NATIONAL WEATHER SERVICE INSTRUCTION 10-401

December 9, 2008

Operations and Services
Fire Weather Services, NWSPD 10-4

FIRE WEATHER SERVICES PRODUCT SPECIFICATION

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/

OPR: W/OS22 (H. Hockenberry) **Certified by:** W/OS22 (E. Jacks)
Type of Issuance: Routine.

SUMMARY OF REVISIONS: This directive supersedes NWSI 10-401, "Fire Weather Services Product Specification," dated March 15, 2006. Changes are: (1) Table of Contents – Re-ordered Sections to improve priority of product importance, (2) Section 2– Created a new Section 2 describing core grids and providing a link to the current operational status of core grids, (3) Section 3 – Removed all instances of "P-VTEC" and "CONUS" to reflect the fact that Alaska and Pacific Regions now use VTEC, (4) Section 3.2.2– Added section with guidance on warnings/watches spanning multiple days, (5) Section 3.2.2.1 – Increased Fire Weather Watch potential lead time to 96 hours, (6) Section 3.2.4 – Adjusted expirations time guidance for RFWs, (7) Section 3.2.4 – Clarified lead time and issuance guidance for RFWs involving specific critical weather durations, (8) Section 3.3.4.1 – Added wording to assure optional element consistency with AOP, (9) Section 4.2.1 – Clarified spot forecast request instructions, (10) Section 4.2.2 – Added wording and a paragraph identifying the Weather Activity Planner, (11) Exhibit 4-1 – Added optional tabular forecast section format to spot forecast example, (12) Section 5.2.1 – Clarified FWF creation software, (13) Section 5.3.4 – Updated headline, wind and extended forecast guidance, (14) Exhibit 5-1 – Specified wind forecast as a 20-foot wind, (15) Section 6.1 – Clarified NFDRS Mission Connection statement, (16) Section 6.2.1 – Clarified NFDRS forecast creation software, (17) Section 6.2.3 – Added a statement identifying other sources of NFDRS observation data, (18) Section 6.3.4 – Added wording to indicate fuel moisture calculations for NFDRS are only required for manual NFDRS reporting stations, (19) Section 6.5 – Added new section 6.5 providing guidance on suspending an NFDRS forecast, (20) Section 10 – Added product specifications for the 3-8 Day fire weather outlook from SPC, (21) Appendices – Removed product example appendices in favor of creating web links of examples.

____signed_____ ____11/25/08_____
David B. Caldwell Date
Director, Office of Climate,
Water, and Weather Services

Fire Weather Services Product Specification

Table of Contents: Page

1. Introduction. Weather Forecast Office (WFO) forecast staff will ensure the provision/availability of a core suite of fire weather products consisting of the following for their fire weather service area:

a. Required core grids
b. Red Flag Warnings/Fire Weather Watches (RFW)
c. Spot Forecasts (FWS)
d. Fire Weather Planning Forecasts (FWF)
e. National Fire Danger Rating System (NFDRS) Forecasts (FWM) *

** In Alaska Region, WFOs do not produce NFDRS FWM products*

In addition to the core suite, Regional Headquarters and WFOs may provide localized services or products to support user requirements assuming these services or products remain within the bounds of the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) mission and do not conflict with the national fire weather services program or product suite. These local applications will be coordinated with Regional Headquarters and included in the WFO or consolidated WFO Fire Weather Annual Operating Plan (AOP), NWS Instruction 10-404). Implementation of new products and services must comply with NWS Instruction 10-102, New or Enhanced Products and Services.

WFOs with no public wildlands (federal, state, or local), fire season, or user requirements may be exempt from producing all or a portion of the core national fire weather product suite with approval from both the associated Regional Headquarters and the Office of Climate, Water, and Weather Services (OCWWS).

Meteorologists-in-Charge (MICs) and WFO fire weather program leaders will annually reassess the criteria for issuance, frequency of issuance, format, content, dissemination, etc. for each fire weather product. This information should be clearly defined in the WFO or consolidated AOP.

Examples of the required text products are shown as web links at the bottom of this Instruction.

Note: World Meteorological Organization (WMO) headers for the products in this instruction are shown for the continental United States. Alaska products use AK in place of US, e.g., instead of FNUS5i, Alaska FWFs will use FNAKii. Similarly Hawaiian products use HW in place of US, e.g., FNHW5i, while Guam and Commonwealth of the Northern Marianas use MY in place of US, e.g., FNMY50.

2. Required Core Grids

National Digital Forecast Database (NDFD) grids are used to produce a wide variety of products and services, some of which are specific to fire weather support. Operational status of NWS grid elements is available at the following website:

http://www.weather.gov/ndfd/resources/NDFD_element_status.pdf

3. Fire Weather Watch/Red Flag Warning (Product Category RFW, WMO Header - WWUS8i).

3.1 Mission Connection Forecasters will issue Fire Weather Watches/Red Flag Warnings (RFW) when the combination of dry fuels and weather conditions support extreme fire danger and/or fire behavior. These conditions alert land management agencies to the potential for widespread new ignitions or control problems with existing fires, both of which could pose a threat to life and property.

3.2 Issuance Guidelines.

3.2.1 Creation Software. WFOs use the AWIPS GHG software to issue/update RFW products.

The dissemination of the RFW should reflect local user capabilities to provide the most efficient means of getting watches/warnings to the appropriate fire suppression personnel. Fire Weather Watch/Red Flag Warning dissemination methods will be detailed in the AOP.

3.2.2 Issuance Criteria. Red Flag Event criteria are determined by coordination between WFO personnel and land management users in the WFO fire weather service area. Each WFO should have their specific criteria well-marked in the AOP and Station Duty Manual (SDM).

Red Flag Event criteria consists of both fuel and weather parameters. WFO fire weather program leaders should monitor NFDRS or other suitable fire danger indices, coordinate with land management personnel to keep abreast of the fuel conditions, and make sure this information is available to WFO forecasters. Suggested meteorological criteria for a Red Flag Event include:

a. Lightning after an extended dry period
b. Significant dry frontal passage
c. Strong winds
d. Very low relative humidity
e. Dry thunderstorms

Forecasters should coordinate with local fire and land managers and Predictive Services prior to the issuance of a Fire Weather Watch or Red Flag Warning.

In some synoptic situations, weather conditions meeting warning criteria will exist for portions of a 2-day period, with only a few hours periodic remission due to diurnal effects or local climatology. In these situations, it is less confusing for fire agency users when a Red Flag Warning or Fire Weather Watch is issued for the entire period described above rather than expiring and issuing new warnings/watches each time weather conditions go into and out of warning criteria. If a Red Flag Warning or Fire Weather Watch is issued in this fashion, the discussion portion of the warning must contain explicit information regarding the expected short time period(s) when critical conditions will subside.

