management staff. The team could include subject matter experts in wildfire management/operations, local/Regional issues, natural resource issues, budget, and risk management.
5. Results of the review process will be published annually describing lessons learned, systematic trends, significant factors that are influencing outcomes of response operations, and operational and systematic

improvement recommendations. Findings will be sent to Regional Foresters, Deputy Chief, State and Private Forestry, Director of Fire and Aviation Management and appropriate wildland fire responders.

2.Redbook Chapter 18

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 Visit	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 (FS)	Washington Office Discretion	Washington Office
Significant Wildland Fire Review (DOI)	Refer to OWF Policy Memorandum 2016-013	Agency Director, Agency Administrator or individual bureau direction
Individual Fire Review	Management discretion	Local/State/Region/National
Lessons Learned Review <ul style="list-style-type: none"> • NPS/FS- FLA may be used 	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>	
Notice of Air Quality Exceedance (NOV) Review	<i>See Interagency Prescribed Fire Planning and Implementation Procedures Guide (PMS 484)</i>	

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



3. 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.

Wildland Fire Incident and 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 unfolding it to use as protection against heat, smoke and burning embers.
- 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 ¹	Management level that determines review types and authorizes review ²
Serious Wildland Fire Accident	Serious Accident Investigation (SAI) (DOI), FS- Facilitated Learning Analysis (FLA) process or the Coordinated Response Protocol (CRP) for FS employee fatality events.	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
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

¹ 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

² 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.

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

- NIFC, Reports and Investigations, Accident Investigation Resources. https://www.nifc.gov/safety/safety_reprtsInvest.html.
- Lessons Learned Center, Facilitate Learning Analysis Implementation Guide. <https://www.wildfirelessons.net/viewdocument/facilitated-learning-analysis-imple>.
- Lessons Learned Center Coordinated Response Protocol. <https://www.wildfirelessons.net/viewdocument/coordinated-response-protocol-crp>.
- 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).
- 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).

Burn Injuries

Chapter 7 of the Red Book provides information on the Required Treatment for Burn Injuries. For additional NWCG incident emergency medical information see: <https://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 development Program has some great resources for information regarding After Action Reviews <https://www.nwcg.gov/wfldp/toolbox/aars>. 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.

It is the Agency Administrator's responsibility to designate an interdisciplinary BAER team. However, BAER teams must coordinate closely with IC and Incident Management teams to work safely and efficiently. The Agency Administrator is responsible for submitting the Emergency Stabilization BAER plan to the Regional Office for review and approval within the timeframes established by each Agency. Coordination should occur with the Regional BAER Coordinator. If needed, extensions can be negotiated with those having the appropriate level of approval authority.

See FSM 2523 and FSH 2509.13 for agency specific policy and direction for BAER teams. Reference FSH 2509.13 Burned Area Emergency Rehabilitation Handbook.

Reference NIFC's BAER Website: <https://www.nifc.gov/BAER/>

Part 4: Prescribed Fire Management

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

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.

5142.42- Washington Office, Director, Fire and Aviation Management

The Director, Fire and Aviation Management must:

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

5142.43- Regional Foresters

Regional Foresters must:

- 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.
- Ensure Forest Supervisors are qualified to approve Prescribed Fire Burn Plans on forests and grasslands. See FSM 5142.51 for Forest Supervisor qualifications.
- 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 and result in significant cost or social impacts, particularly 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.

5142.44- Regional Directors, Fire and Aviation Management

Regional Directors, Fire and Aviation Management must:

- Provide oversight to ensure that Forests and Grasslands apply prescribed fire safely and cost effectively to achieve Land and Resource Management Plans objectives.
- 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.
- Monitor conditions and advise Forests and Grasslands of conditions which may compromise successful implementation of prescribed fire activities.
- 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.
- 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).
- Monitor prescribed fire activity and ensure accurate and timely reporting (tabular and spatial) of all Forest or Grassland prescribed fire activity.

