ROCKY MOUNTAIN AREA FIRE WEATHER ANNUAL OPERATING PLAN

2011

Colorado
Wyoming
South Dakota
Nebraska
Kansas

ROCKY MOUNTAIN AREA FIRE WEATHER ANNUAL OPERATING PLAN
2011

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Rocky Mountain Area Interagency Fire Weather Operating Plan – 2011

I. INTRODUCTION

This document serves as the Interagency Fire Weather Annual Operating Plan (AOP) for the Rocky Mountain Geographic Area. The general relationship between NWS and the interagency fire management community is set forth in the National Interagency Agreement for Meteorological Services. The AOP provides specific procedural and policy information about the responsibilities of both NWS offices and land management offices regarding meteorological services provided to the fire management community in the Rocky Mountain Area, as contained within the umbrella of the National Agreement.

References will include:

- National Weather Service Directives NWSI 10-4: Fire Weather Services
- Interagency Agreement for Meteorological Services (National MOA or National Agreement)
- Rocky Mountain Area and National Mobilization Guides

II. SIGNIFICANT CHANGES SINCE LAST YEAR

A. New Predictive Services Fire Potential Zones for the entire Rocky Mountain Area
B. Significant Fire Potential Forecast Maps will be issued out to 7 days.
C. Nezette Rydell is the new Meteorologist-in-Charge at the Boulder NWS Office.
D. Boulder issues a morning Fire Weather Planning Forecast daily, year-round, by 0700
E. Grassland Fire Danger Index (GFDI) will be tested in eastern South Dakota in 2011
F. Cheyenne NWS Office will not have a certified IMET in 2011
G. New fire weather zones will be implemented in western Colorado June 7, 2011 (See Map Page 54).

III. SERVICE AREA AND ORGANIZATIONAL DIRECTORY

A. Fire weather services in the Rocky Mountain Area are provided by the NWS forecast offices, RMA

Predictive Services, and States listed below

Boulder, CO	Riverton, WY	North Platte, NE
Pueblo, CO	Rapid City, SD	Goodland, KS
Grand Junction, CO	Billings, MT	Aberdeen, SD
Cheyenne, WY	Sioux Falls, SD	Hastings, NE
Omaha, NE	Wichita, KS	Topeka, KS
Dodge City, KS	Pleasant Hill, MO	Springfield, MO
State of South Dakota	RMCC, Lakewood, CO	

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IV. NATIONAL WEATHER SERVICE SERVICES AND RESPONSIBILITIES

A. Basic Services – The following constitute the current operational Fire Weather Planning Forecast products provided by NWS offices in the RMA. Significant changes to these forecast services or deployment of new operational forecast products and services will be coordinated through Rocky Mountain Area Predictive Services (Reference NWSI 10-403) and local users within the County Warning Forecast Area (CWFA) of the NWS office that would like to make the change. Any non-operational forecast products will be clearly labeled as "Experimental" or "Prototype". Basic meteorological services include:

1. Fire Weather Planning Forecasts (FWF)

All NWS offices serving the Rocky Mountain Area issue routine Fire Weather Planning Forecasts. The FWF is a zone-type product used by land management personnel primarily for input in decision-making related to pre-suppression and other planning (NWSI 10-401) Unless otherwise noted, the format of the FWF will conform to NWSI 10-401. **Note: User should review 2011 NWS Zone Map located at the end of the AOP to determine NWS office zone responsibility.**

Standard Issuance Times and Dates –

Colorado:
Start/Stop Dates: Boulder NWS office will issue narrative Fire Weather Planning Forecasts once daily year-round by 0700, and twice daily by 0700 and 1600 from around April 1 through around October 31.

Grand Junction- Once daily starting *around* April 1 or first Monday of April through April 30 by 5:00 p.m. Twice daily by 800 a.m. and 5:00 p.m. local time from *around* May 1 through *around* October 31. Beginning and ending dates are general guidelines to incorporate the majority of prescribed burn and wildfire season, and are flexible.

Pueblo NWS will issue the narrative Fire Weather Planning Forecasts year-round by 0500 and 1600 each day.

Wyoming:
Start/Stop Dates: Twice daily by 7:00 a.m. and 3:00 p.m. local time from *around* May 1 through *around* October 31. Beginning and ending dates are general guidelines to incorporate the majority of prescribed burn and wildfire season, and are flexible. **Exception: Cheyenne will also issue once per day by 7:00 a.m. from *around* November 1 through *around* April 30.**

South Dakota:

Rapid City South Dakota Start/Stop Dates: Once daily *around* March 15 through October 31 by 8:00 a.m. twice daily *around* July 1 through *around* September 30 by 8:00 a.m. and 5:00 p.m. Beginning and ending dates are general guidelines to incorporate the majority of prescribed burn and wildfire season, and are flexible.

Sioux Falls South Dakota Start/Stop Dates:
Twice daily from April 1 through May 31, and from August 15 through October 31 by 7:00 am and 4:00 pm. Once daily from June 1 through August 14 by 7:00 am. Beginning and ending dates are general guidelines to incorporate the majority of prescribed burn and wildfire season, and are flexible.