3.2.2.1 Fire Weather Watch. Forecasters should issue a Fire Weather Watch when there is a high potential for the development of a Red Flag Event. A Watch will only be issued (or continued) in the first 12-hour time period for dry thunderstorm events. For other events, the watch will be issued 12 to 96 hours in advance of the expected onset of criteria. The watch may be issued for all, or selected portions within a fire weather zone or region.

A Fire Weather Watch should not be issued, or continued, to indicate low confidence or borderline conditions. In these situations, the forecaster should describe the expected conditions and reasons for uncertainty in the discussion portion of the routine Fire Weather Planning Forecast, using a non-Red Flag headline if needed (e.g., ...Very Low Humidity Expected Tuesday Afternoon...).

3.2.2.2 Red Flag Warning. A Red Flag Warning is used to warn of an impending, or occurring Red Flag Event. Its issuance denotes a high degree of confidence that weather and fuel conditions consistent with local Red Flag Event criteria will occur in 24 hours or less. Forecasters can issue the warning for all or selected portions within a fire weather zone.

3.2.3 Issuance Time. Fire Weather Watches/Red Flag Warnings are issued on an event-driven basis when agreed upon criteria are met.

3.2.4 Valid Time. A Fire Weather Watch or Red Flag Warning is valid from the time critical fire weather conditions are expected to commence (event start time) until the time when the same conditions are expected to end (event expiration time). When the event start time precedes the issuance of the Red Flag Warning, the beginning of the Valid Time period is simply the issuance time. For Red Flag Warnings involving a duration factor (i.e. wind exceeding a threshold for 3 hours or more), the product valid time will begin at the expected onset (i.e. first observation) of critical conditions. Lead time verification will be defined using the ***first*** observation where the Red Flag Warning criteria is satisfied. See 10-1601 for verification details.

For Red Flag Warnings, the event expiration time should generally not exceed 36 hours from issuance. For Fire Weather Watches, the event expiration time should be in the 24 to 108 hour time frame.

Valid time information is included in headlines. WFOs will also include valid time information in the VTEC coding.

3.2.5 Product Expiration Time. The UGC product expiration time should be approximately 12 to 36 hours. Updates or continuation statements should coincide with the next issuance of the Fire Weather Planning Forecast. This expiration time can vary, but any significant variance should be noted and agreed upon in the AOP.

3.3 Technical Description.

3.3.1 UGC Type and Valid Time Event Coding (VTEC). RFWs will use fire weather zone numbers and the zone (Z) form of the UCG coding. Where defined as such by the WFO, fire weather zone numbers may be the same as public zone numbers. WFOs will include a VTEC

line following the UGC coding line using policy in NWSI 10-1703 (Valid Time Event Code). The VTEC line will contain information on the type of product (Red Flag Warning or Fire Weather Watch), the action (new issuance, expansion of area, continuance, extension in time, cancellation), issuing office, and event start and expiration times.

3.3.2 MND Broadcast Instruction Line. None.

3.3.3 MND Product Type Line. The RFW MND is "FIRE WEATHER WATCH" or "RED FLAG WARNING". In a multi-segmented product where both Red Flag Warning and Fire Weather Watch information are both included, the MND will display "RED FLAG WARNING".

3.3.4 Content. The Fire Weather Watch and Red Flag Warning format will include segmented forecast information, and may contain an overview section. The format is shown in exhibit 5-1.

3.3.4.1 Overview Section. This section is optional, but inclusion must be consistent with Annual Operating Plan agreement. If included, it should contain at least one of the following items:

a. Overview Headline(s) - general headline statement(s) that summarizes the Fire Weather threat, time of development, reason for issuance, and area affected.

   Example:

   …RED FLAG WARNING FROM 2PM TO 7PM MST FOR STRONG WINDS AND LOW HUMIDITY FOR SOUTHEAST OREGON…

b. General Discussion - a brief, non-technical discussion of the expected fire weather event.

3.3.4.2 Segmented Forecast Information. Each segment of the Fire Weather Watch/Red Flag Warning will include:

a. UCG coding and geographic description of zones and/or zone numbers. WFOs will also include valid time event coding (VTEC).

b. A headline describing the state of the FIRE WEATHER WATCH or RED FLAG WARNING (issued, continues, canceled), the effective time of the event, the critical weather element(s) causing the event, and a description of the affected area.

c. Discussion section which describes the adverse weather conditions. In the initial issuance of the watch or warning, include the following phrase to begin the discussion:

   THE NATIONAL WEATHER SERVICE IN [WFO or location] HAS ISSUED A [RED FLAG WARNING or FIRE WEATHER WATCH] FOR

This attribution line is optional for subsequent issuances.

3.3.4.3 Order of Segments. The order of segments is:

(1) Cancellation
(2) Warnings
(3) Watches

3.3.4.4 Order of Headlines. If multiple headlines are required in a single segment, the order of headlines will follow the order of segments.

Example: "Red Flag Warning canceled; Fire Weather Watch continues for same geographic area."

…RED FLAG WARNING IS CANCELED FOR DRY LIGHTNING ACROSS THE BURNS BLM…
…FIRE WEATHER WATCH REMAINS IN EFFECT FOR THURSDAY FOR DRY LIGHTNING ACROSS SOUTHEAST OREGON…