5142.45- Forest Supervisors



Forest Supervisors must:

- 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 sec. FSM 5142.51).
- 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 sec. FSM 5140.7).
- Request Regional Forester approval for new prescribed fire as required by Regional direction, or National direction for Preparedness Levels IV and V.
- 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 5140 and the Interagency Prescribed Fire Planning and Implementation Procedures Guide.
- 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.
- Conduct reviews of all prescribed fires that are converted to wildfire status that do not meet criteria for a Regional Forester review (sec. 5142.42). Report the results of the review to the Regional Forester within 60 days after the wildfire declaration.
- Ensure that prescribed fire personnel are trained in the After Action Review (AAR) process and that they routinely complete AARs after prescribed fire operations.
- 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.

5142.46- District Rangers

District Rangers must:

- 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.
- 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 5140 and the Interagency Prescribed Fire Planning and Implementation Procedures Guide.
- Ensure the personnel implementing Prescribed Fire Burn plans meet service-wide and regional qualifications (sec. FSM 5142.5) and the Interagency Prescribed Fire Planning and Implementation Procedures Guide).
- 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.
- Report potential and actual exceedances of the National Ambient Air Quality Standards (NAAQS) as soon as practicable.

C. Interagency Prescribed Fire Planning and Implementation Procedures Guide – July 2017

<https://www.nwcg.gov/sites/default/files/publications/pms484.pdf>

The agency administrator is the line officer (or designee) of the agency or jurisdiction that has been delegated or

assigned the authority and responsibility for the prescribed fire. These usually include the NPS park superintendent, BIA agency superintendent, tribal administrator, USFS forest supervisor or district ranger, BLM district or field office manager, or USFWS project leader or refuge manager.

1. Agency administrator responsibilities:

- Review and approve the final complexity rating.
- Approve prescribed fire plans, and understand the risks and benefits associated with it.
- Agency administrator's approval signature (Element 1, Signature Page, Prescribed Fire Plan) 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, Prescribed Fire Plan.
- Ensure that coordination with neighbors, cooperators and air quality regulators has occurred.
- 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.
- Provide for the timely declaration of prescribed fire as wildfire.
- 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.

D. 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 FM 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)
- Guidance for Implementation of Federal Wildland Fire Management Policy (February 13, 2009) http://www.nifc.gov/policies/policies_documents/GIFWFMP.pdf

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

E. Red Book Chapter 5, USDA Forest Service Wildland Fire and Aviation Program Organization and Responsibilities (Fuels Management)

1. **Specific Line Officer Responsibilities for Fire and Aviation at the Field Level**

Responsibilities:

- Line Officers are responsible for all aspects of fire management.
- 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.
- 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.
- Ensure operational fire management responsibilities remain separated from agency administrator responsibilities in order to avoid collateral duty conflicts.

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

Fuels:

- Plan and implement a hazardous fuels management and prescribed fire program applying principles and policy elements described in FSM 5100 and 5140 and guided by the goals described in the National Cohesive Wildland Fire Strategy.
- 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 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.
- 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 supported by the Clean Air Act.
- 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. Initiation of new prescribed fire must be in compliance with air quality regulations and standards.
- All prescribed fires should be conducted using Basic Smoke Management Practices. USDA Natural Resources Conservation Service and Forest Service Technical Note (2011). <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/air/>
- 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 (PMS 484) available at <https://www.nwcg.gov/publications/484>.
- Review and approve Prescribed Fire Plans and ignitions:
 - Engage in the development of the Complexity Analysis; review and approve the final complexity rating.

- Ensure that the 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 decision document.
- Approve prescribed fire plan amendments and determine the need for additional technical review of proposed plan amendments prior to approval.
- If more than one year has elapsed since a prescribed fire plan was last approved, the plan will be reviewed, updated as necessary, and re-approved before implementation.
- Authorize ignition of prescribed fire as delegated and adhere to procedures as described in 5140 for Regional and/or National level approvals for initiation of new and continued prescribed fire activities at National Preparedness levels 4 and 5 or when forecast National Fire Danger Rating System adjective ratings are at “Extreme” category.
- Report all instances of prescribed fires resulting in a wildfire declaration and/or air quality Notice-of-Violation as required in FSM 5140.