Aberdeen South Dakota Start/Stop Dates: Twice daily *around* April 1 through October 31 by 8:00 a.m. and 4:00 p.m. Beginning and ending dates are general guidelines to incorporate the majority of prescribed burn and wildfire season, and are flexible.

Nebraska:
North Platte Nebraska Start/Stop Dates: Twice daily *around* April 1 through October 31 by 8:00 a.m. and 4:00 p.m. Beginning and ending dates are general guidelines to incorporate the majority of prescribed burn and wildfire season, and are flexible.

Hastings Nebraska Start/Stop Dates: The Fire Weather Planning Forecast (FWF) will be issued by 0600 year-round.

Omaha Nebraska Start/Stop Dates: The Fire Weather Planning Forecast (FWF) will be issued by 0600 year-round.

Kansas:
Dodge City, Goodland, Topeka, Wichita Kansas Start/Stop Dates: The Fire Weather Planning Forecast (FWF) will be issued by 0600 year-round.

Pleasant Hill Missouri Start/Stop Dates: The Fire Weather Planning Forecast (FWF) will be issued twice daily by 0600 and 1630 year-round.

Note: Some offices in the Rocky Mountain Area provide Fire Weather Planning Forecasts outside these dates, based on local needs. Please see individual office information for FWF services outside these core dates.

Issuance Outside Regular Times and Dates-
NWS offices will issue FWF's for their CWFA outside regular times and dates when:

A Fire Weather Watch or Red Flag Warning has been issued from the servicing NWS office. ***Note:*** *Offices may issue the FWF for only those zones in the watch or warning area.*

Large fire activity is occurring (100 acres in timber, 300 acres in grass/sage) within the servicing office CWFA and is expected to last more than 24 hours (less than 100% contained), ***Note***: *In this case, Land Agency Meteorologists or local fire managers can request an earlier start date, or an extension to the stop date. Also, offices may issue an FWF for a specific zone or zones in lieu of the entire forecast area if weather forecast trends*

indicate that significant weather changes will reduce fire potential within 24 hours, or current conditions (fuels, weather, high elevation snowpack) do not support elevated fire potential.

Forecast Updates- The FWF will be updated when: **1)** A Fire Weather Watch or a Red Flag Warning is issued or updated, **2)** The current forecast does not depict the NWS forecaster's vision of current or predicted weather conditions, or **3)** A significant typographical/format error is detected. ***Note***: ***The NWS office will notify the local dispatch offices when the FWF is updated*.**

Access – Forecasts are transmitted automatically through the NWS AWIPS computer system and made available within minutes via WIMS, the Rocky Mountain Area Predictive Services web site, and the web sites of the various NWS offices that serve the Rocky Mountain Area. **These web site addresses can be found under section III, Service Area and Organizational Directory.**

Content and Format – The FWF will conform to the "narrative" or "tabular" format, per NWSI 10-401. Morning forecasts will focus on the following 36 hours and afternoon forecasts on the following 48 hours, with general extended outlooks in both cases out to at least 5 days and no more than 10 days.

Each FWF will begin with pertinent headlines and a non-technical weather discussion. Six-hour increments or greater will be used for forecast weather elements for the periods out to 48 hours. The extended forecast periods beyond 48 hours will contain the most significant weather within each 12 hour (in the case of a night period) or 24 hour period. Headlines are required for Red Flag Warnings and Fire Weather Watches, but may be included for other significant situations including air stagnation, record heat, severe weather potential, significant weather pattern changes, etc.

Forecasts for the first 36 or 48 hours will contain the following elements for each zone or zone grouping, listed in the order they will appear. Some of the elements are optional and will be included in the FWF based on user needs.

1. Headline(s) as appropriate
2. Sky/weather
3. Temperature (24 hour trends optional)
4. Humidity (24 hour trends optional)
5. Wind - 20 foot RAWS standard (slope/valley)
6. Wind – Ridgetop (as appropriate)
7. Chance of Wetting Rain (Optional)
8. Lightning Activity Level (LAL)
9. Haines Index
10. Mixing Level (Optional)
11. Transport Winds (Optional)
12. Ventilation (kt-ft) and Ventilation/Dispersion Category (Optional)
13. Extended outlook to at least day 5 (or at end of product)

Format examples and descriptions of forecast parameters can be found in the

appendices.

2. Site-specific (Spot) Forecasts

Criteria - Spot forecasts are site-specific forecast products issued for wildfires, prescribed burns, aerial spraying, HAZMAT incidents, search and rescue etc., and are available upon request at any time of day, week or season. WFO's will provide site-specific (spot) forecast services upon request of any qualified user agency to support land management activities associated with wildland fire (including prescribed burning). Providing non-federal, non-wildfire spots will be restricted to purposes directly related to personnel, equipment, fuels reduction projects (prescribed burns or spraying) for public safety, or interagency protection agreements providing such involvement).

A spot forecast will be assigned high priority by the receiving NWS office. Normally, a request should be provided to the requestor in less than 60 minutes of the receipt of the request. During heavy spot loads 60 minutes may be exceeded. **Note: It is recommended that requestor call after submitting the spot forecast.**

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

Spot forecasts will not be updated for changes within the third period of the forecast, because at this point spot forecasts will be 24 hours old, or nearly so, and a new spot forecast request should be submitted.