3.3.5 Format. Exhibit (3-1) - Format of a FIRE WEATHER WATCH MESSAGE (RFW):

```
WWUS8i KNNN DDHHMM
RFWNNN

FIRE WEATHER WATCH
NATIONAL WEATHER SERVICE CITY STATE
TIME-DATE (example: 830 MDT WED SEP 1 2004)

...OVERVIEW HEADLINE/S (optional)...

.(optional overview discussion, focus on adverse weather conditions)

SSZXXX-XXX>XXX-DDHHMM- (UGC coding)
/<VTEC CODING>
GEOGRAPHICAL DESCRIPTORS (including land management governing units, fire
weather zone numbers, and/or county names)
TIME-DATE (example: 0830 MDT WED SEP 1, 2004)

...SEGMENT HEADLINE (of what, when, why, and where)...

Discussion/details...

$$

[next segment if necessary]

$$
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An example of a single segmented Red Flag Warning can be found here:
http://weather.gov/directives/010/401f/RFW_single_segment.pdf

An example of a multiple segmented Red Flag Warning can be found here:
http://weather.gov/directives/010/401f/RFW_multiple_segment.pdf

An example of a multiple segmented Red Flag Warning with an overview can be found here: http://weather.gov/directives/010/401f/RFW_multiple_segment_overview.pdf

Note: Red Flag Warning would follow the same format above except MND would state "RED FLAG WARNING" instead of "FIRE WEATHER WATCH".

3.4 Updates and Corrections. A Fire Weather Watch will remain in effect until the watch: 1) is canceled, 2) is upgraded to a Red Flag Warning, or 3) expires.

A Red Flag Warning will remain in effect until the warning: 1) is canceled, or 2) expires.

Use the same product identifier (RFW) for issuing, updating, and canceling Fire Weather Watches and Red Flag Warnings. Forecasters will also update the FWF product when a RFW product is issued, updated, or cancelled.

The RFW will be corrected when a typographical/format error is detected.

3.5 Other Dissemination of Red Flag Information. Forecasters will place headlines for Fire Weather Watches/Red Flag Warnings at the beginning of the routine Fire Weather Planning Forecast (FWF) and in the appropriate zone sections (see 5.3.4.a for details).

Forecasters should include the RFW highlights in the appropriate list of highlights in the Area Forecast Discussion. Dissemination of RFW information on NOAA Weather Radio is left to local or regional policy.

4. Site-specific (Spot) Forecasts (Product Category FWS, WMO Header - FNUS7i).

4.1 Mission Connection. Site-specific (spot) forecasts are issued by WFOs in support of wildfire management, and natural resource management. These forecasts aid the land management and fire control agencies in protecting life and property during wildland fires, hazardous fuels reduction, and rehabilitation and restoration of natural resources. Spot forecasts are also issued for hazardous materials incidents and other threats to public safety.

4.2 Issuance Guidelines.

4.2.1 Creation Software. Spot forecasts are generated in a two step process. The user requests a spot through the "NWS Spot" web interface. When the request is received at the WFO, the AWIPS GFE spot forecast formatter is used to produce a draft forecast from the local digital database. The forecaster then edits the draft forecast as needed and sends it back to the user via AWIPS and the Internet. When internet access is hindered or not possible, spot forecasts may be requested and disseminated manually using WS Form D-1, Spot Request (available in appendix B of this instruction). A copy of any spot forecasts issued outside of AWIPS must be retained in archive by the originating WFO for 5 years (NWS Instruction 10-2003, Records Retention).

4.2.2 Issuance Criteria. Site specific (spot) forecasts are non-routine, near term (typically not

more than 48 hours) products issued at the request of the user. WFOs will provide spot forecast service upon request of any federal, state, tribal, or local official who represents the spot forecast is required to support a wildfire.

For non-wildfire purposes, resources permitting, WFOs will provide spot forecast service under the following circumstances and conditions:

a. Upon request of any federal official who represents that the spot forecast is required under the terms of the Interagency Agreement for Meteorological Services (NWS Instruction 10-406).
b. Upon request of any state, tribal, or local official who represents that the spot forecast is required to carry out their wildland fire management responsibilities in coordination with any federal land management agency participating in the Interagency Agreement for Meteorological Services (NWS Instruction 10-406).
c. Upon request of any public safety official who represents the spot forecast is essential to public safety, e.g. due to the proximity of population centers or critical infrastructure. A "public safety official" is an employee or contract agent of a government agency at any level (federal, state, local, tribal, etc.) charged with protecting the public from hazards including wildland fires of whatever origin and/or other hazards influenced by weather conditions such as hazardous material releases.

WFOs will not provide spot forecasts to private citizens or commercial entities not acting as an agent of a government agency.

MICs and fire weather program leaders should coordinate with local users and establish local policies/procedures for the site specific spot services in their CWA or fire weather services area. These policies/procedures should be clearly defined in the SDM, and for fire weather applications, in the local AOP.

At or before the time of a spot request, the requesting agency should provide incident information: (lat,lon), topography and elevation (if needed), and a contact name(s) and telephone number(s) of the requestor (see section 4.2.2.1). For spot requests supporting wildfires or prescribed burns, the requestor must also provide fuel type(s), size, and ignition time. Also, representative observation(s) at, or near, the site of the planned controlled burn, or wildfire, should be available to the responsible WFO prior to the issuance of the spot forecast(s). In the case of a wildfire, or a prolonged controlled burn, land management personnel should provide updated observations and information to NWS during the course of the event.

Wildfires or large or complex prescribed burns may pose a higher threat to life and/or property than a severe thunderstorm, flash flood, or tornado. In these instances, the issuance of spot forecasts should be prioritized in a manner similar to that of short-fuse warnings.

User-defined forecast information for time periods beyond 48 hours should be supplied via the Weather Activity Planner. The Weather Activity Planner can be accessed on many NWS WFO websites. However, Weather Activity Planner data does not replace the need for a spot forecast.

4.2.2.1 Requester Identification. The requester for each spot forecast must provide the following information before a spot forecast can be issued:

a. Name;
b. Government agency;
c. Phone number, and
d. The reason for the spot forecast, which must satisfy reasons specified in section 4.2.2. above.

The NWS will accept the representation of the requester and will forward to the requester any questions regarding their representation. The spot forecast request form will contain the following warning regarding potential penalties for misrepresentation:

"NOTICE: Information provided on this form may be used by the National Weather Service for official purposes in any way, including public release and publication in NWS products. False statements on this form may be subject to prosecution under the False Statement Accountability Act of 1996 (18 U.S.C. § 1001, as amended) or other statutes."

All spot forecasts will be available for public use, including identification of the requester.

4.2.3 Issuance Time. Spot forecasts are non-routine and may be issued at any time upon user request.

4.2.4 Valid Time. The valid time will be determined at the time of the request. Most spots contain three periods, usually "today, tonight, and the next day", e.g., "TODAY", "TONIGHT", and "TOMORROW".

4.2.5 Product Expiration Time. None.

4.2.6 Event Expiration Time. None.

4.3 Technical Description.

4.3.1 UGC Type. None.

4.3.2 MND Broadcast Instruction Line. None.

4.3.3 MND Product Type Line. The FWS MND is "SPOT FORECAST FOR NAME_OF_INCIDENT", where "NAME_OF_INCIDENT" is replaced appropriately.

4.3.4 Content. The standard format for wildfire spot forecasts defines the required elements: headlines (when RFW in effect or other significant weather is headlined in the FWF), discussion, sky/weather, temperature, relative humidity, and wind. Optional elements should be defined by the requesters or by agreement with the land management agencies in the AOP.

The content for non-wildfire spot forecasts (e.g., controlled burns, HAZMAT incidents, etc.) is

determined by the requester. These spot forecasts may contain any of the above required or optional elements plus any other agreed upon parameters. The period or number of periods in the spot should be defined by the user upon request of the spot forecast.

Forecasters should be aware of the critical weather element thresholds for the spot forecast area and/or incident. These thresholds are often determined by a fire behavior analyst or other fuels/fire behavior expert and define ranges of wind, relative humidity, etc. that, if realized, may cause significant increase (or decrease) in fire behavior. In most cases, such information can be obtained directly from the on-site requester. In the case of prescribed burns, these thresholds are often defined in the "Burn Plan", which is normally developed and approved well before a spot forecast is requested. Similarly, for hazardous materials releases, temperature, humidity and wind thresholds can cause dramatic changes in the behavior of a chemical and thus the response strategy that can be used.

Since spot forecasts cover a small geographical area, areal weather descriptors (such as scattered showers, isolated showers, etc.) should be avoided. Probability wording is more useful. The timing of significant events is important and, in the case of wind shifts, extremely critical. Twenty foot, ten minute wind will be used for fire related spot forecasts. Spot forecasts for other purposes will clearly indicate the level of the wind forecast.

4.3.5 Format.

4.3.5.1 Format for Wildfire Spot Forecasts. Forecasters will use the national standard for spot forecasts for wildfires as shown below in Exhibit 4-1. This standard ensures that fire suppression personnel brought in from another area of the country will be proficient in the interpretation of any spot forecast issued for wildfires.

Exhibit (4-1) - Standardized Spot Forecast for Wildfires (also for HAZMAT and Search and Rescue)

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FNUS7i KXXX DDHHMM
FWSXXX

SPOT FORECAST FOR (location or name of burn)

NATIONAL WEATHER SERVICE (CITY STATE)
TIME-DATE (800 AM MST TUE NOV 27 2001)

IF CONDITIONS BECOME UNREPRESENTATIVE...CONTACT THE NATIONAL WEATHER SERVICE.

...HEADLINE...(if a fire weather watch or red flag warning is in effect, a
headline is required - otherwise, a headline is recommended for every
issuance.)

DISCUSSION...(required)

FIRST PERIOD
   SKY/WEATHER.........
   TEMPERATURE.........
   HUMIDITY............
   WIND................(specify the wind level)
   OPTIONAL ELEMENTS...(as requested by the users)
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SECOND PERIOD
   SKY/WEATHER.........
   TEMPERATURE.........
   HUMIDITY............
   WIND................(specify the wind level)
   OPTIONAL ELEMENTS...(as requested by the users)

THIRD PERIOD
   SKY/WEATHER.........
   TEMPERATURE.........
