Chapter 09 Preparedness

2

Preparedness

5 Preparedness is the result of activities that are planned and implemented prior to
6 wildland fire ignitions. Preparedness is a continuous process that includes
7 developing and maintaining unit, state/regional, and national level firefighting
8 infrastructure, predicting fire activity, hiring, training, equipping, and deploying
9 firefighters, evaluating performance, correcting deficiencies, and improving
10 overall operations. The preparedness process includes routine pre-season
11 actions as well as incremental in-season actions conducted in response to
12 increasing fire danger.

12 increasing fire danger

Preparedness actions are based on operational plans such as fire danger operating plans, which use information from decision support tools such as the National Fire Danger Rating System (NFDRS), the Canadian Forest Fire Danger Rating System (CFFDRS, used in interior Alaska), the Palmer Drought Index, live fuel moisture data, and other Predictive Services and National Weather Service products such as Monthly or Seasonal Wildland Fire Outlooks, Seasonal Climate Forecasts, Wildland Risk Analyses, and other established information sources.

22

25

31

32

33

34

35

36

37

38

39

40

41

Fire Danger Rating Operating Plan

A Fire Danger Rating Operating Plan is a fire danger applications guide for agency users at the local level. A Fire Danger Rating Operating Plan documents the establishment and management of the local unit fire weather station network and describes how fire danger ratings are applied to local unit fire management decisions. Fire danger rating operating plans may be packaged as either standalone documents or as part of a larger planning effort such as a fire management plan. Fire danger rating operating plans include, but are not limited to, the following minimum components:

Roles and Responsibilities

Defined for those responsible for maintenance and daily implementation of the plan, program management related to the plan, and associated training. Training for development of fire danger rating areas is available through NWCG-sponsored NFDRS courses.

Operational Procedures

This section establishes the procedures used to gather and process data in order to integrate fire danger rating information into decision processes. The network of fire weather stations whose observations are used to determine fire danger ratings is identified. Station maintenance schedules are defined as appropriate.

42 43

Release Date: January 2006 09-1

NFDRS offers several choices of fuel model and output to the user. Distinct selections of fuel model and index/component are appropriate for different management decisions (such as internal readiness or industrial and public restrictions). The choice of NFDRS fuel model and index or component used to

determine fire danger ratings to support particular decisions is explained in this

6 section.

23

24

25

26

27

28

30

32

33

35

36

37

38

39

40

41

42

43

44

NFDRS requires periodic management in order to produce appropriate results that are applied in a timely manner. Some daily observation variables (such as state of the weather, fuels wet flags) are entered manually. This procedure (often called "taking the weather") also initiates the calculation of daily and 11 forecasted outputs in the Weather Information Management System (WIMS) and ensures data storage in the National Interagency Fire Management Integrated Database (NIFMID). These efforts are coordinated with the local 14 National Weather Service fire weather meteorologists and Geographic Area Coordination Center (GACC) predictive services meteorologists to provide timely forecasted NFDRS outputs. Observed (afternoon) and forecasted (tomorrow) NFDRS outputs are communicated daily. Live fuel moisture model inputs (such as herbaceous vegetation stage, season code, greenness factor) are adjusted seasonally in WIMS (http://famweb.nwcg.gov/) at appropriate times. Decision points (such as percentiles discussed below) are determined in FireFamily Plus and reviewed and adjusted annually or more often as

• Fire Danger Rating Inventory

Identifies basic components of the operating plan such as dispatch response areas, protection units, administrative units, fire history, land management planning direction, standards and guidelines, etc; aggregates NFDRS fuel models, slope classes (topography), and weather/climatology into fire danger rating areas; validates the existing weather station network and identifies any additional stations to support fire danger rating needs.

• Climatic Breakpoints and Fire Business Thresholds

appropriate in WIMS and/or other fire danger platforms.

Climatic breakpoints and fire business thresholds are used to define fire danger inputs for management decisions in each fire danger rating area or group of areas. Activities, events, and fire operations affected by fire danger are identified, and appropriate NFDRS components or indices are selected as decision guides. Historical analysis of fire weather data is used to identify climatic breakpoints for staffing level and adjective fire danger rating outputs.