Priority for the update of spot forecasts is as follows:

- Wildfires
- Prescribed burns or Wildland Fire Use (WFU)
- Spot forecasts for non-critical operations, aerial spraying, etc

Site-specific forecasts for Wildfires managed for resource benefit (those fires with little or no suppression efforts). Initially, spot forecasts will be issued under the same guidelines as spot forecasts for a declared wildfire. The requesting agency should provide the local NWS office with an idea of how long the fire is expected to burn, and what weather conditions are critical to the prescription. With the initial spot forecast request, the requesting agency should set up a schedule for providing fire line weather observations to the NWS and requesting follow-on spot forecasts for the duration of the fire. The requesting agency is encouraged to also request more detailed long-range weather forecasts to aid in the planning and control efforts. Be sure to discuss these needs with the fire weather forecaster.

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

Spot forecast requests and updates will be responded to according to the instructions of the requesting agency. Web based spot forecast requests (from NWS web sites) are preferred, and will generally result in more efficient and timely feedback. The WFO will contact the local user by phone whenever the spot forecast is updated.

Content and Format – Spot forecasts typically contain the following elements, unless otherwise specified upon request:

1. Headline (required when Red Flag Warning / Fire Weather Watch)
2. Discussion
3. Sky/weather (including chance of rain)
4. Temperature
5. Relative humidity
6. 20 foot winds

Optional elements (including transport winds, mixing depth, smoke dispersal, LAL, Haines index, etc.) may be included upon request.

The valid time will be determined at the time of the request. Most spots contain three periods, usually "TODAY", "TONIGHT", and "NEXT DAY", e.g., "TODAY", "TONIGHT", and "THURSDAY".

Procedures – Internet-based NWS Spot is the standards for requesting and retrieving spot forecasts and should be used when available. They are accessible via web sites of the various NWS offices that serve the Rocky Mountain Area. **Links to the web based spot program can be found under Section IV-D, individual forecast office information.** In times when internet access is hindered or not possible, spot forecasts may be requested and disseminated via phone or fax using the backup spot forecast request form found in the appendices. In most cases, spot forecasts should be available in less than 60 minutes from the time the appropriate NWS office receives the request. **Note: It is recommended that requestor call after submitting the spot forecast.**

The requesting agency will provide information about the location, topography, fuel type(s), elevation(s), size, ignition time, contact name(s), and telephone number(s) of the responsible land management personnel.

Weather Observations- Quality representative weather observation(s) at, or within close proximity of the project should be made available to the responsible WFO along with the request for a spot forecast(s). At the beginning of a project, a nearby RAWS site may be used for the initial spot request if it is at a similar elevation, aspect, and sheltering, and has been shown to be very representative of the actual project. The requesting agency should provide the fire weather meteorologist with as many observations from the project as possible to help provide detail in the spot forecasts which will aid in fire behavior predictions. The best observations to send are those that show the maximum temperature, minimum humidity, and character of the winds from the previous afternoon. Additionally, a morning observation depicting the humidity recovery and downslope/downvalley wind is recommended. **Failing to provide on-site complete observations, may result in a less accurate forecast.**

However, there are special circumstances where fire personnel are unable to provide on-site weather observation. Land Agencies should communicate to the responsible WFO when on-site weather observations are not possible.

Certain prescribed burns will be considered high risk in Colorado for significant smoke impacts, as determined by the Standard Permit Condition Worksheets for Prescribed Fire Projects, which is part of the Colorado permit process. These burns could either be Category III or Category IV burns, and REQUIRE detailed observations at least 3 days prior to burn as well as feedback. Consult with the Fire Weather Program Manager at the appropriate WFO well in advance of the scheduled burn date for further information.

Spot Forecast Feedback – Timely feedback on forecast performance (both positive and negative) is requested, and should be given whenever possible by the requesting agency.

3. Red Flag Program

The Red Flag program is a means by which the weather forecaster informs the land management agencies of the combination of dry fuels and critical weather conditions that support extreme fire behavior. Identification of Red Flag events is a primary responsibility of the forecaster producing the Fire Weather Planning Forecasts.

A **Red Flag Warning** informs agencies of the imminent or actual occurrence of Red Flag conditions. A Red Flag Warning will be issued when there is high confidence that Red Flag criteria will be met within the next 24 hours, or when those criteria are already being met or exceeded. A warning may be issued for all, or portions of a fire weather zone or region. Zones impacted by the event will be listed within the RFW.

A **Fire Weather Watch** alerts agencies to the high potential for development of a Red Flag event in the 12-96 hours. **A watch may only be issued (or continued) in the first 12-hour time period for dry thunderstorm events**. The watch may be issued for all, or portions of a fire weather zone or region. Zones impacted by the event will be listed within the RFW.