   HUMIDITY............
   WIND................(specify the wind level)
   OPTIONAL ELEMENTS...(as requested by the users)

(OPTIONAL TABULAR INFORMATION)
.FIRST PERIOD...
TIME (LST or LDT)  (time step)  (time step)  (time step) (time step)
-----------------------------------------------------------------
ELEMENT #1.............
ELEMENT #2.............
ELEMENT #3.............
(other optional elements as requested by the users)

.SECOND PERIOD...
TIME (LST or LDT)  (time step)  (time step)  (time step) (time step)
-----------------------------------------------------------------
ELEMENT #1.............
ELEMENT #2.............
ELEMENT #3.............
(other optional elements as requested by the users)

.THIRD PERIOD...
TIME (LST or LDT)  (time step)  (time step)  (time step) (time step)
-----------------------------------------------------------------
ELEMENT #1.............
ELEMENT #2.............
ELEMENT #3.............
(other optional elements as requested by the users)

FORECASTER...(optional)

$$

REQUESTING OFFICIAL...(name of requester)
REASON FOR REQUEST...(reason for request)
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An example of a *narrative* Spot Forecast can be found here:
http://weather.gov/directives/010/401f/FWS_narrative.pdf

An example of a *tabular* Spot Forecast can be found here:
http://weather.gov/directives/010/401f/FWS_tabular.pdf

A copy of the manual Spot Forecast Form D can be found here:
http://weather.gov/directives/010/401f/WS_FORM_D_SPOT.pdf

4.3.5.2 Format for Non-Wildfire Spot Forecasts. Though the content and number of forecast periods may be different, the format for non-wildfire spot forecasts should conform to the standard format for wildfire spot forecasts (as in section 4.3.5.1 above). Other formats should be

approved by the appropriate Regional Headquarters and coordinated with the users in the AOP.

4.4 Updates and Corrections. Site-specific forecasts are considered one-time requests, and are not routinely monitored or updated. Spot forecasts may be updated when representative observations are available to the forecaster, he/she deems the current forecast does not adequately represent current or expected weather conditions, and emergency contact information is available to disseminate the update. Land management personnel may contact the appropriate WFO for a spot update if forecast conditions appear unrepresentative of the actual weather conditions.

The FWS will be corrected when a typographical/format error is detected. Corrections should be delivered to users in the same manner as the original FWS when possible.

5. Fire Weather Planning Forecast (Product Category FWF, WMO Header FNUS5i).

5.1 Mission Connection. The Fire Weather Planning Forecast is a zone-type product used by land management personnel primarily for input in decision-making related to pre-suppression and other planning. The decisions impact firefighter safety, protection of the public and property, and resource allocation. Weather parameters represent average conditions across the given zone unless otherwise stated in the local AOP.

5.2 Issuance Guidelines.

5.2.1 Creation Software. Weather Forecast Offices (WFOs) will use the Graphical Forecast Editor formatter to produce the FWF from published grids.

5.2.2 Issuance Criteria. The FWF is a routine product and should be issued at least once daily during the local fire season. The AOP will contain actual issuance criteria and frequency of issuance information based on user needs.

5.2.3 Issuance Time. Issuance times will be noted in the WFO or consolidated WFO AOP based on user needs.

5.2.4 Valid Time. The FWF is valid from time of issuance through day five (optional day seven).

5.2.5 Product Expiration Time. The FWF expires at the next routine issuance time, generally 12 to 24 hours from issuance.

5.2.6 Event Expiration Time. None.

5.3 Technical Description.

5.3.1 UGC Type. FWFs will use fire weather zone numbers and the zone format (Z) of the Universal Generic Code (UGC) to identify each specific forecast zone within a FWF segment. Where defined as such by the WFO, fire weather zone numbers may be the same as public zone

numbers.

5.3.2 Mass News Disseminator (MND) Broadcast Instruction Line. None.

5.3.3 MND Product Type Line. The FWF MND is "FIRE WEATHER PLANNING FORECAST FOR YOUR_AREA", where "YOUR_AREA" is replaced appropriately.

5.3.4 Content. Include the following elements in both the narrative and tabular versions of the Fire Weather Planning Forecast product. Some parameters, as noted, are optional.

a. Headlines. An overview headline is required when Red Flag Warnings and/or Fire Weather Watches are in effect. All headlines will include the warning type, location, reason for issuance (e.g., high winds and low humidity), and effective time period (i.e., the same format and information as in the Red Flag Warning headline, section 3.3.4.1). Describe the location in terms of geographic or other easily identified markers, such as forests, parks, cities, towns, rivers, or highways. Also, include a headline for a warning and/or watch in each appropriate zone grouping. FWF headlines must also use the standard NWS format of 3 ellipses preceding and following the headline statement. Significant trends of locally-defined critical weather elements should be headlined for non-watch/warning periods. To avoid confusion and possible inconsistencies among products, headlines for other watch-warning events from the public program (i.e., those headlined in the Zone Forecast Product as detailed in 10-503) should not be included in the FWF.

b. Discussion. The discussion should be a brief, clear, non-technical description of weather patterns that influence the weather in the forecast area. The emphasis of the discussion should be on the first two days of the forecast period, though latter periods may be included if significant weather is expected to impact safety or operations, and the forecaster has reasonable confidence the weather will occur.

c. Forecast Period. The FWF product should have a minimum of three 12-hour time periods. Insert locally-established weather elements, if any, in the Optional Elements section at the end of each time period in the narrative version and after the required elements in the tabular version. All issuances should have a general outlook section valid to day 5. Days 6 and 7 are optional. In this general outlook section, a forecast period may be either 12 or 24 hours depending on local user requirements.

d. Sky/Weather. Forecasters will follow the same guidelines for sky/weather and weather descriptors as those used in the Public Zone Forecasts (Refer to NWS Instruction 10-503) with the following exception. WFOs may optionally use the term "Widely Scattered" for the qualifying term when forecasting 20% POPs. This designation keeps the qualifier consistent with Lightning Activity Level (LAL) and thunderstorm coverage from the National Fire Danger Rating System (NFDRS).

e. Maximum or Minimum temperatures and optional 24-hour temperature trends.

f. Maximum or Minimum relative humidity and optional 24-hour RH trend. Minimum relative humidity should be forecast during the daytime and the maximum relative humidity during the nighttime. The range of the relative humidity forecasts should be 5 percent. However, where large elevation differences exist within a zone, ranges of 10 percent or more may be forecast, along with explanations for the larger ranges. In the narrative versions of the FWF, qualitative descriptions (poor, moderate, good) of nighttime humidity recovery are left as a regional or WFO option.

g. Wind. Indicate the prevalent direction and speed of the wind for each time period. Maximum gusts, erratic winds, and wind shifts should be mentioned when deemed significant. Wind directions should not be abbreviated in the narrative-style forecast. Wind will be 20 foot and 10 minute average. Other sub-descriptors can be added such as slope/valley, ridge top, AM/PM, etc. Use the 8-point compass for the wind direction, or in complex terrain, indicate slope or valley oriented wind direction (upslope/downvalley, etc.).

h. Extended (days 6, 7 optional). The extended period may be located at the end of the FWF and reflect an outlook for the entire FWF area, or optionally, an extended period may be located at the end of each zone segment and reflect an outlook for that particular segment. Weather elements in the extended period may include any or all of the mandatory day 1 and day 2 forecast elements. Forecasters will include the wind in the 3 to 5 day period and, when significant, beyond day 5 if appropriate. Wind forecasts should reflect the most significant synoptically driven wind affecting fire operations or ignition.

Additional elements may be included in the FWF. Specific parameters and formats will be specified in the local AOP. Examples of optional elements are: transport winds, mixing heights, lightning activity level (LAL), Haines index, chance of wetting rain (CWR), etc.

5.3.5 Format. Forecasters will compose the product in either the standardized narrative format (Exhibit 5-1, 5-2) or the standardized tabular format (Exhibit 5-3).

Exhibit (5-1) - Format of a morning narrative Fire Weather Planning Forecast.

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FNUS5i KNNN DDHHMM
FWFNNN

FIRE WEATHER PLANNING FORECAST FOR name of area
NATIONAL WEATHER SERVICE CITY STATE
TIME-DATE (example: 900 AM MDT FRI JUL 10 1999)

...HEADLINE...  (REQUIRED for Red Flag Warnings and Fire Weather
Watches....significant feature(s) at other times recommended)
```

```
.DISCUSSION...(concise, clear, non-technical explanation of the
current/forecasted fire weather)

SSZXXX-XXX>XXX-DDHHMM- (UGC/FIPS CODING)
GEOGRAPHICAL DESCRIPTORS (including land management governing units and
optional fire weather zone numbers)
TIME-DATE (repeat)

...RED FLAG WARNING/FIRE WEATHER WATCH HEADLINE (as needed in each appropriate
zone grouping)...

.TODAY...
SKY/WEATHER.........
MAX TEMPERATURE.....
   24 HR TREND...... (optional)
MIN HUMIDITY........
   24 HR TREND...... (optional)
20 FT WIND..... (optional – include sub-descriptors e.g.
slope/valley..valleys/lwr slopes..ridge top...ridges/upr slopes..etc.)
LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
                           etc.)generated from fire weather grids.

.TONIGHT...
SKY/WEATHER.........
MIN TEMPERATURE.....
   24 HR TREND...... (optional)
MAX HUMIDITY........
   24 HR TREND...... (optional)
20 FT WIND.... (optional – include sub-descriptors e.g.
slope/valley..valleys/lwr slopes..ridge top...ridges/upr slopes..etc.)
LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
                           etc.)

.TOMORROW...
SKY/WEATHER.........
MAX TEMPERATURE.....
MIN HUMIDITY........
20 FT WIND.... (optional – include sub-descriptors e.g.
slope/valley..valleys/lwr slopes..ridge top...ridges/upr slopes..etc.)
LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
                           etc.)

(.FORECAST DAYS 3 THROUGH 7 may optionally be provided for each zone segment)

$$

[forecast for next geographical descriptor and fire weather zone group]

$$

.EXTENDED...(Optional time period)(winds must be included days 3-5, days 6 and
7 if appropriate; other elements  per locally-established policy; may be in
each zone segment versus this location; may optionally be presented as 12 hour
periods)
.DAY3... (days can be combined, e.g., .SUNDAY THROUGH TUESDAY...)
.DAY4...
.DAY5...
.DAY6... (days 6 and 7 optional)
.DAY7...

.OUTLOOK… FOR DAY MONTH DATE THROUGH DAY MONTH DATE (per local-established
```

```
policy - Days 8-14, 30 and 90 day outlooks when issued)

$$

NAME (OPTIONAL)
```

