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NATIONAL WEATHER SERVICE INSTRUCTION 10-401

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Operations and Services

Products and Services to Support Fire, NWSPD 10-4

FIRE WEATHER SERVICES PRODUCT SPECIFICATION

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

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SUMMARY OF REVISIONS: This directive supersedes NWSI 10-401, "*Fire Weather Services Product Specification*," dated December 29, 2017.

The following revisions were made to this instruction:

1. Edited section 3.2.2 to include guidance on issuing language for exceptional or particularly dangerous Red Flag Warnings.
2. Edited sections 6.1and 6.4 to describe implementation of the seven day NFDRS forecasts.
3. Added a Section 12 to provide guidance for non-weather event messaging for fires.
4. Updated Section 10 for operational implementation of SPC Day 3-8 product content.

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Fire Weather Services Product Specification

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1. Introduction.

The National Weather Service (NWS) ensures the provision/availability of fire weather products and services consisting of the following:

a. Digital Forecasts and Services
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) *
f. Other local and/or regional Decision Support Services as outlined in the Weather Ready Nation Strategic Plan/ Roadmap and Decision Support Services Directive Series
g. Storm Prediction Center Fire Weather Outlooks

* In Alaska Region, Weather Forecast Offices (WFO) do not produce NFDRS FWM products

These services and products define NWS forecast response across the spectrum of operational fire weather user requests. The top priority in product content is user and public safety, with an emphasis on preparing fire fighters and fire managers with weather information for tactical decision support. Fire weather products support medium to short range tactics and planning through Digital Forecasts and Services. The FWF and Fire Weather Outlooks provide the basic fire weather forecast information from short to medium ranges. As any fire weather event nears, Fire Weather Watches identify potential critical events. Within 36 hours of a potential fire weather event, more detailed information can be found in the Red Flag Warning, Spot Forecast, Fire Weather Outlooks and NFDRS forecast products.

Each product type is designed to fulfill the specialized needs for fire weather information with as much advance notice as possible. While most fire weather products are available to the general public, their response to unfolding fire events should be facilitated through communication with local governments, emergency managers, fire fighters, and other public safety officials. These officials receive NWS forecast information and provide the appropriate calls-to-action for the public. The NWS can assist in the process through user-coordinated call-to-action statements found in NWS products and agreed upon in appropriate Annual Operating Plans (AOPs).

NWS Regional Headquarters and WFOs may provide localized services or products to support user requirements when these services or products remain within the bounds of the National Oceanic and Atmospheric Administration (NOAA) 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 interagency AOPs and NWS Instruction 10-404, *Fire Weather Services Annual Operating Plan and Report*. Implementation of new products and services must comply with NWS Instruction 10-102, *New or Enhanced Products and Services*.

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

Examples of the required text products are shown as web links.

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. For example, Alaska FWFs will use FNAK5i instead of FNUS5i. 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. Digital Forecasts and Services.

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:

https://www.weather.gov/mdl/ndfd_info

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

3.1 Mission Connection. Forecasters issue Fire Weather Watches/Red Flag Warnings (RFW) when the combination of 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 Advanced Weather Interactive Processing System (AWIPS) Graphical Headline Generator (GHG) software to issue/update RFW products. Bullet format RFWs are produced for a combination of weather and fuel dryness criteria as defined in local interagency AOPs. Additionally, the formatter for bullet style RFWs allows definitions of affected areas above or below specified elevations.

Dissemination of the RFW reflects local user capabilities to provide the most efficient means of relaying watch/warnings information to the appropriate fire suppression personnel. Fire Weather Watch/RFW dissemination methods are detailed in the AOP.

3.2.2 Issuance Criteria. Red Flag criteria are determined by coordination between WFO personnel and land management users within the WFO fire weather service area. Each WFO or group of WFOs should have their criteria well-documented in the interagency AOP (see NWSI 10-404) and Station Duty Manual (SDM).