Criteria – The criteria for issuing of Fire Weather Watches and Red Flag Warnings in the Rocky Mountain Area are a combination of weather and fuels conditions (as determined by fire management) for any 3 hours or more in a 12 hour period. These criteria are defined as the following:

Fuel Criteria: -Fuel characteristics are favorable for large fire growth as determined by field level fire management using the Red Flag Fuels Support Page **(Link Below)**.

http://www.blm.gov/colorado/rmafwx/fuel_status/public/index.php

It is the responsibility of field level fire management personnel to update the Red Flag Support Page every Monday by noon during typical NWS operations outlined in the AOP. Fuel status will be updated more often if fuel condition warrants. The fuel condition on the red flag support page will default to **"Yes"** if the assigned field level FMO or Fuel Specialist for the specific fire weather zone fails to update the fuel condition within a 7-day period. Additionally, the local NWS office has the ***option*** to contact the field level FMO, Fuel Specialist or agency

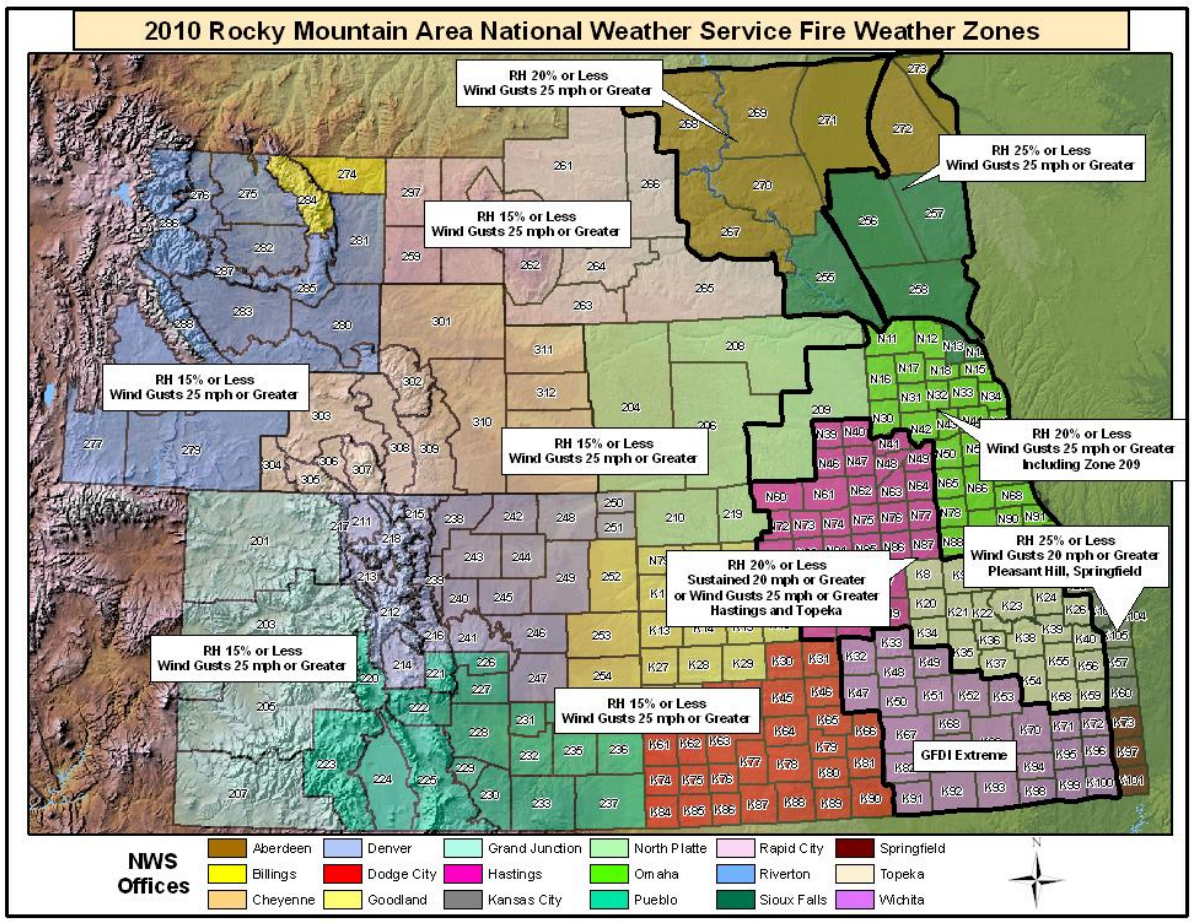
representative responsible for fuel input when their respective fire weather zones have not been updated, **or** use the **"Yes"** default as described above. Other tools or processes can also be utilized to determine fuel conditions (See below).

If the Red Flag Fuel Support Page has not been updated or is determined to be ineffective for NWS field offices, the NWS can utilize other tools to determine fuel conditions during the red flag decision process. These other tools include: 1) Fire Danger Indices as determined by NFDRS observations (Very High to Extreme); 2) Standardized fire season dates; 3) Direct phone conversation to local fire managers or dispatch; 4) Grassland Fire Danger Index (GFDI); 5) or other tools derived by local NWS offices and fire managers.

RMA Predictive Services will provide IT support including, logins and passwords, and internet support for the online fuel status program. RMCG representatives will contact RMA Predictive Services when positions are vacated. RMCG representatives will provide updated contact information for replacement personnel.

RMA Predictive Services will provide the local NWS office with a list of contacts assigned to their fire weather zones and responsible for updating the fuel status program.

<u>Wind and Relative Humidity Criteria</u>:



<u>Dry Thunderstorms Criteria</u>: A fire weather watch or red flag warning will be issued for dry

thunderstorm coverage of 15% or more, constituting an LAL of 6.

