

Chapter 10 Preparedness

Preparedness

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

Preparedness actions are based on operational plans such as Fire Danger Operating Plans (FDOPs). FDOPs 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, monthly or seasonal wildland fire outlooks, seasonal climate forecasts, and wildland fire risk analyses.

Fire Danger Operating Plan

A Fire Danger Operating Plan is a fire danger applications guide for agency users at the local level. A Fire Danger 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. FDOPs should be prepared by individuals trained at the Intermediate NFDRS (S-491) level, and preferably the Advanced NFDRS level. FDOPs are generally prepared for local interagency areas, such as a zone-wide operating plan. Interagency FDOPs are an integral component of unit fire management plan(s). Fire Danger Operating Plans may be packaged as either stand-alone documents or as part of a larger planning effort; such as a fire management plan.

Fire Danger Operating Plans include, but are not limited to, the following 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

- 1 determine fire danger ratings is identified. Station maintenance schedules
2 are defined as appropriate.
- 3 ➤ NFDRS offers several choices of fuel model and output to the user.
4 Distinct selections of fuel model and index/component are appropriate
5 for different management decisions (such as internal readiness or
6 industrial and public restrictions). The choice of NFDRS fuel model
7 and index or component used to determine fire danger ratings to
8 support particular decisions is explained in this section.
- 9 ➤ NFDRS requires periodic management in order to produce appropriate
10 results that are applied in a timely manner. Some daily observation
11 variables (such as state of the weather, fuels, red flags) are entered
12 manually. This procedure (often called “taking the weather”) also
13 initiates the calculation of daily and forecasted outputs in the Weather
14 Information Management System (WIMS) and ensures data storage in
15 the National Interagency Fire Management Integrated Database
16 (NIFMID). These efforts are coordinated with the local National
17 Weather Service fire weather meteorologists and Geographic Area
18 Coordination Center (GACC) predictive services meteorologists to
19 provide timely forecasted NFDRS outputs. Observed (afternoon) and
20 forecasted (tomorrow) NFDRS outputs are communicated daily. Live
21 fuel moisture model inputs (such as herbaceous vegetation stage,
22 season code, greenness factor) are adjusted seasonally in WIMS
23 (<http://fam.nwcg.gov/fam-web/>) at appropriate times. Decision points
24 (such as percentiles discussed below) are determined in FireFamily
25 Plus and reviewed and adjusted annually or more often as appropriate
26 in WIMS and/or other fire danger platforms.
- 27 ● **Fire Danger Rating Inventory**
28 Identifies basic components of the operating plan such as dispatch response
29 areas, protection units, administrative units, fire history, land management
30 planning direction, standards, and guidelines, etc. Fire danger rating
31 inventory incorporates NFDRS fuel models, slope classes (topography), and
32 weather/climatology into fire danger rating areas; validates the existing
33 weather station network and identifies any additional stations to support fire
34 danger rating needs.
- 35 ● **Climatic Breakpoints and Fire Business Thresholds**
36 Climatological breakpoints and fire business thresholds are established to
37 provide NFDRS-based decision points for all appropriate management
38 responses in a fire danger rating area. Climatological breakpoints are points
39 on the cumulative distribution of one fire weather/danger index computed
40 from climatology without regard for associated fire occurrence/business.
41 For example, the value of the 90th percentile ERC is the climatological
42 breakpoint at which only 10 percent of the ERC values are greater in value.
43 The percentiles for climatological breakpoints predetermined by agency
44 directive are shown below.
- 45

- 1 ➤ BLM - 80th and 95th percentiles
- 2 ➤ FWS/NPS/FS - 90th and 97th percentiles

3
4 It is equally important to identify the period or range of data analysis used to
5 determine the agency percentiles. The percentile values for 12 months of data
6 will be different from the percentile values for the fire season. Year round data
7 should be used for percentiles for severity type decisions, and percentiles based
8 on fire season data for staffing levels and adjective fire danger.