The Staffing Level is used to make daily internal fire operations decisions. A unit can operate with anywhere from 3 to 9 levels of staffing. Most units typically use 5 (1,2,3,4,5) or 6 (1,2,3L,3H,4,5). Staffing Level is a direct output of the danger rating processor and is based on one of the following:

NFDRS (Burning Index, Energy Release Component, Spread Component, or Ignition Component)

- Keetch-Byram Drought Index
- Additional Considerations:
 - Palmer Drought Index or other drought index
 - ➤ Live Fuel Moisture (calculated or sampled)
 - Canadian Forest Fire Danger Rating System
- Soil Moisture

6 7

2

Adjective Fire Danger Rating

Adjective Fire Danger Rating (low, moderate, high, very high, extreme) is based
 on the NFDRS index or component used to compute staffing level and the
 ignition component. It is a general description of fire danger for the purpose of
 informing the public. Adjective ratings are computed automatically in the
 Weather Information Management System (WIMS) based on NFDRS
 parameters provided by local fire managers.

15

Climatic Breakpoints and Fire Business Thresholds

Climatic breakpoints and fire business thresholds are established to provide
NFDRS-based decision points for all appropriate management responses.
Climatological breakpoints are points on the cumulative distribution of one fire
weather/fire danger index without regard to associated fire occurrence/
business. For example, the value of the 90th percentile ERC is the
climatological breakpoint at which only 10 percent of the ERC values are
greater in value. The percentiles for climatological breakpoints are
predetermined by agency directive as shown below.

- **BLM** 80th and 95th percentiles
- **FWS** 90th and 97th percentiles
 - NPS 90th and 97th percentiles
- **FS** 90th and 97th percentiles

29

27

It is equally important to identify the period or range of data analysis used to
determine the agency percentiles, as well as what percentiles are used. The
actual calculated percentile values for 12 months of data will be different from
the percentile values for the fire season. Year round data should be used for
percentiles for severity type decisions, and percentiles based on fire season data
for staffing levels and adjective fire danger.

36

Fire business thresholds are values of one or more fire weather/fire danger indexes that have been statistically related to occurrence of fires (fire business). Generally the threshold is a value or range of values where historical fire activity has significantly increased or decreased.

41

Climatic breakpoints and fire business thresholds are developed with NFDRS
 software, such as FIREFAMILY PLUS, and are applied to appropriate NFDRS
 processors, such as WIMS, to determine daily staffing levels and adjective

ratings. Training for the FIREFAMILY PLUS program is available at local,
 regional, and national NFDRS courses. Applications for climatic breakpoints
 and fire business thresholds include:

- Public Information
- Public/Industrial Use Restrictions
- Staffing Levels
- Severity Requests
- Situational Awareness
- Predictive Services
- Fire Planning

11

12

19

20

21

32

- Pre-Positioning
- Dispatch Levels
- Fire Program Analysis (FPA)
- National Preparedness Levels
- Local Preparedness Levels
- 16 Resource Allocation
- 17 Resource Prioritization
- 18 Rx Fire Complexity Analysis

Fire Danger Pocket Card for Firefighter Safety

The Fire Danger Pocket Card is used to communicate information on fire danger to firefighters. The prime objective of fire danger rating is to provide a measure of the seriousness of local burning conditions. The Pocket Card provides a visual reference of those conditions and how they compare to previous fire seasons. Pocket Cards are developed and implemented according to NWCG guidelines posted at http://famweb.nwcg.gov/pocketcards/. Fire Danger Pocket Cards are recommended at each local unit where weather data exists.

- BLM Fire Danger Pocket Cards are developed for and implemented at
 each local unit.
- FS Forest Supervisors will develop and distribute Fire Danger Pocket
 Cards to each fireline supervisor.

Preparedness Plan

Preparedness plans provide management direction given identified levels of burning conditions, fire activity, and resource commitment, and are required at national, state/regional, and local levels. Preparedness Levels (1-5) are determined by incremental measures of burning conditions, fire activity, and resource commitment. Fire danger rating is a critical measure of burning conditions. Refer to the *National Interagency Mobilization Guide* for more information on preparedness plans.