Issuing Fire Weather Watches and Red Flag Warning-A fire weather watch or red flag warning will be issued when fuel characteristics are **"Yes"** as determined and relayed by land agencies using the fuel status web page, and one of the weather criteria **(as stated under 2 and 3 above)** is met.

Additional Red Flag Factors:- In addition to the basic criteria above, a combination of other elements may result in Red Flag conditions. Haines Index of 5 or 6, wind shifts associated with cold frontal passages, significant wind shifts, microburst winds, first significant lightning (wet or dry, 15% coverage of thunderstorms or more) event after an extended hot and dry period, and poor RH recovery.

***Note*:** *The decision to issue a Fire Weather Watch or Red Flag Warning can be difficult and complicated at times. Coordination with neighboring NWS offices and Land Agencies will play a vital role in the final decision.*

Product Format and Contents – An RFW product will be issued whenever a Fire Weather Watch or Red Flag Warning is issued, updated, extended, or canceled. The RFW message will include:

1. A standard UGC header coding, as mandated within the NWSI 10-401, including the fire weather zone number and expiration time
2. A headline, as mandated within NWSI 10-401
3. A short, but detailed discussion on the causes and nature of event, including weather element values.

Procedures and Access - When Fire Weather Watches and Red Flag Warnings are issued, they will be headlined in spot forecasts, the general Fire Weather Planning Forecast (FWF) and appropriate zone sections within the FWF. The headline will be in the same descriptive format as on the RFW product itself. The FWF will be updated if a Fire Weather Watch or Red Flag Warning is issued, canceled, or expires. Red Flag Warnings and Fire Weather Watches will remain in effect through the expiration time noted in the forecast, or until canceled or extended.

Red Flag Warnings and Fire Weather Watches are available within minutes of issuance via WIMS, the Rocky Mountain Area Predictive Services page and the web sites of the various NWS offices that serve the Rocky Mountain Area. These links can be found in the office directory (Section III) of this document.

Notification – When a Fire Weather Watch or Red Flag Warning is issued or updated (non-routine), NWS offices will verbally notify affected zone dispatch centers that fall under the watch or warning area. Also, the NWS will verbally notify the Rocky Mountain Area Coordination Center at (303)445-4300.

4. NFDRS Forecasts -

The National Weather Service provides 24-hour weather forecasts for NFDRS that allow the NFDRS software to predict the next day's fire danger indices.

Observational Requirements –NFDRS observations must be complete and available in WIMS by 1350 LST (1450 LDT) local time to be received by NWS in time to produce a forecast. NFDRS stations that do not have valid observations in WIMS on time will not have next day fire danger indices available.

Content and Format – Complies with NWSI 10-401 and is outlined in Appendix A for reference. The actual NWS NDFRS forecast product is used only by WIMS and is not viewed directly by fire management.

Procedures – For every NFDRS observation received from WIMS at the 1350 local time collective, forecast weather parameters for 1300 local time the next day will be produced.

5. **Participation in Interagency Groups** -
NWS offices and land management providing service within the Rocky Mountain Area should provide representation at the regional AOP meeting held annually. Proxy representation is acceptable. NWS offices should host at least one meeting each year with local fire management units, or visit local fire management units once per year.

B. Special Services – Special meteorological services include mobile unit and other on-site meteorological services, participation in user agency training activities, weather observer training, and weather observation station visits requested by user agencies, as time and office staffing permits. The services are usually provided away from the office or on overtime. As stated in the Interagency Agreement for Meteorological Services among the Interagency Wildland Fire Agencies and the National Weather Service, the user agencies will pay overtime, travel, and per diem costs for these special services. The NWS and Land Agencies will provide and maintain a cadre of trained IMETs to provide on-site incident meteorological support.

C. Forecaster Training - The NWS recognizes the need for specialized training in fire weather meteorology for forecasters. All NWS meteorologist producing fire weather products will have met the requirements set forth in NWSI 10-405.

D. Individual Forecast Office Information

1. **North Central and Northeast Colorado – Boulder, CO** Unless otherwise mentioned, it is to be assumed that services provided by NWS Boulder for units in northeast Colorado will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Boulder, CO is responsible for providing Fire Weather support for north central and northeast Colorado. The area of responsibility covers Fire Weather Planning Forecast zones 211 through 218, and 238 through 251. The Boulder office is staffed with 13 meteorologists trained in fire weather forecasting, two of which are designated as Incident Meteorologists. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts. A Fire Weather Forecaster will be on duty 24 hours a day…seven days a week year round.

2011 changes:

Nezette Rydell is the new Meteorologist-in-Charge
Boulder issues a morning Fire Weather Planning Forecast daily, year-round, by 0700
The Boulder office has one certified IMET.

Fire Weather Planning Forecasts (FWF)
The fire weather planning forecast (FWF) will be issued daily, year-round, by 0700. The afternoon forecast (FWF) will be issued by 1600 from April 1 through October 31. The dates of the afternoon forecast are flexible as conditions warrant at the request of the users. In addition to the required elements noted on page 10, the following elements are included: 24 hour temperature and humidity trends, ridgetop winds, chance of wetting rain, mixing height, transport wind, and ventilation/dispersion category.