2. **Agency Administrator Certification for Prescribed Fire**

Details of the certification process can be found in [Chapter 5](#) of the Red Book. Core competencies that must be demonstrated by Agency Administrators exercising decision-making authority for wildfires or prescribed fires include:

- Risk Management
- Wildfire response and incident management processes
- WFDSS/IFTDSS and other decision support tools
- Fuels management and prescribed fire processes
- Fire Prevention, mitigation, and education processes
- Social, political, economic and environmental impacts of wildland fire management activities
- Collaboration with partners and stakeholders
- Fiscal management

These core competencies form the basis for the Agency Administrator Task Book which is used to document that an individual has indeed demonstrated these competencies while working toward certification. For access to the Task Book, Pathways Chart and additional information on the Forest Service Agency Administrator Fire Certification Programs, visit the Decision Support Toolbox at <https://wfmrda.nwcg.gov>.

Agency Administrators will be evaluated in three basic areas:

- Training;
- Background and experience; and
- Demonstrated understanding of concepts and principles.

This certification program is a multi-level process where Agency Administrators demonstrate competence in one of three levels of prescribed fire complexity. Those levels are Low, Moderate, and High.

Guidelines

In consideration of the appropriate qualification level (Low, Moderate, or High) to certify an Agency Administrator, the Regional Forester should consider the following guidelines:

Low Complexity Level

The Agency Administrator can review, approve, authorize and provide oversight for the management of low

complexity prescribed fires. The Agency Administrator Trainee must meet the following in order to be certified at the Low Complexity level:

- **Required Training:** M-581, Fire Program Management – An Overview or M-581, *Fire Program Management, an Overview* or Agency Administrators Prescribed Fire Workshop at the Prescribed Fire Training Center (recommended for AAs seeking more hands-on prescribed fire experience).
- **Required Background and Experience:** Successful management of a minimum of one (1) Low Complexity prescribed fire, or one or more low complexity wildfires (Type 4 or 5).
- **Other Background, Experience, and Training That Supports:**
 - Applicable experience in prescribed fire, wildfire, all-hazard or other incident or project oversight may also be considered in addition to other guidelines.
 - Management oversight of a low-complexity fire program.
- **Demonstrated Ability:** Successful evaluation by a coach (including feedback from FMO/Fire Staff/Director) that the candidate has demonstrated understanding and application of the responsibilities of an Agency Administrator on smaller low-complexity prescribed fires with a basic understanding of the elements of the core competencies. Use AA Task Book to document.

Moderate Complexity Level

The Agency Administrator can review, approve, authorize and provide oversight for the management of moderate complexity prescribed fires. The Agency Administrator Trainee needs to be certified at the Low Complexity Level and meet the following to become certified at the Moderate Complexity level:

- **Required Training:** *Risk Management 101*. Pathways diagram and resources can be found on the Decision Support Toolbox https://wfmrda.nwcg.gov/line_officer_resources.php
- **Required Background and Experience:** Successfully review and approve one (1) or more prescribed fire plans at a moderate complexity level and authorize and provide oversight for the ignition of three (3) or more individual burn units under a moderate complexity plan, and complete a minimum of (1) post-burn review of a moderate complexity prescribed fire.
- **Other Background, Experience, and Training That Supports:**
 - Applicable experience in wildfire, all-hazard or other incident oversight may also be considered in lieu of other guidelines.
 - Management oversight of a moderately complex prescribed fire program, providing for a workforce with appropriate training and equipment, NEPA compliance and project planning, social/political considerations, smoke management, public information, etc.
- **Demonstrated Ability:** Successful evaluation by a supervisor or coach (including feedback from FMO/Fire Staff/Director) that the candidate has demonstrated understanding and application of the responsibilities of an Agency Administrator on moderate complexity prescribed fires with an understanding of the core competencies and other elements that may be relevant.