Exhibit (5-2) -Format of an afternoon narrative Fire Weather Planning Forecast.

```
FNUS5i KNNN DDHHMM
FWFNNN

FIRE WEATHER PLANNING FORECAST FOR name of area
NATIONAL WEATHER SERVICE CITY STATE
TIME-DATE (example: 300 PM MDT THU JUL 10 1999)

...HEADLINE...  (REQUIRED for Red Flag Warnings and Fire Weather
Watches....significant feature(s) at other times)

.DISCUSSION...(concise, clear, non-technical explanation of the
current/forecasted fire  weather)

SSZXXX-XXX>XXX-DDHHMM- (UGC/FIPS CODING)
GEOGRAPHICAL DESCRIPTORS (including land management governing units and
optional fire weather zone numbers)
TIME-DATE (repeated)

...RED FLAG WARNING/FIRE WEATHER WATCH HEADLINE (as needed in each appropriate
zone grouping) ...

.TONIGHT...
SKY/WEATHER.........
MIN TEMPERATURE.....
   24 HR TREND...... (optional)
MAX HUMIDITY........
   24 HR TREND...... (optional)
WIND................ (include definition, e.g. 20 FT/10-min avg)
                     (slope/valley..valleys/lwr slopes..etc.)
                     (ridge top...ridges/upr slopes..etc.)
LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
                           etc.)

.TOMORROW...
SKY/WEATHER.........
MAX TEMPERATURE.....
   24 HR TREND...... (optional)
MIN HUMIDITY........
   24 HR TREND...... (optional)
WIND................ (include definition, e.g. 20 FT/10-min avg,)
                     (slope/valley..valleys/lwr slopes..etc.)
                     (ridge top...ridges/upr slopes..etc.)
LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
                          etc.)

.TOMORROW NIGHT...(third period could be either TOMORROW NIGHT or FOLLOWING
DAY - Day 2)
SKY/WEATHER.........
MIN TEMPERATURE.....
MAX HUMIDITY........
WIND................ (include definition, e.g. 20 FT/10-min avg)
                     (slope/valley..valleys/lwr slopes..etc.)
```

```
                     (ridge top...ridges/upr slopes..etc.)
LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
                           etc.)

.FOLLOWING DAY (Day 2)...
SKY/WEATHER.........
MAX TEMPERATURE.....
MIN HUMIDITY........
WIND.............. (include definition, e.g. 20 FT/10-min avg)
                     (slope/valley..valleys/lwr slopes..etc.)
                     (ridge top...ridges/upr slopes..etc.)
LOCAL OPTIONAL ELEMENTS...(transport winds, mixing heights, LAL, Haines, CWR,
                           etc.)

(.FORECAST DAYS 3 THROUGH 7 may optionally be provided for each zone segment)

$$

[forecast for next geographical descriptor and fire weather zone group]

$$

.FORECAST DAYS 3 THROUGH 7...(winds must be included days 3-5, days 6 and 7 if
appropriate; other elements per locally-established policy; may be in each
zone segment versus this location; if day 2 not included above, then this
section should start at day 2; may optionally be presented as 12 hour periods)
.DAY3... (days can be combined, e.g., .SUNDAY THROUGH TUESDAY...)
.DAY4...
.DAY5...
.DAY6... (days 6 and 7 optional)
.DAY7...

.OUTLOOK FOR DAY MONTH DATE THROUGH DAY MONTH DATE (per local-established
policy - Days 8-14, 30 and 90 day outlooks when issued)

$$
```