Spot Forecasts
The Boulder office will prepare spot weather forecasts for prescribed burns and wildfires upon request for locations within the office's county warning area (CWA). The primary means of requesting and disseminating spot forecasts is the NWSSpot Internet-based spot request and reply program. During your follow-up telephone call to ensure receipt, tell the forecaster that your reply is for a wildfire. If you have not received your spot after 60 minutes, call the WFO to check on the status of your spot or to determine if there has been a communications system failure. The NWS strongly encourages land agencies to use the "REMARKS" section within NWSSpot to provide feedback with all follow-up spot requests. NWSSpot for Boulder can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=bou
When internet or computer capabilities are not available, fax, phone or telefax will be used to request a spot forecast.

When requesting a non-wildfire spot forecast, it is STRONGLY SUGGESTED that requests during the fire season NOT be made between 1100 and 1500. Requests made during this time will occur during the key preparation period for the afternoon Fire Weather Planning Forecasts and will result in a much longer delay between the request and receipt of a spot forecast.

Certain prescribed burns will be considered high risk for significant smoke impacts, as determined by the Standard Permit Condition Worksheets for Prescribed Fire Projects which is part of the Colorado permit process. These burns could either be Category III or Category IV burns, and require detailed observations at least 3 days prior to burn as well as feedback. Consult with the Fire Weather Program Manager well in advance of the scheduled burn date for further information.

Red Flag Warnings / Fire Weather Watches
Red Flag Warnings and Fire Weather Watches will be issued as required for Colorado narrative zones 211 through 218, and 238 through 251 after coordination and collaboration with customers and adjacent NWS offices.

Smoke Management Forecasts (SMF)
In lieu of a Smoke Management Forecast, the forecast elements of transport winds, mixing heights and ventilation as well as a brief discussion of airmass stability and any meteorological

parameters that may affect smoke dispersal have been included in the routine fire weather planning forecast (FWF).

NFDRS Forecasts

This product is issued by 1515 from April 1 through October 31 and is a separate product from the afternoon FWF. The forecasts are used as input to the National Fire Danger Rating System (NFDRS) through WIMS to compute fire danger indices.

DETAILED HOURLY TABULAR FORECAST

WFO Boulder maintains a detailed hourly tabular forecast for user-selected locations. The tabular forecast includes not only the normal forecast parameters, but the following parameters tailored specifically to the fire weather community:

Hourly relative humidity, Maximum and Minimum relative humidity, Haines index, lightning activity levels (LAL), 10,000 foot wind speed and direction, chance of wetting rain, mixing height, transport wind, ventilation rate and adjective rating.

The tabular forecast can be found at the following url:
www.crh.noaa.gov/bou/firewx/fwpfm/fwpfm.php?wfo=bou/bou/firewx/fire_mainmap.php

To retrieve the tabular forecast, enter a latitude and longitude in either decimal or deg min sec. The forecast can also be generated by simply selecting a desired location on the map.

Note: The tabular forecast should be used for planning purposes only, and is not meant to replace a spot weather forecast.

IMET Services

The Boulder office has one IMET available for dispatch to major forest fires and projects.

Training

There are three fire meteorologists available to handle fire weather training requests from north central/northeast Colorado customers. Training requests outside the area will be handled on case-by-case bases. All requests should be forwarded in writing to the office as early as possible to help ensure the request can be satisfied. Every attempt will be made to meet training requests. However, staffing limitations will need to be considered, and consequently, each request will be reviewed on a case by case basis.

Additional Information

The Boulder office maintains a Fire Weather Page on its web site home page. This page contains links to the FWF, RFW, Spot Forecasts, SMF, Public Fire Danger Statements, RAWS observations, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative FWF. Simply click on the map within the region of interest.

To go directly to the Boulder fire weather web site, use the following url:
http://www.crh.noaa.gov/bou/awebphp/fireindx.php

BACK-UP

The primary service backup for NWS Boulder is NWS Pueblo and the secondary backup is NWS Grand Junction (Please See Service Area and Organizational Directory). The servicing NWS office will notify their local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

2. South Central and Southeast Colorado - Pueblo, CO

Unless otherwise mentioned, it is to be assumed that services provided by NWS Pueblo will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information

The National Weather Service office in Pueblo provides fire weather support for most of south central and southeast Colorado. This area covers fire weather zones 220 through 237. The Pueblo office has a staff of 13 meteorologists, two of which are designated as the Incident Meteorologist (IMET). All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts. A Fire Weather Forecaster will be on duty 24 hours a day…seven days a week year round.

2011 changes:

None

Digital Web-Based Products

WFO Pueblo continues to add services to the fire weather community through their web site **weather.gov/pub**. Information is derived from the Digital Forecast Database to develop graphical and digital products that are tailored to fire weather customers.

Graphical fire weather and smoke management parameters are available by clicking on Fire Weather, in the left hand margin under Forecasts. This link will take you to the Fire Weather page where you will find links to our new graphical and digital products. These products are currently listed as experimental but they are part of our mainstream forecast process, and will be updated along with our Fire Weather Zones forecasts and other forecast products.