9
10 Fire business thresholds are values of one or more fire weather/fire danger
11 indexes that have been statistically related to occurrence of fires (fire business).
12 Generally the threshold is a value or range of values where historical fire
13 activity has significantly increased or decreased. Assuming historical climate
14 and occurrence patterns can be applied today, fire business thresholds are
15 expected to more closely predict significant fire occurrence than climatological
16 breakpoints.

17
18 Climatological breakpoints or fire business thresholds are used to compute
19 staffing levels and adjective fire danger ratings.

20

21 **Staffing Level**

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

- 26 • NFDRS (Burning Index, Energy Release Component, Spread Component,
27 or Ignition Component)
- 28 • Keetch-Byram Drought Index

29

30 **Additional Considerations:**

- 31 • Palmer Drought Index or other drought index
- 32 • Live Fuel Moisture (calculated or sampled)
- 33 • Canadian Forest Fire Danger Rating System
- 34 • Soil Moisture

35

36 **Adjective Fire Danger Rating**

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

42

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

1 adjective ratings. Training for the FIREFAMILY PLUS program is available at
2 local, regional, and national NFDRS courses.

3

4 **Fire Danger Pocket Card for Firefighter Safety**

5

6 The Fire Danger Pocket Card is used to communicate information on fire danger
7 to firefighters. The prime objective of the fire danger rating is to provide a
8 measure of the seriousness of local burning conditions. The Pocket Card
9 provides a visual reference of those conditions and how they compare to
10 previous fire seasons. Pocket Cards are developed and implemented according
11 to NWCG guidelines posted at:

12 <http://fam.nwcg.gov/fam-web/pocketcards/default.htm>

13

14 **Preparedness Plan**

15

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

23

24 **Preparedness Level/Step-up Plans**

25 Preparedness Level/Step-up Plans are designed to direct incremental
26 preparedness actions in response to increasing fire danger. Those actions are
27 delineated by “staffing levels.” Each Step-Up Plan should address the five
28 preparedness levels (1, 2, 3, 4, and 5) and the corresponding planned actions that
29 are intended to mitigate those fire danger conditions. Several assessment tools
30 are available to measure fire danger.

31

32 Outputs from the fire danger rating operating plan process, such as staffing
33 levels, are used to support the decisions found in staffing plans, step-up staffing
34 plans, preparedness levels, dispatch response plans, dispatch response levels,
35 etc. Increasing fire danger results in increasing staffing levels, suggesting a
36 corresponding increase in preparedness actions intended to mitigate those fire
37 danger conditions.

38

39 The Staffing Plan describes escalating responses that are pre-approved in the fire
40 management plan. Mitigating actions are designed to enhance the unit’s fire
41 management capability during short periods (one burning period, Fourth of July
42 or other pre-identified events) where normal staffing cannot meet initial attack,
43 prevention, or detection needs. The difference between preparedness level/step-
44 up and severity is that preparedness level/step-up actions are established in the
45 unit fire management plan, and implemented by the unit when those pre-

1 identified conditions are experienced. Severity is a longer duration condition
2 that cannot be adequately dealt with under normal staffing, such as a killing frost
3 converting live fuel to dead fuel or drought conditions. Severity is discussed
4 later in this chapter.

5

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

- 8 • Management direction and considerations
- 9 • Fire prevention actions, including closures/restrictions, media messages,
10 signing, and patrolling
- 11 • Prepositioning suppression resources
- 12 • Cooperator discussion and/or involvement
- 13 • Safety considerations: safety message, safety officer
- 14 • Augmentation of suppression forces
- 15 • Support function: consideration given to expanded dispatch activation,
16 initial attack dispatch staffing, and other support needs (procurement,
17 supply, ground support, and communication)
- 18 • Support staff availability outside of fire organization
- 19 • Communication of Fire Weather Watch and Red Flag Warning conditions
- 20 • Fire danger/behavior assessment
- 21 • Briefings for management and fire suppression personnel
- 22 • Fire information - internal and external
- 23 • Multi-agency coordination groups/area command activation
- 24 • Prescribed fire direction and considerations
- 25 • Increased detection activities

26

27 **Seasonal Risk Analysis**

28 A Seasonal Risk Analysis (SRA) requires fire managers to review current and
29 predicted weather and fuels information, compare this information with historic
30 weather and fuels records, and predict the upcoming fire season's severity and
31 duration for any given area. It is important to incorporate drought indices into
32 this assessment.