High Complexity Level

The Agency Administrator can review, approve, authorize and provide oversight for the management of high complexity prescribed fires. The Agency Administrator Trainee needs to be certified at the Moderate Complexity Level, and meet the following to become certified at the High Complexity Level:

- **Required Training:** *Risk Management 101*; M-582, *Fire Program Management, Leading Complex Fire Programs*; at least one continuing education course in fireline leadership/decision-making. Pathways diagram and resources can be found on the Decision Support Toolbox https://wfmrda.nwcg.gov/line_officer_resources.php
- **Required Background and Experience:** Successfully review and approve one (1) or more prescribed fire plans at a high complexity level and authorize and provide oversight for the ignition of one (1) or



more burn units under a high complexity prescribed fire plan and, complete a minimum of one (1) post-burn review of a high complexity prescribed fire.

- **Other Background, Experience, and Training That Supports:**

- Applicable experience in prescribed fire, wildfire, all-hazard or other incident oversight may also be considered in lieu of other guidelines.
- Management oversight of a moderate to high complexity prescribed fire program, providing for a workforce with appropriate training and equipment, NEPA compliance and project planning, social/political considerations, smoke management, public information, etc.
- **Demonstrated Ability:** Successful evaluation by an Agency Administrator or coach (including feedback from FMO/Fire Staff/Director) that the candidate has demonstrated understanding and application of the responsibilities of an Agency Administrator on large complex fires in the core competencies, and other elements that may be relevant.

Evaluation Process

- Every trainee will receive an evaluation from a certified Agency Administrator or coach using the Agency Administrator Task Book.
- Individuals involved in a shadow assignment should receive creditable experience through documentation.

Refer to the pathways chart found in Decision Support Toolbox

http://wfmrda.nwcg.gov/line_officer_resources.php

Training opportunities to achieve and maintain core competencies:

- Upper levels of fire leadership and fire management courses;
- Function as the Agency Administrator in sand table exercises and training simulations;
- Participate in prescribed fire and fire management training such as RX-410 and RX-510;
- Act as a member or leader for a team assigned to review a Declared Wildfire or Violation of Air Quality Standards;
- Attendance/Participation in RT-300, *Prescribed Fire Burn Boss Refresher* training;
- Participate in prescribed fires and/or attend prescribed fire training; and
- Participate in other leadership and/or decision-making training.

Currency

Currency is reviewed annually by the Certifying Official for frequency of demonstrated exercise of Core Competencies through activities such as those described above or assignments as agency Administrator on incidents of appropriate level within a three-year interval.

Guidance on the Selection of Coaches

Refer to the pathways chart found in the Decision Support Toolbox

https://wfmrda.nwcg.gov/line_officer_resources.php

F. 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.

The Fire Management Planning Guide (7/2017)

http://fsweb.wo.fs.fed.us/fire/fmp/Fire_Mgt_Planning_Guide_2017FINAL.pdf introduces the Fire Management Reference System (FMRS) and Spatial Fire Planning (SFP) concepts as a replacement for Fire Management Plans (FMP) reference in the 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 [The Fire Management Planning Guide 7/2017)], will meet the intent of the Federal Wildland Fire Policy requiring an FMP for each acre of burnable vegetation.

G. 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: <https://www.nwcg.gov/publications/484>

H. 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.

I. 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:

NWCG Smoke Management Guide For Prescribed Fire, [PMA 420-2: https://www.nwcg.gov/publications/420-2](https://www.nwcg.gov/publications/420-2) (February 2018). This guide contains information on prescribed fire smoke management techniques, air quality regulations, smoke monitoring, modeling, communication, public perception of prescribed fire and smoke, climate change, practical meteorological approaches and smoke tools.

The national smoke management website (<https://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.

FSM 5142.8 Smoke Management

- 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.
- 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.