An example of a *narrative* Fire Weather Forecast can be found here:
http://weather.gov/directives/010/401f/FWF_narrative.pdf

Exhibit (5-3) - Format for the Tabular Fire Weather Planning Forecast. Format shown is for the afternoon issuance; morning issuance is identical except for three periods instead of four. **Bold text** denotes required elements.

```
FNUS5i KNNN DDHHMM
FWFNNN

FIRE WEATHER PLANNING FORECAST FOR name of area
NATIONAL WEATHER SERVICE CITY STATE
TIME-DATE (example: 300 PM EST TUE JAN 1 2001)

...HEADLINE... (REQUIRED for Red Flag Warnings and Fire Weather
Watches...significant feature(s) at other times recommended)

.DISCUSSION...(concise, clear, non-technical explanation of the
current/forecasted fire weather)

SSZXXX-XXX>XXX-DDHHMM- (UGC/FIPS coding)
```

GEOGRAPHIC DESCRIPTORS (such as land management units, political boundaries, geographic features, and/or fire weather zones)
TIME-DATE (repeated)

...RED FLAG WARNING/FIRE WEATHER WATCH HEADLINE (as needed in each appropriate zone grouping) ...

PARAMETER	**TONIGHT**	**TOMORROW**	**TOMORROW NIGHT**	**FOLLOWING DAY**
CLOUD COVER	**(CLOUDY, MCLDY, PCLDY, CLEAR)**			
CHANCE PRECIP (%)	**(Percent chance precip 0-100 or areal coverage)**			
PRECIP TYPE	**(NONE, DRIZL, FRZ RAIN, SNOW/RAIN, RAIN, TSHWR)**			
TEMP (24H TREND)	**(Max/min temps as zone avg or extremes, trend not included in 3rd or 4th period PM forecasts)**			
RH % (24H TREND)	**(Max/min relative humidity as zone avg or extremes, trend not included in 3rd or 4th period PM forecasts)**			
20FT WND MPH(VALLEY/AM)	**(8 pt compass or upslope/downslope and MPH w gusts, can be VALLEY or AM wind)**			
20FT WND MPH(RIDGE/PM)	**(8 pt compass and MPH w/gusts, can be PM or ridge top winds)**			
PRECIP DURATION	(Hours of precip in period)			
PRECIP BEGIN	(Onset of precip probability)			
PRECIP END	(Cessation of precip probability)			
PRECIP AMOUNT	(Zone avg QPF inches)			
LAL	(Lightning Activity Level)			
HAINES INDEX (LOW)	(As applicable)			
HAINES INDEX (MID)	(As applicable)			
HAINES INDEX (HIGH)	(As applicable)			
MIXING HGT (AGL/MSL)	(Feet or meters)			
TRANSPORT WIND(KTS)	(8 pt compass)			
VENT RATE (KT-FT)	(Mixing height times transport wind)			
DISPERSION	(Locally defined category, e.g. GOOD)			
SUNSHINE HOURS	(Total hours of sun)			
(OTHER LCL OPTIONS)	???	???		

REMARKS...APPROPRIATE REMARKS TO ADD VALUE AND MARK SIGNIFICANT WEATHER CHANGES. INSERT ‘NONE’ IF NONE.

(.Extended forecast may optionally be provided for each zone segment)

$$

[Forecast for next geographical descriptor and fire weather zone group]

$$

.EXTENDED... (wind required days 3-5, days 6 and 7 if appropriate; other elements per locally-established policy; days 3-7 may be grouped in any combination; may be in each zone segment versus this location; may optionally be presented as 12 hour periods)
.DAY 3...
.DAY 4...
.DAY 5...
.DAY 6... (days 6 and 7 optional)
.DAY 7...

.OUTLOOK (per local-established policy - Days 8-14, 30 and 90 day outlooks when issued)

$$

An example of a *tabular* Fire Weather Forecast can be found here:
http://weather.gov/directives/010/401f/FWF_tabular.pdf

5.4 Updates and Corrections. The FWF will be updated when a Fire Weather Watch or a Red Flag Warning is issued or canceled, or when forecast elements are deemed unrepresentative. The FWF will be corrected when a typographical/format error is detected.

6. National Fire Danger Rating System (NFDRS) Forecast (Product Category FWM, WMO Header FNUS8i).

6.1 Mission Connection. The National Fire Danger Rating System measures wildland fire danger at observation sites throughout the contiguous United States. The National Weather Service role in NFDRS is forecasting weather input which, combined with user input, allows the NFDRS software to predict the next day's fire danger indices. These indices impact agency resource management decisions, firefighter safety, and protection of the public and property. Note that a NFDRS station may represent a large fire danger rating area of similar climatology and fuel type. NFDRS forecasts for a station are intended to be applied across a large fire danger rating area.

6.2 Issuance Guidelines.

6.2.1 Creation Software. The AWIPS GFE NFDRS formatter will be used to generate the FWM. The individual station forecast (either actual or trend) is recommended over the zone format.

6.2.2 Issuance Criteria. The NFDRS forecast is a routine product. Where requested by the user, forecasts will be issued at least once a day during the locally determined fire season. A current observation must be received for a NFDRS forecast to be generated.