Red Flag criteria consist of both fuel dryness and weather parameters. WFO fire weather program leaders monitor NFDRS and other suitable fire danger indices, coordinate with land management personnel on fuel condition status, and make sure this information is available to WFO forecasters. Meteorological criteria for a RFW include but are not limited to:

a. Lightning episodes
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 at the National Interagency Fire Center or Area Coordination Centers prior to the issuance of a Fire Weather Watch or RFW. However, final authority to issue a RFW product resides with the NWS.

In some synoptic situations, weather conditions meeting warning criteria will exist for portions of a multi-day period, with only a few hours of periodic remission due to diurnal effects or local climatology. In these situations, it may be 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 contains explicit information regarding the expected short time period(s) when critical conditions will subside. WFOs are encouraged to discuss handling prolonged Red Flag Warning and Fire Weather Watch situations in partner meetings to determine which method is preferred in their local area.

Certain meteorological and fuels conditions may warrant specific RFW product reference to exceptional or particularly dangerous fire weather events. In these rare instances where WFO RFW criteria are greatly exceeded and/or near record levels, the WFO should specify the nature of the exceptional hazard in the headline and the body of the RFW message. The WFO will not rename the RFW product title itself. The primary audience of the exceptional messaging will be fire management, for the purpose of providing forecast intelligence for firefighting safety. A WFO may also highlight particularly dangerous RFW conditions for the public, if this message is closely coordinated with local emergency managers, fire managers and the Regional Operations Center.

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. The watch will be issued 18 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. The overall intent of a Fire Weather Watch is to alert users at least a day in advance for the purpose of resource allocation and firefighter safety.

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 RFW warns 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 48 hours or less. Longer lead times are encouraged when confidence is very high or the fire danger situation is critical. Forecasters can issue the warning for all or selected portions within a fire weather zone.

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

3.2.4 Valid Time. A Fire Weather Watch or RFW 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 RFW, the beginning of the Valid Time period is simply the issuance time. For RFWs 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 (see 10-1601 for verification details).

Valid time information is included in RFW headlines as well as in Valid Time Event Code (VTEC) coding.

3.2.5 Product Expiration Time. The Universal Generic Code (UGC) product expiration time should be approximately 12 to 36 hours. Updates or continuation statements should be issued as the situation dictates. This expiration time can vary, but any significant variance should be agreed upon and noted in the AOP.

3.3 Technical Description.

3.3.1 UGC Type and Valid Time Event Coding (VTEC). RFWs use fire weather zone numbers and the zone (Z) form of UGC 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 as described in NWSI 10-1703 (Valid Time Event Code). The VTEC line will contain information on the type of product (RFW 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 "URGENT – FIRE WEATHER MESSAGE."

3.3.4 Content. The Fire Weather Watch and RFW format will include segmented forecast information, and will contain an overview section. All segments of Fire Weather Watches and RFWs will follow a bullet format as shown in Exhibit 3-1.

3.3.4.1 Overview Section. RFWs will contain an optional overview headline and an optional overview synopsis:

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

   Example:
   …RED FLAG WARNING FROM 2PM TO 7PM PST TODAY FOR STRONG WINDS AND LOW HUMIDITY ACROSS SOUTHEAST OREGON…

b. Overview Discussion – an optional, brief, non-technical discussion of the expected fire weather event. This section should not repeat information already found in the

FWF discussion, focusing solely on the cause of the RFW event. This optional discussion should not be more than three lines in length.

3.3.4.2 Segmented Forecast Information. Each bulleted segment of the Fire Weather Watch/ RFW will include:

a. UGC coding followed by the VTEC line and Geographic Descriptor(s);
b. A headline describing the state of the FIRE WEATHER WATCH or RED FLAG WARNING (issued, continued, canceled), the effective time of the event, the critical weather element(s) causing the event, and the affected area;
c. 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…

There is no attribution line for subsequent issuances (updates, cancellations), unless a new area is added to the RFW.

3.3.4.3 Order of Segments. The order of RFW 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 above.

3.3.4.5 Bullet Format. Bullet format RFWs have been endorsed by fire weather users to help ensure brevity and more efficient communication of critical information to fire crews. Bullets should be one to two lines long, with no single bullet within a RFW (segment) more than four lines long. Routine exceptions to this size limit can only be made with approval from a Regional Headquarters unit.