- 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
- 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 is now part of the Interagency Fuel Treatment Decision Support System (IFTDSS) and can be found at the following website:
https://iftdss.firenet.gov/landing_page/.

J. Planning Tools

See Appendix 1.

II. 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 to the Lessons Learned Center through the Rapid Lesson Sharing process at <https://www.wildfirelessons.net/resources/rapidlessonsharing>.

The standard questions to answer in conducting an AAR are:

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

B. 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: <https://www.nwcg.gov/sites/default/files/publications/pms484.pdf> and Red Book Chapter 18 (Identifies documents pertinent to each agency). Declared Wildfire Reviews will be submitted to the Wildland Fire Lessons Learned Center (LLC) by the agency fuels program lead, or utilize the current contact information on the Lessons Learned Center website at <https://www.wildfirelessons.net/aboutus>.

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.

C. Air Quality Notice of Violation (NOV) Review

An Air Quality Notice of Violation (NOV) Review would follow direction in "Declared Wildfire Reviews" (<https://www.nwcg.gov/publications/484>) that supports 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 <https://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 of the smoke management elements of the prescribed fire plan for the prescribed fire under review.

APPENDIX 1: 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.

1. ArcFuels

<https://www.firelab.org/project/arcfuels> 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.

2. IFTDSS

https://iftdss.firenet.gov/landing_page/

The IFTDSS online application is being designed to make the fuels planning, analysis and management process more efficient by:

- Providing a web-based platform for users to develop, store, edit and access fuels planning projects, landscapes, data and analyses, from any computer, anywhere.
- Integrating many common fire behavior and fire effects models in a single user interface.
- Linking to common reporting databases to more easily access, view and submit fuels planning information.
- Enabling users to develop fuels planning scenarios and comparisons and export results, reports, tables, and files for use in fuels planning documentation or use for further analysis and collaboration.

Over the span of 2017, 2018, and beyond, additional capabilities will be added to IFTDSS with the goal of eventually offering all the tools needed by the fire management community to conduct fuels planning and related analysis.

3. Fuel and Fire Tools (FFT)

<https://www.fs.usda.gov/ccrc/tools/fuel-fire-tools-fft> Fuel and Fire Tools (FFT) is a software application that integrates several fire management tools, including the Fuel Characteristics Classification System (FCCS - version 3.0), Consume (version 4.2), Fire Emission Production Simulator (FEPS - version 2.0; under active development at this time), Pile Calculator, and Digital Photo Series into a single user interface.

4. Smoke Modeling Tools

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

- The NWCG Smoke Management Guide for Prescribed Fire (2/2018) <https://www.nwcg.gov/sites/default/files/publications/pms420-2.pdf> provides information on smoke management tools.
- The Wildland Fire Air Quality Response Program (WFAQRP)- AirFire site has multiple tools for visualizing and monitoring air quality and smoke impacts. <https://tools.airfire.org>.



- The tools include:
- Aggregated ground monitoring information for PM 2.5
- BlueSky Daily Run Viewer (Websky)- provides visualization of results from multiple smoke model prediction runs.
- Ensemble Trajectories- Customized Trajectory Modeling
- BlueSky Playground- Customized Emissions, and Smoke Modeling
- Arctic Transport Potential Forecast
- Simple Smoke Model http://southernfireexchange.org/Models_Tools/Simple-Smoke/simple-smoke.html
- VSmoke <https://webcam.srs.fs.fed.us/tools/vsmoke/>
- The VSmoke-GIS model uses many of same calculation as VSmoke (Lavdas 1996), but the output is displayed in the ArcMap or the ArcView software, developed by Environmental Systems Research Institute® (ESRI). The VSmoke-GIS model predicts the maximum downwind distance a PM2.5 (fine particle) concentration is predicted to occur. The user of VSmoke-GIS can enter up to 10 fine particle concentrations to evaluate, or choose the 5 fine particle concentration that relate to the Environmental Protection Agency's air quality index (AQI).