33

34 Information from a SRA can be used to modify the Annual Operating Plan
35 (AOP), step-up and pre-attack plans. It provides the basis for actions such as
36 prepositioning critical resources, requesting additional funding, or modifying
37 Memoranda of Understanding (MOU) to meet anticipated needs.

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

- 41 • NFDRS (or CFFDRS) index values (ERC, BI)
- 42 • Temperature levels
- 43 • Precipitation levels
- 44 • Humidity levels

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- 1 • Palmer Drought or Standardized Precipitation Index
 - 2 • 1000-hour fuel moisture (timber fuels)
 - 3 • Vegetation moisture levels
 - 4 • Live fuel moisture (brush fuels)
 - 5 • Curing rate (grass fuels)
 - 6 • Episodic wind events (moisture drying days)
 - 7 • Unusual weather events (early severe frost)
 - 8 • Fires to date
 - 9
- 10 The seasonal trend of each selected indicator is graphically compared to normal
11 and all-time worst. This comparison is updated regularly and posted in dispatch
12 and crew areas.

13

14 If the SRA suggests an abnormal fire season might be anticipated, a unit should
15 notify the state/regional office and request additional resources commensurate
16 with the escalated risk. SRA for each geographic area are prepared, issued, and
17 updated each year by GACC Predictive Service staffs. These analyses consider
18 detailed information for each of the Predictive Services Areas (PSA) within the
19 geographic area.

20

21 Seasonal Assessment Workshops are conducted to facilitate these seasonal
22 outlook reports. Local risk analyses should be compiled at the state/regional
23 office to determine the predicted fire season severity within the state/region, and
24 then forwarded to the respective national office for use in determining national
25 fire preparedness needs. Risk analysis is ongoing. It should be reviewed
26 periodically and revised when significant changes in key indicators occur. All
27 reviews of seasonal risk analysis, even if no changes are made, should be
28 documented.

29

30 **Fire Severity Funding**

31

32 Fire severity funding is the authorized use of suppression operations funds
33 (normally used exclusively for suppression operations and distinct from
34 preparedness funds) for extraordinary preparedness activities that are required
35 due to:

- 36 • Preparedness plans (fire management plan, fire danger operating plan,
37 annual operating plan, etc.) indicate the need for additional
38 preparedness/suppression resources. The plan(s) should identify thresholds
39 for severity needs.
- 40 • Anticipated fire activity will exceed the capabilities of local resources.
- 41 • Fire seasons that either start earlier or last longer than planned in the fire
42 management plan.
- 43 • An abnormal increase in fire potential or danger not planned for in existing
44 preparedness plans.

1 The objective of fire severity funding is to mitigate losses by improving
2 suppression response capability.

3

4 When suppression resources acquired through the approved fire planning
5 process (e.g. NFMAS, IIAA, FPA) are insufficient to meet the extraordinary
6 need, suppression resources may be requested through the severity funding
7 process. Fire severity funding is not intended to raise preparedness funding
8 levels to cover differences that may exist between funds actually appropriated
9 and those identified in the fire planning process.

10

11 **Typical Uses**

12 Severity funds are typically used to:

- 13 • Increase prevention activities
- 14 • Temporarily increase firefighting staffing
- 15 • Pay for standby
- 16 • Preposition initial attack suppression forces
- 17 • Provide additional aerial reconnaissance
- 18 • Provide for standby aircraft availability

19

20 **Authorization**

21 Authorization to use severity funding is provided in writing based on a written
22 request with supporting documentation. Authorization is on a line item basis
23 and comes with a severity cost code. Agencies will follow their administrative
24 procedures for issuing severity cost codes. Authorization is provided for a
25 maximum of 30 days per request; however, regardless of the length of the
26 authorization, use of severity funding must be terminated when abnormal
27 conditions no longer exist. If the fire severity situation extends beyond the 30
28 day authorization, the State/Region must prepare a new severity request.