6.2.3 Issuance Time. Weather observations valid for approximately 1300 Local Standard Time (LST) are taken by the land management agencies and transmitted through AWIPS using the FWO product ID. This product should have a header above the data which states "**Listing of Observations**". Forecasters will use these observations as a basis for generating forecasts valid 24 hours later (the NFDRS forecast), so NFDRS forecast issuance times are dependent on the arrival of these observations. Observations generally arrive in the mid-afternoon hours and forecasts follow soon thereafter. Representative observations for use in making NFDRS projections can also be accessed by other dependable means, including the Real-time Observation Monitor and Analysis Network (ROMAN) and state RAWS collectives from the Internet.

6.2.4 Valid Time. NFDRS forecasts are valid 24 hours from the time of the observation (1300 LST).

6.2.5 Product Expiration Time. None.

6.2.6 Event Expiration Time. None.

6.3 Technical Description.

6.3.1 UGC Type. None.

6.3.2 MND Broadcast Instruction Line. None.

6.3.3 MND Product Type Line. None.

6.3.4 Content. Forecasters should include the following in the NFDRS forecast. Item 6.3.4.l below, 10HR time lag fuel moisture, should only be forecast for manual NFDRS reporting stations. Fuel moisture forecasts for telemetered NFDRS stations will be calculated by WIMS and this forecast field should not be edited:

a. **ZONE/FCST** Shows whether this forecast is for an NFDRS zone or individual station. Zone average trends can be used when enough observations are available for the zone area. Choice between zone or individual station forecasts should be worked out in the AOP with fire weather users.

b. **NO** NFDRS Zone Number (or individual NFDRS site number)

c. **YYMMDD** Year, month, and day valid forecast time

d. **13** Always 1300 LST

e. **WX** Weather valid at 1300 LST tomorrow. Valid entries are:

0	clear
1	scattered clouds (1/8 to 4/8)
2	broken clouds (5/8 to 7/8)
3	overcast clouds (more than 7/8)
4	foggy
5	drizzle
6	raining
7	snowing or sleeting
8	showers (in sight or at the station)
9	thunderstorm

(Categories 5, 6, or 7 sets wet flag to “yes”)

f. **TEMP** Temperature in deg F valid at 13 LST (or temperature trend + or -)

g. **RH** Relative humidity in percent valid at 13 LST (or RH trend + or -)

h. **LAL1** Lightning Activity Level 1400 LST to 2300 LST (optional)

i. **LAL2** Lightning Activity Level 2300 LST to 2300 LST (optional)

j. **WDIR** Use only for point forecast (FCST) version. Enter direction using sixteen point compass (N, NNE, NE, ENE, etc.) valid at 13 LST (20 ft level/10 minute average).

k. **WSPD** Enter wind speed in mph valid at 13 LST (or wind speed trend + or

		-, 20 ft level/10 minute average)
l.	**10HR**	10 hour timelag fuel moisture in percent valid at 13 LST (or trend + or -) (***Forecasted only for manual NFDRS stations***)
m.	**Tx**	Max temperature from 1300 LST to 1300 LST tomorrow
n.	**Tn**	Min temperature from 1300 LST to 1300 LST tomorrow
o.	**RHx**	Max relative humidity from 1300 LST to 1300 LST tomorrow
p.	**RHn**	Min relative humidity from 1300 LST to 1300 LST tomorrow
q.	**PD1**	Precipitation duration in hours 1300 LST to 0500 LST
r.	**PD2**	Precipitation duration in hours 0500 LST to 1300 LST
s.	**WETFLAG**	Y or N. Indicates whether liquid water will be on the fuels at 13 LST. (Use with caution - a "Y" will set all the NFDRS indices to zero!)

6.3.5 Format. The NFDRS Forecast will follow the comma delimited format as shown:

ZONE,NO,YYMMDD,13,WX,TEMP,RH,LAL1,LAL2,WSPD,10HR,TX,TN,RHx, RHn,PD1,PD2,WETFLAG

FCST,NO,YYMMDD,13,WX,TEMP,RH,LAL1,LAL2,WDIR,WSPD,10HR,TX,TN, RHx,RHn,PD1,PD2,WETFLAG

Examples of the point and zone products, formatted for transmission into AWIPS, are displayed below:

```
FNUS85 KBOI DDHHMM
FWMBOI

ZONE,403,011027,13,1,-3,0,1,1,0,0,,,,,0,0,N
ZONE,404,011027,13,0,3,0,1,1,0,0,,,,,0,0,N
ZONE,408,011027,13,0,4,-5,1,1,-3,0,89,68,75,22,0,0,N

FNUS82 KMWI DDHHMM
FWMJAX
FCST,083501,030219,13,1,69,43,1,1,SE,8,,72,46,100,40,0,0,N
FCST,081301,030219,13,1,67,42,1,1,SSE,5,,70,41,100,39,0,0,N
```

Follow the format precisely in order for the forecasts to be used as NFDRS input. Separate each element by a comma with no intervening spaces. (Some elements may not be forecast, but are represented by the null space between two consecutive commas.)

When the NWS NFDRS Forecast (FWM) is sent to the Weather Information Management System (WIMS), the product is automatically combined with information entered by land management personnel to provide the NFDRS fire index forecast. At roughly 1500 LST, the AWIPS product **NMCFWOXXX** should be available if the forecast values were accepted into the NFDRS system. The product will look similar to the observed values reported earlier, but the header should read: **Listing of Forecasted Observations.** If the page is blank, some formatting error prevented the forecast values from being accepted.

6.4 Updates and Corrections. Since the NFDRS system runs once a day, FWMs are not typically updated. The FWM will be corrected when a typographical/format error is detected.

6.5 Suspension of NFDRS Forecasts. If a known maintenance or data accuracy problem exists with an NFDRS forecast site, the problem will typically be reported to the station owner by the NIFC RAWS depot via e-mail. It is the duty of the station owner to take corrective action. If a WFO knows of this problem and maintenance is not completed on the observation site, the WFO may suspend the NFDRS forecast for that site until the problem is solved. Coordination and notification of the NFDRS forecast suspension will be coordinated with the Predictive Services section in the affected Geographic Area Coordination Center.

7. Land Management Forecast (Product Category FWL, WMO Header - FNUS8i). The Land Management Forecast product is a general-purpose, miscellaneous-type product with content, format, issuance, etc. determined per locally established requirements.

8. Smoke Management Forecast (Product Category SMF, WMO Header - FNUS7i). WFO staff issue smoke management forecasts at the request of land management agencies. The SMF may be issued on a routine basis, or issued as needed, and may be narrative, or tabular in format, or a combination of both. Forecasters may include the smoke management forecast as part of another weather product (for instance, the FWF) or as a separate product. The requester and the responsible NWS office should establish the content, format, frequency of issuance, dissemination method, etc.. This product may contain forecasts of the transport winds and the variability of transport winds with height and time, air mass stability, air dispersion and measures of dispersion, mixing depths and variations with time as well as other smoke management related parameters.