41 42 43

09-4

Preparedness Level/Step-up Plans

- ² Preparedness Level/Step-up Plans are designed to direct incremental
- preparedness actions in response to increasing fire danger. Those actions are
- delineated by "staffing levels." Each Step-Up Plan should address the five
- s preparedness levels (1, 2, 3, 4, and 5) and the corresponding planned actions that
- are intended to mitigate those fire danger conditions. Several assessment tools
- are available to measure fire danger.
- 8 Outputs from the fire danger rating operating plan process, such as staffing
- 9 levels, are used to support the decisions found in staffing plans, step-up staffing
- plans, preparedness levels, dispatch response plans, dispatch response levels,
- etc. Increasing fire danger results in increasing staffing levels, suggesting a
- corresponding increase in preparedness actions intended to mitigate those fire
- danger conditions.

14

The Staffing Plan describes escalating responses that are pre-approved in the fire management plan. Mitigating actions are designed to enhance the unit's fire management capability during short periods (one burning period, Fourth of July or other pre-identified events) where normal staffing cannot meet initial attack, prevention, or detection needs. The difference between preparedness level/step-up and severity is that preparedness level/step-up actions are established in the unit fire management plan, and implemented by the unit when those pre-identified conditions are experienced. Severity is a longer duration condition that cannot be adequately dealt with under normal staffing, such as a killing frost converting live fuel to dead fuel or drought conditions. Severity is discussed later in this chapter.

26

Mitigating actions identified in the fire management plan should include, but are not limited to, the following items:

- Management direction and considerations
- Fire prevention actions, including closures/restrictions, media messages, signing, and patrolling
- Prepositioning suppression resources
- Cooperator discussion and/or involvement
- Safety considerations: safety message, safety officer
- Augmentation of suppression forces
- Support function: consideration given to expanded dispatch activation, initial attack dispatch staffing, and other support needs (procurement, supply, ground support, and communication)
- Support staff availability outside of fire organization
- Communication of Fire Weather Watch and Red Flag Warning conditions
- Fire danger/behavior assessment
- Briefings for management and fire suppression personnel
- Fire information internal and external
- Multi-agency coordination groups/area command activation

- Prescribed fire direction and considerations
- Increased detection activities

3

4 Seasonal Risk Analysis

5 A Seasonal Risk Analysis requires fire managers to review current and predicted

6 weather and fuels information, compare this information with historic weather

and fuels records, and predict the upcoming fire season's severity and duration

for any given area. It is important to incorporate drought indices into this

9 assessment.

10

Information from a Seasonal Risk Analysis can be used to modify the AOP,

step-up and pre-attack plans. It provides the basis for actions such as

3 prepositioning critical resources, requesting additional funding, or modifying

4 Memoranda of Understanding (MOU) to meet anticipated needs.

15

21

Each unit selects, and compares to normal, the current value and seasonal trend of one or more of the following indicators which are most useful in predicting fire season severity and duration in its area:

- NFDRS (or CFFDRS) index values (ERC, BI)
- 20 Temperature levels
 - Precipitation levels
- 22 Humidity levels
- Palmer Drought or Standardized Precipitation Index
- 1000-hour fuel moisture (timber fuels)
- Vegetation moisture levels
- Live fuel moisture (brush fuels)
- Curing rate (grass fuels)
- ≥8 Episodic wind events (moisture drying days)
- Unusual weather events (early severe frost)
- Fires to date

30 31

The seasonal trend of each selected indicator is graphically compared to normal and all-time worst. This comparison is updated regularly and posted in dispatch and crew areas.

35

If the Seasonal Risk Analysis suggests that an abnormal fire season might be anticipated, a unit should notify the state/regional office and request additional resources commensurate with the escalated risk.

39

40 Seasonal Risk Analyses are prepared, issued, and updated each year by GACC

41 Predictive Service Units. Seasonal Assessment Workshops are conducted to

facilitate these seasonal outlook reports. Local risk analyses should be compiled

Release Date: January 2006

at the state/regional office to determine the predicted fire season severity within

44 the state/region, and then forwarded to the respective national office for use in

09-6

determining national fire preparedness needs. Risk analysis is ongoing. It should be reviewed periodically and revised when significant changes in key indicators occur. All reviews of seasonal risk analysis, even if no changes are made, should be documented.