The recommended order of bullets is shown below, but can vary based on local user needs and if documented in the AOP.

*Affected Area (by fire weather zone; if users agree, fire weather zone numbers can be used alone for brevity)

*Timing

*Weather Element Forecast(s) (more than one bullet is allowed, such as Wind and relative humidity (RH) or Lightning and Outflow winds; no more than three weather element bullets should be used)

*Impacts (specific impacts on fire threat and/or fire behavior)

Each bulleted segment will be followed by a brief precautionary/preparedness action statement.

3.3.5 Format. Exhibit (3-1) – Bullet format for a FIRE WEATHER WATCH MESSAGE:

https://www.nws.noaa.gov/directives/010/401k/Exhibit_3-1.pdf

An example of a single segment bullet format Fire Weather Watch can be found here:

https://www.nws.noaa.gov/directives/010/401k/RFW%20Single%20segment%20bullet%20Fire%20Weather%20Watch.pdf

An example of a multiple segment bullet format RFW can be found here:

https://www.nws.noaa.gov/directives/010/401k/RWF%20Multiple%20Segment.pdf

An example of a bullet format Fire Weather Watch and RFW with an overview synopsis can be found here:

https://www.nws.noaa.gov/directives/010/401k/RFW%20multiple_segment%20overview.pdf

3.4 Updates and Corrections. A Fire Weather Watch remains in effect until the watch: 1) is canceled, 2) is upgraded to a RFW, or 3) expires. A RFW remains in effect until the warning: 1) is canceled, or 2) expires.

The same product identifier (RFW) is used for issuing, updating, and canceling Fire Weather Watches and RFWs. Forecasters will also update the FWF product when a RFW product is issued, updated, or canceled.

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/RFWs 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.

Forecasters will avoid the term “explosive fire growth” within the text of the RFW, as this terminology is not used in wildland fire fighting. Alternate terms should be chosen related to weather parameters that may contribute to extreme fire behavior.

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, marine incidents, search and rescue response and other threats to public safety. However, the instructions in this section focus primarily on wildland fire response and certain elements of hazardous materials response.

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 Graphical Forecast Editor (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 unavailable, spot forecasts may be requested and disseminated manually using WS Form D-1, Spot Request (available in appendix B of this instruction). Copies of spot forecasts outside AWIPS are 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 forecasts.

a. The forecast contains three or four forecast periods, depending on issuance time, with detailed forecast information as per user specifications.
b. General outlooks and extended forecasts can be provided beyond the first three forecast periods when requested.
c. The forecasts are usually issued with a turn-around time of 30 to 60 minutes unless the request is for the next day; in this case fulfillment may be delayed until the date of ignition depending on forecast workload and duty priorities.
d. Requests may be submitted up to one day before a specified ignition time.
e. For one-day advance forecast requests and beyond, users should use the variety of available weather planning tools in the planning of prescribed burns or other future projects.

Multiple requests for the same project prior to ignition are strongly discouraged. The purpose of the spot forecast is for active wildfires, active all-hazard incidents, search and rescue, and prescribed projects that are intended to be performed within one day of the spot request. NWS WFOs will strongly encourage their users to utilize alternative planning tools and forecasts to prevent unnecessary forecast requests, especially for projects that will not be started within one day of the request. Planned, advance spot forecasts up to one day in advance can however be coordinated for active, long-duration emergencies or fires. Once the project has begun, the frequency of spot updates is coordinated with the requester.

A list of alternative planning tools and forecasts can be found here:

https://www.nws.noaa.gov/directives/010/401k/PlanningTools.pdf

WFOs may provide spot forecasts upon request of any federal, state, tribal, or local public safety official who represents that the spot forecast is required to support a wildland fire.

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.