29

30 **State/Regional Level Severity Funding**

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

- 41 • *FWS - Short-term severity or "step-up" cost codes are established yearly*
42 *(at the Regional level) as PER1, PER2, etc (numeric value indicates the*
43 *specific region utilizing short-term severity funding).*

- 1 • *NPS - Parks have the authority to approve “Step-up” actions only, as*
2 *defined in their fire management plan. Regional offices approve severity*
3 *(long term - up to 30 days) for parks up to \$100,000 per severity event.*
4 • *FS - Severity funding direction is found in FSM 5190.*

5
6 **National Level Severity Funding**

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

- 13 • *NPS- National office approves all requests over \$100,000.*
14 • *FWS- Additional information may be found on the FWS Sharepoint site.*

15
16 **Appropriate Severity Funding Charges- Labor**

17 Appropriate labor charges include:

- 18 • Regular pay for non-fire personnel
19 • Regular pay for seasonal/temporary fire personnel outside their normal fire
20 funded activation period
21 • Overtime pay for all fire and non-fire personnel
22 • Severity funded personnel and resources must be available for immediate
23 initial attack regardless of the daily task assignment
24 • Severity funded personnel and resources will not use a severity cost code
25 while assigned to wildfires. The wildfire firecode number will be used.

26
27 **Vehicles and Equipment**

- 28 • GSA lease rate and mileage
29 • Hourly rate or mileage for Agency owned vehicles
30 • Commercial rentals and contracts
31 • *FWS – Severity-related repair and maintenance of Fish and Wildlife*
32 *vehicles and equipment may be funded by severity because FWS does not*
33 *have a use rate covering these charges. These charges must be approved by*
34 *the National Office.*

35
36 **Aviation**

37 This includes:

- 38 • Contract extensions
39 • The daily minimum for call when needed (CWN) aircraft
40 • Preposition flight time
41 • Support expenses necessary for severity funded aircraft (facility rentals,
42 utilities, telephones, etc.)
43
44

1 Travel and Per Diem

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

- 4 • Lodging
- 5 • Government provided meals (in lieu of per diem)
- 6 • Airfare (including returning to their home base)
- 7 • Privately owned vehicle mileage (with prior approval)
- 8 • Other miscellaneous travel and per diem expenses associated with the
9 assignment

10

11 Prevention Activities

12 These include:

- 13 • Funding Prevention Teams (Preventions teams will be mobilized as
14 referenced in the *National Mobilization Guide*, Chapter 20)
- 15 • Implementing local prevention campaigns, to include community risk
16 assessment, mitigation planning, outreach, and education
- 17 • Augmenting patrols
- 18 • Note: Non-fire funded prevention team members should charge base 8 and
19 overtime to the severity cost code for the length of the prevention activities
20 assignment. Fire funded personnel should charge overtime only to the
21 severity cost code for the length of the prevention activities assignment.

22

23 Inappropriate Fire Severity Funding Charges

- 24 • To cover differences that may exist between funds actually appropriated
25 (including rescissions) and those identified in the fire planning process
- 26 • Administrative surcharges, indirect costs, fringe benefits
- 27 • Equipment purchases
- 28 • Purchase, maintenance, repair, or upgrade of vehicles
- 29 • Purchase of radios
- 30 • Purchase of telephones
- 31 • Purchase of pumps, saws, and similar suppression equipment
- 32 • Aircraft availability during contract period
- 33 • Cache supplies which are normally available in fire caches
- 34 • Fixed ownership rate vehicle costs
- 35 • Equipment that has been solicited allows for use on nationwide fire
36 suppression, all-hazard incidents and severity. Pre-season EERAs / Incident
37 Only EERAs may not be used for severity use or hazardous fuels projects.
38 Long term rehabilitation projects require a separate solicitation for
39 equipment.