5

FIRE SEVERITY FUNDING

Dofinit

Fire severity funding is the authorized use of suppression operations funds (normally used exclusively for suppression operations, and distinct from preparedness funds) for extraordinary preparedness activities that are required due to an abnormal increase in fire potential or danger, or to fire seasons that either start earlier or last longer than planned in the fire management plan. The fire danger rating operating plan or annual operating plan should identify thresholds for identifying the need for severity resources.

16 17

Objective

The objective of fire severity funding is to mitigate losses by improving suppression response capability when there is 1) potential for abnormally severe fire behavior, or 2) fire occurrence outside of the normal fire season. When either of these conditions exist, and when suppression resources that were acquired through the approved fire planning process (e.g. NFMAS, IIAA, FPA) are insufficient to meet the extraordinary need, suppression resources may be requested through the severity funding process. Fire severity funding is not intended to raise preparedness funding levels to cover differences that may exist between funds actually appropriated (including rescissions) and those identified in the fire planning process.

28 29

31

32

Typical Uses

30 Severity funds are typically used to:

- Increase prevention activities
- Temporarily increase firefighting staffing
- Pay for standby
- Preposition initial attack suppression forces
- Provide additional aerial reconnaissance
- Provide for standby aircraft availability

37

38 Authorization

Authorization to use severity funding is provided in writing based on a written request with supporting documentation. Specific information required in the request is outlined below. Authorization is on a project by project basis and comes with a severity cost code. Agencies will follow their administrative procedures for issuing severity cost codes. Authorization is provided for a maximum of thirty days per request; however, regardless of the length of the

authorization, use of severity funding must be terminated when abnormal conditions no longer exist. If the fire severity situation extends beyond the thirty day authorization, the unit must submit a request for extension with supporting documentation or prepare a new severity request.

5

State/Regional Level Severity Funding

Fach fiscal year the national office will provide each state/region with \$100,000 and a severity cost code for state/regional short-term severity needs (e.g., wind events, cold dry front passage, lightning events, and unexpected events such as off road rallies that are expected to last less than one week). Expenditure of these funds is authorized by the state/regional directors at the written request of accountable for ensuring that these funds are used only to meet severity funding objectives and that amounts are not exceeded. The national office will notify the state/regional director, state/regional budget officer, and the state/regional FMO when the severity cost code is provided.

- FWS Short-term severity or "step-up" cost codes are established yearly (at the Regional level) as PE01, PE02, etc (numeric value indicates the specific region utilizing short-term severity funding).
- NPS Parks have the authority to approve "Step-up" actions only, as defined in their fire management plan. Regional offices approve severity (long term up to 30 days) for parks up to \$100,000.
 - FS Forest Service severity funding direction is found in FSM 5190.

23 24 25

17

19

National Level Severity Funding

National Agency Fire Directors or their delegates are authorized to allocate fire severity funding under specific conditions stated or referenced in this chapter. Expenditure of these funds is authorized by the appropriate approving official at the written request of the state/regional director. Approved severity funding will be used only for the preparedness activities and timeframes specifically outlined in the authorization, and only for the objectives stated above.

• NPS – National office approves all requests over \$100,000.

33

32

Appropriate Fire Severity Funding Charges

35 36 **L**

39

41

Labor

37 Appropriate labor charges include:

- Regular pay for non-fire personnel
 - Regular pay for seasonal/temporary fire personnel outside their normal fire funded activation period
 - Overtime pay for all fire and non-fire personnel
- Severity funded personnel and resources must be available for immediate
 initial attack regardless of the daily task assignment

Release Date: January 2006

09-8

• Severity funded personnel and resources will not use a severity cost code while assigned to wildfires. The wildfire firecode number will be used.

• Overtime pay for severity funded personnel will be paid by severity funds, unless the personnel are assigned to a wildfire.

5

Vehicles and Equipment

Appropriate vehicle and equipment charges include GSA rental and mileage, agency-owned use rate, and commercial rentals and contracts.