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.

c. Upon request of any public safety official who represents that the spot forecast is essential to public safety, e.g. due to the proximity of population centers or critical infrastructure, essential to protect incident responders, and/or essential to protect vital resources. 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.

d. In support of Homeland Security Presidential Directive #5 (HSPD 5).

https://www.dhs.gov/sites/default/files/publications/Homeland%20Security%20Presidential%20Directive%205.pdf

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 County Warning Area (CWA) or fire weather services area. These policies/procedures should be clearly defined in the Station Duty Manual (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: (latitude, longitude), topography and elevation (if needed), and contact name(s) and telephone number(s) of the requester(s) (see section 4.2.2.1). For spot requests supporting wildfires or prescribed burns, the requester(s) will 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 variety of available local, regional and national forecast tools. Available planning tools can be found here:

https://www.nws.noaa.gov/directives/010/401k/PlanningTools.pdf

However, available planning tools may not replace the need for a spot forecast.

In specialized long-term decision support events, routine detailed SPOT forecasts may be coordinated through the local WFO and incident response team.

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

a. Requesting Official;
b. Government agency;
c. Phone number; and

d. The reason for the spot forecast, which satisfies the specifications 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 NWS 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. Requests for advance forecast periods will have appropriate period labels in the body of the forecast. For example, a forecast request in the afternoon for the next morning (that is issued immediately) would have forecast period labels of "(Day of the week)", "(Day of the week) NIGHT", and the next calendar day.

4.2.5 Product Expiration Time. Not applicable.

4.2.6 Event Expiration Time. Not applicable.

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. Spot forecasts for marine events are issued by WFOs and National Centers in support of search and rescue operations and natural coastal resource management. Spot marine forecasts should include wind, weather, and wave elements.

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)

https://www.nws.noaa.gov/directives/010/401k/Exhibit_4-1.pdf

An example of a narrative Spot Forecast can be found here:

https://www.nws.noaa.gov/directives/010/401k/FWS%20Spot%20Forecast.pdf

An example of a tabular Spot Forecast can be found here:

https://www.nws.noaa.gov/directives/010/401k/FWS%20Spot%20Forecast%20point%20format.pdf

A copy of the manual Spot Forecast Form D can be found here:

https://www.nws.noaa.gov/directives/010/401k/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. Written forecast updates will be documented through the spot forecast request page. Verbal forecast updates will be documented in the operational shift log. 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.

4.4.1 Critical updates. Spot forecasts will be updated when extreme fire behavior is expected. These circumstances should include consideration of various factors. Example factors include the

severity and changeability of the ongoing or expected fire weather conditions and the viability of the current, valid spot forecast. The primary mechanisms for informing users of spot forecast updates includes both a written update to the forecast (specifying the start and end times of any updated and critical forecast conditions). Also, confirmation through verbal communication of the receipt of written update by the dispatch office or individual listed on the spot form as the user contact point.

If time is of the essence and responder safety is at risk, a forecaster can choose to provide an immediate verbal update to the spot forecast requestor and/or servicing dispatch center.

4.4.2 General updates. Upon request from land management personnel, the appropriate WFO will update the forecast. Spot forecasts may also be updated when the forecaster deems the current forecast does not adequately represent current or expected weather conditions. Updated forecasts will be disseminated to the original spot forecast requesting agency, verbally or in writing.

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. WFOs will use the GFE 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 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 FWF product. Some parameters, as noted, are optional.

a. Headlines. A product headline is required when RFWs 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 RFW 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 also use the standard NWS format of an ellipsis (…) 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% Probability of Precipitation (POPs). This designation keeps the qualifier consistent with Lightning Activity Level (LAL) and thunderstorm coverage from the NFDRS.