APPENDIX 2: WFDSS

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

A. COMMON WFDSS LINE OFFICER QUESTIONS

1. 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?

2. 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). For each specific incident, the Incident Owner must identify the appropriate Approver and/or Reviewer. Incident Approvers are by default granted editing privileges for an incident, but edit privileges can be removed by Incident Owners if desired.

Decision Reviewer

Reviewers are responsible for examining the documentation related to an incident decision and indicating 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.

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.

3. How Do I Request a WFDSS Account or Add 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 the IIA Help Desk (<https://iiahelpdesk.nwcg.gov/> or 1-866-224-7677). 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.

A federal email address is preferred when requesting an account as this provides the administrator approving the applications validity that the individual has completed the required federal security training. Non-federal users are approved as needed to support the interagency fire management mission, but are required to provide proof of security awareness training.

Once an account has been established, user can request user roles from within WFDSS by selecting the **My Home** tab and **User Roles** from the menu on the left.

4. 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 team's management from the beginning.

5. 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 https://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.

6. 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, https://wfdss.usgs.gov/wfdss_help/4365.htm.

7. What Cost Estimate Tools are Available?

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

3. **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 https://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.
4. **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.

8. 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.

9. 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, https://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) <https://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.

10. 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.

B. 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.

1. 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 decision consists of 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.

2. 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

3. 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

4. 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

5. 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

6. 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.

7. 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*
https://wfdss.usgs.gov/wfdss_help/4368.htm

8. 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, https://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, https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_map_shapes.html

9. 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, https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Est_Cost_Incident_1.html

10. 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, https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_About_Rationale.html

C. APPROVING/REJECTING AND PUBLISHING A DECISION

1. 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.

2. 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.

3. 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*
https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Approve_Decision.html.

D. 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.

1. 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.

2. 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.

5. 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?

6. 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.

E. 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.

1. WFDSS Fire Behavior and Fire Economic tools

A. 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).

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*

https://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*

https://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 do 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* https://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 https://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.

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 table can guide your choice of the best WFDSS Fire Behavior Tool to answer your specific question. The “*” indicates a tool available as desktop software outside of WFDSS.

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)
Type of Tool	Spatial, only in WFDSS	Spatial, desktop and WFDSS	Spatial, desktop and WFDSS	Spatial, only in WFDSS
General Time Frames	For current burn period	For Next 1-3 Days	For Next 1-7 Days	For 7-30 Days in Future
Fire Behavior Questions	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.	

B. 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.

1. 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* https://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*, https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Obtain_VI.html

2. 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*, https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_values_at_risk_info.html.

3. 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 50th 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, https://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	

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

2. 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%".

Pocket cards are often created by Dispatch Centers, or pocket cards for many areas across the US are available at https://famit.nwcg.gov/applications/WIMS/PocketCards/PocketCards?field_gacc_value%5B%5D=Alaska

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. BehavePlus is available here: <https://www.frames.gov/behaveplus/home>.

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."

FireFamilyPlus is available here: <https://www.firelab.org/project/firefamilyplus>.

F. AIR QUALITY TOOLS

WFDSS pulls smoke dispersion information from the National FCAMMS Point Forecast Product <https://cefa.dri.edu/FCAMMS/National%20FCAMMS%20forecast%20guidance%20documentation.pdf>. This information is updated every three hours and can be accessed for an incident, an analysis, or for any location from the Intelligence map. Refer to the WFDSS Help topic *Viewing Smoke Dispersion Information*, https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Viewing_Smoke_Info.html for more information.

G. 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 staff.

WFDSS Help and Helpdesk

Consider your first line of WFDSS assistance the WFDSS Help: https://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 or 1-866-244-7677.

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. All fire behavior requests are coordinated through the GAEs.

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*, https://wfdss.usgs.gov/wfdss_help/WFDSSHelp_Find_GA_Editor.html.

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. <https://www.wfmrda.nwcg.gov> or 1-208-387-5253.

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.

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.