Information available in graphical format includes all of the normal forecast parameters, and in addition includes the following parameters that are tailored to the fire weather community:

Max and Min Relative Humidity
Mixing Height
Haines Index
10,000 ft Winds
Transport Winds
Ventilation Rate
Lightning Activity Level
8-14 Day Temperature and Precipitation Outlook
Critical Fire Weather Potential Graphic

Digital text information is available for all RAWS sites by clicking on the link to the **Experimental Fire Weather Point Forecast Matrix (PFM).** This link will take you to a list of RAWS sites that you can click on to get a digital forecast with all fire weather forecast parameters.

The NWS would appreciate your comments and opinions about these new, experimental, products. Each page has a link to a survey that will be sent to the National Weather Service Office in Pueblo. These surveys are anonymous and are designed to help us improve our services to the fire weather community.

Fire Weather Planning Forecasts (FWF)
Narrative Fire Weather Planning Forecasts will be issued by 0500 and 1600 each day, year-round.

Spot Forecasts
The Pueblo office will prepare spot weather forecasts for prescribed burns and wildfires as requested for locations within the office's fire weather service area. The primary means of requesting and disseminating spot forecasts will be through the NWS Spot Internet based forecast/reply program. NWS Spot for Pueblo can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=pub

When internet or computer capabilities are not available, fax, phone or telefax will be used to request a spot forecast.

When requesting a non-wildfire spot forecast, it is STRONGLY SUGGESTED that requests during the fire season NOT be made between 1100 and 1500. Requests made during this time will occur during the key preparation period for the afternoon Fire Weather Planning Forecasts and will result in a much longer delay between the request and receipt of a spot forecast.

To ensure receipt by the fire weather forecaster, the requester should call the NWS after submitting each spot request. During this follow-up telephone call, please be sure to tell the forecaster if the request is for a wildfire so it can receive the proper priority.

Certain prescribed burns will be considered high risk for significant smoke impacts, as determined by the Smoke Risk Rating Worksheet for Prescribed Fire Projects which is part of the Colorado Memorandum of Understanding (MOU). These burns could either be Category III or Category IV burns, and requires detailed observations at least 3 days prior to burn as well as feedback. Consult with the fire weather program leader well in advance of the scheduled burn date for further information.

Red Flag Warnings / Fire Weather Watches
Red Flag Warnings and Fire Weather Watches will be issued as required for Colorado narrative zones 220 through 237 after coordination and collaboration with customers and adjacent NWS offices.

Smoke Management Forecasts (SMF)

The Smoke Management Forecast includes a brief discussion of airmass stability and any meteorological parameter that may affect smoke dispersal. The forecast also includes a forecast of transport winds, mixing heights and a ventilation forecast. The smoke management parameters and discussion are included within the Fire Weather Planning Forecast (FWF).

NFDRS Forecasts
This product is issued at 1515 during the fire season and is a separate product from the afternoon forecast. The forecasts are used as input to the National Fire Danger Rating System (NFDRS) through WIMS to compute fire danger indices.

IMET Services
The Pueblo office has 2 IMETs available for dispatch to major forest fires and projects.

Training Services
The fire weather program leader/IMET or assistant fire weather program leader, may be available to handle fire weather training requests from south central/southeast Colorado customers. Training requests outside the area will be handled on case-by-case bases. Refer all training requests or technical support questions to the Program Leader or his Assistant.

Additional Information
The Pueblo office maintains a Fire Weather Page on its web site home page. This page contains links to forecasts (FWF), RFW, Spot Forecasts, RAWS observations, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative FWFs. Simply click on the map within the region of interest. To go directly to the Pueblo fire weather web site, use the following url:

http://weather.gov/pub?n=/fire/index.php

BACK-UP
The primary service backup for NWS Pueblo is NWS Boulder and the secondary backup is NWS Goodland (Please See Service Area and Organizational Directory). The servicing NWS office will notify there local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

3. Western Colorado – Grand Junction, CO

Unless otherwise mentioned, it is to be assumed that services provided by NWS Grand Junction will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The Grand Junction Weather Forecast Office (WFO) provides fire weather support for western Colorado and eastern Utah. Its area of responsibility covers Colorado fire weather zones 201, 203, 205, and 207. Refer to the map at the end of this section. The Grand Junction office is staffed with 10 meteorologists trained in fire weather forecasting, two of which are certified Incident Meteorologists (IMET). All forecasters have been trained to produce all the routine fire weather products, warnings, watches, and spot forecasts.

2011 changes. At publication time for this AOP, the boundaries for fire weather zones were in the process of being changed to meet land management agency needs. Information about the boundary changes and new fire weather zones created will be distributed when this process is complete later this fire season.

Fire Weather Planning Forecasts

The fire weather planning forecast (FWF) will be issued by 0800 and 1600 during the designated fire season.

Spot Forecasts

The Grand Junction office prepares spot weather forecasts for prescribed burns and wildfires as requested for locations within the office's county warning area (CWA). There is one exception: WFO Grand Junction provides spot forecasts for that part of the Gunnison National Forest within northwest Saguache County, as per an agreement with the Gunnison National forest and the Grand Junction and Pueblo WFOs.