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

f. Maximum or Minimum relative humidity (RH) and optional 24-hour RH trend. Minimum RH should be forecast during the daytime and the maximum RH during the nighttime. The range of the RH 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, or 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 derived from the local surface wind grid which approximates the 20 foot, 10 minute average. Other sub-descriptors can be added such as slope/valley, ridge top, AM/PM, or other local formatter options. Use the 8-point compass for the wind direction, or in complex terrain, indicate slope or valley oriented wind direction (upslope/down valley, 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, 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.

https://www.nws.noaa.gov/directives/010/401k/Exhibit_5-1.pdf

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

http://weather.gov/directives/010/401j/Exhibit_5-2.pdf

An example of a narrative Fire Weather Forecast can be found here:

https://www.nws.noaa.gov/directives/010/401k/FWF%20narrative.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.

https://www.nws.noaa.gov/directives/010/401k/Exhibit_5-3.pdf

An example of a tabular Fire Weather Forecast can be found here:

https://www.nws.noaa.gov/directives/010/401k/FWF%20tabular.pdf

5.4 Updates and Corrections. The FWF will be updated when a Fire Weather Watch or a RFW 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 NFDRS measures wildland fire danger at observation sites throughout the contiguous United States. The NWS role in NFDRS is forecasting weather input which, combined with user input, allows the NFDRS software to predict fire danger indices for seven days. These indices contribute to agency decisions on resource management, firefighter safety, and protection of the public and property. Note that an 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 NFDRS Forecast (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.

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 Fire Weather Observation (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 Remote Automated Weather Station (RAWS) collectives from the Internet.

The Fire Agencies use a combined automated and manual observation issuance system, using what is known as the Nelson model. This results in a new observation type “N” and indicates that the Nelson model was used in determining 1-hour and 10-hour fuel moisture. Though several Nelson model observations are generated, only the final “N” type observation is stored for the 1300 LST observation. Several N-model calculations are performed to generate automated State of Weather (SOW) and Wet Flag. A user can at this point manually edit the SOW and Wet Flag values based on local knowledge. In this case, the observation is recalculated and the type of observation becomes “O” to indicate user editing. The manual editing of SOW and Wet Flag is the key difference, along with automatic availability of the “N” observation type.

6.2.4 Valid Time. NFDRS forecasts are valid 24 hours from the time of the observation (approximately 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 time lag 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

$$
NNNN

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, it may be inferred that a formatting error prevented the forecast values from being accepted.

6.4 Updates and Corrections. FWMs are not typically updated. However, an update for the current day's forecast is possible if issued by 0900 LST.

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 National Interagency Fire Center (NIFC) RAWS depot via email. 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.

A forecast can assist in troubleshooting missing RAWS observations in the observation collective. If there are missing RAWS observations, a troubleshooting flow chat can be found below:

https://www.nws.noaa.gov/directives/010/401k/RAWSTroubleFlowChart.pdf

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 (SMFs) 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 SMF 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 (RFD) 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 National Centers for Environmental Prediction (NCEP) SPC Day 1, Day 2 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. NCEP AWIPS (N-AWIPS), PC and Web based.

10.2.2 Issuance Criteria. The Day 1, Day 2 and Day 3-8 Fire Weather Outlooks are scheduled products. The Day 1 and Day 2 Outlooks are issued twice per day. The Day 3-8 Outlook is issued once per day.

10.2.3 Issuance Time. The Day 1 Outlook is issued at 4:00 AM local time and updated at 17:00 Coordinated Universal Time (UTC) (11:00 AM CST/12:00 PM CDT). The Day 2 Outlook is issued at 10:00UTC (4:00 AM CST/5:00 AM CDT) and updated at 20:00UTC (2:00 PM CST/3:00 PM CDT). The Day 3-8 Outlook is issued at 22:00UTC (4:00 PM CST/5:00 PM CDT).

10.2.4 Valid Time. The outlook period for the initial Day 1 and both Day 2 Outlooks will extend from 12:00 to 12:00 UTC. The outlook period for the update Day 1 Outlook extends from 17:00 to 12:00 UTC. The outlook period for the Day 3-8 Outlook extends from the end of the Day 2 outlook period, through 12:00 UTC on the eighth calendar day after the product issuance time.

10.2.5 Product Expiration Time. At 12:00 UTC tomorrow (Day 1) and at 12:00 UTC the next day (Day 2). The Day 3-8 Outlook expires at 12:00 UTC 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 (1, 2 or 3-8) Fire Weather Outlook.