9 • FWS – Repair and maintenance of Fish and Wildlife vehicles and equipment; FWS does not have a Use Rate covering these charges.

11

Aviation

This includes:

- Contract extensions
- The daily minimum for call when needed (CWN) aircraft
- Preposition flight time
- Support expenses necessary for severity funded aircraft (facility rentals, utilities, telephones, etc.)

19

23

16

17

Travel and Per Diem

Severity funded personnel in travel status are fully subsisted by the government in accordance with their agency regulations. Costs covered include:

- Lodging
- of per diem.
- Airfare (including returning to their home base)
- Privately owned vehicle mileage (with prior approval)
- Other miscellaneous travel and per diem expenses associated with the assignment

2

31

Appropriate Fire Severity Funding Charges - Prevention Activities

These include:

- Funding Prevention Teams (Preventions teams will be mobilized as referred in the *National Mobilization Guide*, Chapter 20)
- Implementing local prevention campaigns, to include community risk assessment, mitigation planning, outreach and education
- 36 ◆ Augmenting patrols

Note: Non-fire funded prevention team members should charge base 8 and overtime to the severity cost code for the length of the prevention activities assignment. Fire funded personnel should charge overtime only to the severity cost code for the length of the prevention activities assignment.

41 42 43

Inappropriate Fire Severity Funding Charges

- To cover differences that may exist between funds actually appropriated (including rescissions) and those identified in the fire planning process
- Administrative surcharges, indirect costs, fringe benefits
- Equipment purchases
- Purchase, maintenance, repair, or upgrade of vehicles
- Purchase of radios
- Purchase of telephones
- Purchase of pumps, saws, and similar suppression equipment
- Aircraft availability during contract period
- Cache supplies which are normally available in fire caches

13 Emergency Equipment Rental Agreements

14 Emergency Equipment Rental Agreements (EERAs) are used during emergency

incidents under authorities that allow for direct, non-competitive ordering using

established procedures in the event of immediate threat to life and property.

EERAs will not be used for non-emergency activities, including severity

activities, rehabilitation projects, and hazardous fuels projects.

19

12

Interagency Requests

Agencies working cooperatively in the same geographic area should work

together to generate and submit joint requests, and to utilize severity funded

resources in an interagency manner. However, each agency should request

funds only for its own agency specific needs. The joint request should be routed

s simultaneously through each agency's approval system, and the respective

26 approving official will issue an authorization that specifies allocations by

27 agency.

28

Requesting Fire Severity Funding

Fire severity funding requests should be submitted on the Interagency Severity

Funding Request Form (Appendix GG), which includes a Cost Estimation

Worksheet. The completed and signed request is submitted from the

state/regional director to the appropriate approving official as per the sequence

of action outlined below. Authorizations will be returned in writing.

Modifications and extensions of existing requests should be made through the same process.

37

38 39

40

42 43 44

1 Sequence of Action and Responsible Parties for Severity Funding Requests

Action	Responsible Party
Identify and develop severity funding request.	Unit FMO
Review, modify, and approve (or reject) request. Forward to state/regional office.	Unit Agency Administrator
Review, modify, and approve (or reject) unit request. Add state/regional needs or consolidate with separate state/regional request (up to approved budget limit). Forward to state/regional director for approval within 48 hours.	State/Regional FMO
Review, modify, and approve (or reject) request. Forward to the appropriate National Fire Director/approving official within 48 hours. Notify the fire budget staff.	State/Regional Director
Review, modify, and approve (or reject) the request within 48 hours. Issue written authorization with a severity cost code.	Appropriate National Fire Director/Approving Official
Establish severity cost code in the appropriate finance system within 24 hours.	Applicable National Finance System
Notify unit office(s) and state/regional budget lead upon receipt of authorization.	State/Regional FMO
Execute severity cost code. Ensure that project expenditures are only used for authorized purposes.	Unit Office
Maintain severity files, including requests, authorizations, and summary of expenditures and activities.	Unit/State/Regional/ National Offices

3

4 Labor Cost Coding For Severity Funded Personnel

Fire personnel outside their normal activation period, employees whose regular salary is not fire funded by preparedness and Administratively Determined (AD) employees hired under an approved severity request should charge regular time and approved non-fire overtime to the severity suppression operations subactivity and the requesting office's severity cost code.