9. Rangeland/Grassland Fire Danger Statement (Product Category RFD, WMO Header - FNUS6i). A Rangeland, or Grassland Fire Danger Statement product is a miscellaneous product which provides advisory information on rangeland and/or grassland fire potential or conditions. Land management and NWS personnel should establish the contents, format, frequency of issuance, dissemination, etc. This product may be issued on a routine or non-routine basis.

10. Storm Prediction Center (SPC) Fire Weather Outlook (Product Category FWD, WMO Header - FNUS21, FNUS22 and FNUS28).

10.1 Mission Connection. The SPC Day One, Day Two and Day 3-8 Fire Weather Outlooks (narrative and graphical) describe large-scale meteorological conditions in the lower 48 states which, when combined with the antecedent fuel conditions, favor the rapid growth and spread of a fire, should a fire ignition occur. These outlooks provide guidance for WFO forecasters and aid land management agencies in determining large-scale areas of fire danger risk.

10.2 Issuance Guidelines.

10.2.1 Creation Software. NAWIPS, PC and Web based.

10.2.2 Issuance Criteria. The Day One, Day Two and Day 3-8 Fire Weather Outlooks are

scheduled products and are issued once per day.

10.2.3 Issuance Time. The outlooks are issued at 4:00 AM CST and 5:00 AM CDT.

10.2.4 Valid Time. The outlook period for each Day One and Day Two outlook will extend from 12 to 12 UTC. The outlook period for the Day 3-8 outlook extends from the end of the Day Two outlook period, through 12Z on the eighth calendar day after the product issuance time.

10.2.5 Product Expiration Time. At 1200 UTC tomorrow (Day One) and at 1200 UTC the next day (Day Two). The Day 3-8 outlook expires at 12Z day eight.

10.2.6 Event Expiration Time. None.

10.3 Technical Description. Outlooks should follow the format and content described in this section.

10.3.1 UGC Type. None.

10.3.2 MND Broadcast Instruction Line. None.

10.3.3 MND Product Type Line. Day (One, Two or 3-8) Fire Weather Outlook.

10.3.4 Content. The outlooks (text and graphic) will highlight:

a. Significant Dry Thunderstorm Critical Fire Weather Areas (areas of numerous cloud-to-ground lightning strikes with generally less than one-tenth inch of rain across the area, a closed scalloped area on graphic)
b. Critical Fire Weather areas (based on fuel conditions and forecast weather, designated as a closed area on graphic)
c. Extremely Critical Fire Weather areas (issued infrequently for only the most severe forecast and fuel conditions, designated as a closed, hatched area on graphic)
d. "See Text" defines the case where an area is being considered for a possible critical fire weather outlook, but there is uncertainty or the expected weather conditions will be just below the criteria for a critical area. In addition, a forecaster can also use "…AREA…" notation to describe areas that have had fire weather problems and/or have more than one limiting factor.

The Day 1 ,Day 2 and Day 3-8 text and graphics should be similar. Areas that are a marginal threat (lacking one critical element) should be depicted by SEE TEXT on the graphic and discussed last in the text message.

10.3.5 Format. The text outlooks should follow the format specified in exhibit 10-1 for the Day One and Day Two outlooks. Exhibit 10-2 provides an example of the Day 3-8 outlook text product. The products are provided via AWIPS and the Web and can be viewed on the Web at http://www.spc.noaa.gov/fire.

The text format for the Day One and Day Two outlooks will include:

a. Headlines that highlight all critical fire weather areas
b. Synopsis of large-scale conditions affecting fire weather conditions across the lower 48 states
c. Individual fire weather areas with primary conditions affecting the area and a brief discussion of the forecast fire weather conditions
d. Other areas forecast to have marginal fire weather conditions but need to be monitored

The text format for the Day 3-8 outlook will include:

a. Synopsis of large-scale conditions affecting fire weather conditions across the lower 48 states
b. Individual fire weather areas with primary conditions affecting the lower 48 states, including dry thunderstorm potential.

Exhibit (10-1) - Format example of text version of SPC Fire Weather Outlook Product.

```
FNUS21 KWNS ddhhmm
FWDDY1

DAY 1 FIRE WEATHER OUTLOOK
NWS STORM PREDICTION CENTER NORMAN OK
Time am time_zone day mon dd yyyy

VALID DDHHMMZ – DDHHMMZ

...EXTREMELY CRITICAL FIRE WEATHER AREA FOR AREA OF CONCERN #1...
...CRITICAL FIRE WEATHER AREA FOR AREA OF CONCERN #2... (other areas as
needed)

...SYNOPSIS...
(TEXT)

...EXTREMELY CRITICAL FIRE WEATHER AREA #1...
AREAS OF HIGHEST RISK ARE DISCUSSED FIRST

PRIMARY CONDITIONS:
NARRATIVE TECHNICAL DISCUSSION


...CRITICAL FIRE WEATHER AREA #2...

PRIMARY CONDITIONS:

NARRATIVE TECHNICAL DISCUSSION

..FORECASTER.. MM/DD/YYYY

...PLEASE SEE WWW.SPC.NOAA.GOV/FIRE FOR GRAPHIC PRODUCT...
```

Exhibit (10-2) - Format example of text version of SPC Day 3-8 Fire Weather Outlook Product.

```
FNUS28 KWNS ddhhmm
FWDD38

DAY 3-8 FIRE WEATHER OUTLOOK
NWS STORM PREDICTION CENTER NORMAN OK
Time am time_zone day mon dd yyyy

VALID DDHHMMZ - DDHHMMZ

...DISCUSSION...
(TEXT)

..FORECASTER.. MM/DD/YYYY

...PLEASE SEE WWW.SPC.NOAA.GOV/FIRE FOR GRAPHIC PRODUCT...
```

10.4 Updates and Corrections. Outlooks are not updated or amended. Corrections are sent on as needed basis.

10.5 AWIPS IDs. The AWIPS Graphic IDs are:

		WMO
Day 1	RBGFW1	PMWE98 KWNS for Day 1 (valid 12 UTC today-12 UTC tomorrow)
Day 2	RBGFW2	PMWI98 KWNS for Day 2 (valid 12 UTC tomorrow-12 UTC the day after)
Day 3-8	FWDD38	PGNO98 KWNS for Day 3-8 (valid 12 UTC third day from issuance through 12 UTC eighth day from issuance)

The AWIPS Text IDS are:

		WMO
Day 1	FWDDY1	FNUS21 KWNS for Day 1 (valid 12 UTC today-12 UTC tomorrow)
Day 2	FWDDY2	FNUS22 KWNS for Day 2 (valid 12 UTC tomorrow-12 UTC the day after)
Day 3-8	FWDD38	FNUS28 KWNS for Day 3-8 (valid 12 UTC third day from issuance through 12 UTC eighth day from issuance)