10.3.4 Content. The Day 1 and Day 2 Outlooks (text and graphic) will highlight:

a. Elevated Fire Weather areas (based on fuel conditions and forecast of a nearly critical combination of winds, relative humidity, and temperatures, designated as a closed area on graphic).

b. Critical Fire Weather Areas (based on fuel conditions and forecast of a critical combination of strong winds, low relative humidity, and warm temperatures, 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. Isolated Dry Thunderstorm areas (based on fuel conditions and isolated cloud-to-ground lightning strikes with generally less than one-tenth inch of rain, a closed scalloped area on graphic). This designation is considered equivalent to an elevated fire weather threat for dry thunderstorm potential.

e. Scattered Dry Thunderstorm areas (based on fuel conditions and scattered-to-numerous cloud-to-ground lightning strikes with generally less than one-tenth of an inch of rain, a closed scalloped area on graphic). This designation is considered equivalent to a critical fire weather threat for dry thunderstorm potential.

The Day 3-8 outlooks (text and graphic) have both a categorical and probabilistic component. The categorical component of the Day 3-8 Fire Weather Outlook will highlight:

a. Critical Fire Weather areas (equivalent to 70% in the probabilistic Day 3-8 Fire Weather Outlook) through Day 8.

b. Scattered Dry Thunderstorm areas (equivalent to 40% in the probabilistic Day 3-8 Fire Weather Outlook) through Day 8.

c. "Predictability too low" defines the case where no Critical Fire Weather or Scattered Dry Thunderstorm areas are forecast, but one or both is possible during the period and it is too uncertain to delineate at the time of issuance.

d. "Potential too low" defines the case where fuel and/or weather conditions indicate a very low threat for a Critical Fire Weather or Scattered Dry Thunderstorm area during the forecast period.

The probabilistic component of the Day 3-8 Fire Weather Outlook will highlight:

a. Probability of Critical Fire Weather through Day 8. Probability thresholds of 40% and 70% are used, with 70% corresponding to a Critical Fire Weather area in the categorical Day 3-8 Fire Weather Outlook.

b. Probability of Dry Thunderstorms through Day 8. Probability thresholds of 10% and 40% are used, with 40% corresponding to a Scattered Dry Thunderstorm area in the categorical Day 3-8 Fire Weather Outlook.

c. "Probability too low" defines the case where the probabilities of Critical Fire Weather and Dry Thunderstorms are below the lowest probability thresholds, either due to the expectation of unfavorable weather and/or fuel conditions, or due to forecast uncertainty at the time of issuance.

10.3.5 Format. The text outlooks should follow the format specified in exhibit 10-1 for the initial Day 1 and Day 2 Outlooks. Exhibits 10-2 and 10-3 provide examples for the update Day 1 and Day 2 and the Day 3-8 Outlook text products. The products are disseminated via NOAAPORT/SBN to AWIPS, NWSTG, and the Web; and can be viewed at http://www.spc.noaa.gov/fire

The text format for the initial Day 1 and Day 2 Outlooks will include:

a. Headlines that highlight all critical and extremely 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 a 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 update Day 1 and Day 2 Outlooks will include:

a. Headlines that highlight all critical and extremely critical fire weather areas.
b. Brief discussion update on any changes needed to the graphic or forecast fire weather conditions for individual fire weather areas.
c. Initial discussion appended below the update discussion.

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

a. Individual fire weather areas with a discussion of the forecast fire weather conditions.

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

https://www.nws.noaa.gov/directives/010/401k/Exhibit_10-1.pdf

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

https://www.nws.noaa.gov/directives/010/401k/Exhibit_10-2.pdf

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

https://www.nws.noaa.gov/directives/010/401k/Exhibit_10-3.pdf

10.4 Updates and Corrections. Updates are scheduled to the Day 1 and Day 2 Outlooks (see issuance times). Day 3-8 Outlooks are not updated or amended. Corrections are sent on an as needed basis.