10

Fire funded personnel should charge their regular planned salary (base-eight) to preparedness using their home unit's location code. Overtime associated with the severity request should be charged to the severity suppression operations subactivity and the requesting office's severity cost code.

15

Regular hours worked in suppression operations will require the use of the appropriate fire subactivity with the appropriate firecode number. Overtime in

Release Date: January 2006 09-11

fire suppression operations will be charged to the suppression operations subactivity with the appropriate firecode number.

Employees from non-federal agencies should charge their time in accordance with the approved severity request and the appropriate local and statewide agreements. A task order for reimbursement will have to be established and is authorized under the Interagency Agreement for Fire Management.

FS - Labor Cost Coding. Forest Service severity funding direction in FSM 5190 provides agency specific direction.

10 11

13

Documentation

The state/regional and national office will document and file accurate records of severity funding activity. This will include complete severity funding requests, written authorizations, and expenditure records.

16

Severity Funding Audits

State/regional and national offices should ensure appropriate usage of severity 17 funding and expenditures. This may be done as part of their normal agency fire program review cycle. The severity funding audit checklist may be used as a guide for this process. Interagency Preparedness Review checklists can be found at: http://www.nifc.gov/references/prep_review.html

BLM - Severity funding is not a reviewed item of the BLM national Preparedness Review. BLM Preparedness Review Checklists can be found

http://www.fire.blm.gov/Standards/FIRE_AVIATION_PREPAREDNESS _REVIEW_GUIDE.htm

26 27

29

23 24

25

Fire Prevention/Mitigation

Wildland Fire Cause Determination & Fire Trespass

Agency policy requires any wildfire to be investigated to determine cause, origin, and responsibility.

32

For all human-caused fires where the guilty party has been determined, actions must be taken to recover the cost of suppression activities, land rehabilitation, and damages to the resources and improvements.

35 36

Wildland Fire Mitigation and Prevention

37 Fire programs are required to fund and implement unit level Fire Prevention Plans by completing a wildland mitigation/prevention assessment. The purpose of this is to reduce undesirable human caused ignitions, to reduce damages and losses caused by unwanted wildland fires, and to reduce the suppression costs of wildland fires. Wildland fire mitigation/prevention programs based on the Risk Assessment and Mitigation Strategies (RAMS) process can reduce damages and losses during periods of average weather, fuels, and human activity. As weather

and fuel conditions move from average to above average or severe, and/or human activity increases, mitigation and prevention activities must be strengthened to maintain effectiveness.

Prevention includes education (sign posting plans, school programs, radio and news releases, recreation contacts, local business contacts, exhibits), industrial program monitoring (timber, mining, power line maintenance operations), reconnaissance patrols, and other activities to prevent and mitigate wildfire damage and loss.

10

12

13

14

4

- NPS Only units that experience more than an average 26 human caused fires per ten-year period are required to develop a fire prevention plan, based upon a prevention analysis such as RAMS; however, use of this software is not required.
- FS Forest Service direction for wildland prevention and investigation is found in FSM 5110 and 5300.

17 18

Mobilization Guide

The National Interagency Coordination Center (NICC) at the National
Interagency Fire Center (NIFC) is responsible for cost-effective and timely
coordination of national emergency response for wildland fire suppression. This
is accomplished through planning, situation monitoring, and expediting resource
orders between the federal wildland fire agencies and their cooperators.

24

The National Interagency Mobilization Guide contains standard procedures that guide the operations of multi-agency logistical support activity throughout the coordination system. It is designed to accommodate amendments as needed, and will be retained as current material until amended. Local mobilization guides should be used to supplement the National Interagency Mobilization Guide.

31

Geographic areas will provide NICC with two copies of their mobilization guides and will provide amendments as issued. Local mobilization guides should be prepared on an interagency basis. Local units will provide their geographic area coordination center with two copies of their mobilization guide or dispatch plan and amendments as issued.