40

41 Interagency Requests

42 Agencies working cooperatively in the same geographic area must work
43 together to generate and submit joint requests, to minimize duplication of
44 required resources, reduce interagency costs and to utilize severity funded

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1 resources in an interagency manner. However, each agency should request
 2 funds only for its own agency specific needs. The joint request should be routed
 3 simultaneously through each agency's approval system, and the respective
 4 approving official will issue an authorization that specifies allocations by
 5 agency.

6

7 **Requesting Fire Severity Funding**

8 Each agency has established severity funding request protocols. The completed
 9 and signed request is submitted from the state/regional director to the
 10 appropriate approving official as per the sequence of action outlined below.

11 Authorizations will be returned in writing.

12 Severity funding request information for all agencies can be found at

13 www.nifc.gov/policies/severity.htm

14

15 **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 and consolidate. 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

16

17 **Labor Cost Coding For Severity Funded Personnel**

18 Fire personnel outside their normal activation period, employees whose regular

19 salary is not fire funded, and Administratively Determined (AD) employees

1 hired under an approved severity request should charge regular time and
2 approved non-fire overtime to the severity suppression operations subactivity
3 and the requesting office's severity cost code.

4
5 Fire funded personnel should charge their regular planned salary (base-eight) to
6 their budgeted subactivity using their home unit's location code. Overtime
7 associated with the severity request should be charged to the severity
8 suppression operations subactivity and the requesting office's severity cost code.

9
10 Regular hours worked in suppression operations will require the use of the
11 appropriate fire subactivity with the appropriate firecode number. Overtime in
12 fire suppression operations will be charged to the suppression operations
13 subactivity with the appropriate firecode number.

14
15 Employees from non-federal agencies should charge their time in accordance
16 with the approved severity request and the appropriate local and statewide
17 agreements. A task order for reimbursement will have to be established and is
18 authorized under the Interagency Agreement for Fire Management.

19 20 **Documentation**

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

24 25 **Severity Funding Reviews**

26 State/regional and national offices should ensure appropriate usage of severity
27 funding and expenditures. This may be done as part of their normal agency fire
28 program review cycle.

29 30 **Fire Prevention/Mitigation**

31 32 **Wildland Fire Cause Determination & Fire Trespass**

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

35
36 For all human-caused fires where responsibility and negligence can be
37 determined, actions must be taken to recover the cost of suppression activities,
38 land rehabilitation, and damages to the resources and improvements.

39 40 **Wildland Fire Mitigation and Prevention**

41 Fire programs are required to fund and implement unit level Fire Prevention
42 Plans by completing a wildland mitigation/prevention assessment. The purpose
43 of this is to reduce undesirable human caused ignitions, to reduce damages and
44 losses caused by unwanted wildland fires, and to reduce the suppression costs of
45 wildland fires. As weather and fuel conditions move from average to above

1 average or severe, and/or human activity increases, mitigation and prevention
2 activities must be strengthened to maintain effectiveness.

3

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

- 9 • *NPS- Only units that experience more than an average of 26 human caused*
10 *fires per ten-year period are required to develop a fire prevention plan.*
- 11 • *FS –Refer to FSM 5110 and 5300.*

12

13 **Professional Liability Insurance**

14

15 Public Law 110-161 provides for reimbursement for up to one half of the cost
16 incurred for professional liability insurance (including any administrative
17 processing cost charged by the insurance company) for temporary fire line
18 managers, management officials, and law enforcement officers.

19

20 To qualify for reimbursement, “temporary fire line managers” must meet one of
21 the following three criteria:

- 22 • Provide temporary supervision or management of personnel engaged in
23 wildland fire activities;
 - 24 • Provide analysis or information that affects a supervisor’s or manager’s
25 decision about a wildland fire;
 - 26 • Direct the deployment of equipment for a wildland fire, such as a base camp
27 manager, an equipment manager, a helicopter coordinator, or an initial
28 attack dispatcher.
- 29
- 30 • *DOI – see Personnel Bulletin No. 08-07, March 20, 2008*
 - 31 • *FS – refer to <http://fsweb.asc.fs.fed.us/HRM/benefits/PLI.php>*