10.5 AWIPS IDs. The AWIPS Graphic IDs are:

		WMO
Day 1	RBGFW1	PMWE98 KWNS for Day 1 (valid 12 or 17 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 or 17 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)

YYUD33 KWNS	Probability of Day 3 Dry TSTMS
YZUD33 KWNS	Probability of Day 3 Strong W, low RH, Warm T
YYUE34 KWNS	Probability of Day 4 Dry TSTMS
YZUE34 KWNS	Probability of Day 4 Strong W, low RH, Warm T
YYUF35 KWNS	Probability of Day 5 Dry TSTMS
YZUF35 KWNS	Probability of Day 5 Strong W, low RH, Warm T
YYUG36 KWNS	Probability of Day 6 Dry TSTMS
YZUG36 KWNS	Probability of Day 6 Strong W, low RH, Warm T
YYUH37 KWNS	Probability of Day 7 Dry TSTMS
YZUH37 KWNS	Probability of Day 7 Strong W, low RH, Warm T
YYUI38 KWNS	Probability of Day 8 Dry TSTMS
YZUI38 KWNS	Probability of Day 8 Strong W, low RH, Warm T

AWIPS ID	WMO HEADER	Description
KWNSGPHFWA	PMNK98 KWNS	Redbook Graphic Day 3 Dry TSTM/LowRH/Wind
KWNSGPHFWB	PMNM98 KWNS	Redbook Graphic Day 4 Dry TSTM/LowRH/Wind TSTM/LowRH/Wind
KWNSGPHFWC	PMNO98 KWNS	Redbook Graphic Day 5 Dry TSTM/LowRH/Wind TSTM/LowRH/Wind
KWNSGPHFWD	PMNQ98 KWNS	Redbook Graphic Day 6 Dry TSTM/LowRH/Wind TSTM/LowRH/Wind
KWNSGPHFWE	PMNS98 KWNS	Redbook Graphic Day 7 Dry TSTM/LowRH/Wind TSTM/LowRH/Wind
KWNSGPHFWF	PMNT98 KWNS	Redbook Graphic Day 8 Dry TSTM/LowRH/Wind TSTM/LowRH/Wind

11. Fire Weather Point Forecast Matrix.

A Fire Weather Point Forecast Matrix is a local or national web service providing guidance information. It is available as a national service from the national fire weather web page. It can also be optionally defined as a fixed point within a County Warning Area as agreed in the local/state AOP.

12. Non-Weather Messages Related to Fire Support.

The provision of Warnings for fires on the ground is considered a non-weather warning event

and therefore, does not fall within the purview of NWS operations. Local Weather Forecast Offices must work closely with local land management and emergency management partners to define instances where the NWS may assist in disseminating messages alerting emergency managers or the public for active fires. These messages may take the form of Fire Warnings, Civil Emergency Messages or other products clearly defined in state emergency operation plans. Policy governing non-weather warning products is found in NWSI 10-518, specifically section 3.

Fire Warnings and Civil Emergency Messages that provide information for spreading wildfires are considered "pass-through" products. In these cases, the appropriate safety messages and calls to action are defined and written by external partner agencies on a case-by-case basis. It is not within the NWS mission to monitor, detect and unilaterally warn for new or spreading fires. This policy does not prevent partnering with users agencies in detection and warnings for fire on the landscape.

Annual Operating Plans for fire weather must contain policy with a clear distinction made between hot spot detection assistance and warning services. No pre-season agreement for the purpose of issuing stand-alone Fire Warnings should be established. However, it is still important that WFOs provide detection and warning products for active fires (Fire Warnings and Civil Emergency Messages for fire) under the explicit auspices of external (non-NWS) fire control or emergency management authorities.

13. Other Local and/or Regional Decision Support Services as Outlined in the Weather Ready Nation Strategic Plan.

The NWS offers evolving services to users, prompted by emerging guidance found in the Weather Ready Nation Strategic Plan. In accordance with this plan, WFOs may use DOC-approved social media tools to engage the public and our partners in conversation around important weather, water, and climate issues. At times, fire weather concerns may be addressed through these venues, in addition to other already established means. WFOs may also use web graphics, emails and webinars to assist in providing fire weather decision support services to fire weather partners.