The primary means of requesting and disseminating spot forecasts is the NWSSpot Internet-based spot request and reply program. **To ensure receipt by the fire weather forecaster, the requester should call the NWS after submitting each spot request**. If you have not indicated on the spot request, during your follow-up telephone, please tell the forecaster that your request is for a wildfire or a prescribed burn, so that your request can receive the proper priority. This call to the WFO will also allow the fire weather forecaster to ask any questions he/she might have, and inform you if multiple spot requests may delay completing your forecast. WFO Grand Junction will show the same courtesy by calling the requesting agency after each completed spot forecast is transmitted.

The NWS strongly encourages land agencies to use the "REMARKS" section within NWSSpot to provide feedback with all follow-on spot requests.
NWS Spot for Grand Junction can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=gjt

When internet or computer capabilities are not available, fax or phone can be used to request a spot forecast. When requesting a non-wildfire spot forecast any time of year, it is strongly suggested that requests NOT be made between 1100 and 1500. Requests made during this time will occur during the key preparation period for the afternoon routine weather forecasts and will result in a delay in completing the spot forecast.

Red Flag Warnings / Fire Weather Watches

WFO Grand Junctions issues Red Flag Warnings and Fire Weather Watches as required for its all part of its County Warning Area (CWA), after coordination and collaboration with customers and adjacent NWS offices as outlined in the Basic Services section of this AOP.

Smoke Management Forecasts (SMF)

This forecast is issued no later than 1600 during the fire season. It is a separate product from the afternoon forecast and is valid for the tonight and tomorrow periods. The Smoke Management Forecast includes a brief discussion of airmass stability and meteorological parameters that may

affect smoke dispersal. The forecast also includes a forecast of transport winds, mixing heights and a ventilation index (clearing index for eastern Utah) for the tonight and tomorrow time periods.

NFDRS Forecasts
This product is issued at 1515 during the fire season and is a separate product from the afternoon forecast. The forecasts are used as input to the National Fire Danger Rating System (NFDRS) through WIMS to compute fire danger indices.

IMET Services
The Grand Junction office has two certified IMETs available for dispatch to major forest fires and incidents. Dispatch for significant prescribed burn projects will only be possible when coordination with the fire weather program leader and WFO Meteorologist- in- Charge (MIC) has been accomplished well in advance (months in advance) of the project and only when NWS manpower and resources permit.

Training Services
The fire weather program leader, assistant fire weather program leader, IMETs, or MIC may be available for fire weather training requests from western Colorado and eastern Utah customers. Training requests outside the area will be handled on case-by-case bases. Refer all training requests or technical support questions to the program leader, assistant program leader, and MIC.

Additional Information
The Grand Junction office maintains a Fire Weather Page on its web site home page. This page contains links to forecasts, warning and watches, spot forecasts, RAWS observations, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative forecast. Simply click on the map at the point of interest or input the exact latitude and longitude to get a forecast. To go directly to the Grand Junction fire weather web site, use the following url: http://www.crh.noaa.gov/gjt/fire.php

BACK-UP
The primary service backup for NWS Grand Junction is NWS Salt Lake City and the secondary backup is NWS Boulder (Please See Service Area and Organizational Directory). The servicing NWS office will notify local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

4. Western-Central-Northern, Wyoming- Riverton, Wyoming

Unless otherwise mentioned, it is to be assumed that services provided by NWS Riverton will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Riverton is responsible for providing fire weather support for western-central-northern Wyoming. Its area of responsibility covers Wyoming fire weather zones 140, 275 through 283, 285 through 289, 300 and 414 through 416. The Riverton office is

staffed with 13 meteorologists trained in fire weather forecasting, two are designated as Incident Meteorologists (IMETs) and one is an IMET trainee. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts.

2011 changes

The fire weather conference calls will be held on an *as needed* basis as opposed to weekly. A notification email will be sent with as much advance notice as possible before a conference will be held.

Fire Weather Planning Forecasts

The Riverton office will issue routine Fire Weather Planning Forecasts (FWF) for its zones by 0700 and 1500 during the prescribed burn and wildfire seasons outlined in this AOP. The Riverton office will provide updates to the FWF as conditions warrant.

Spot Forecasts

The Riverton office issues spot forecasts in support of wildfire and prescribed fire operations within its area of responsibility. Normally, spots forecasts will be provided to you within 30 to 45 minutes of the receipt of the request for wild fire and for prescribed burns when prior notification has been provided.
Forecasts can be requested and retrieved at the web site below:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=riw

When internet or computer capabilities are not available, fax or phone will be used to request a spot forecast.

Red Flag Warnings / Fire Weather Watches

Red Flag Warnings and Fire Weather Watches will be issued as appropriate for Wyoming fire weather zones 140, 275 through 283, 285 through 289, and 414 through 416.

Smoke Management Forecasts (SMF)

The Riverton office does not issue a separate SMF. Smoke management forecast elements (transport winds, mixing height and ventilation or dispersion) are located within the Fire Weather Planning Forecasts (FWF).

NFDRS Forecasts

National fire danger rating system trend forecasts are routinely issued seven days a week from May 1st to November 1st of each year as observations are provided by the Land Management Agencies. The trend forecasts shall be prepared by 1530 each afternoon. Requests for spot forecasts in the afternoon may delay the issuance of the trend forecasts, as spot forecasts shall take priority over the trend forecasts.

IMET Services

The Riverton office has two IMETs available for dispatch. Incident response meteorologist services (IMET dispatch) are usually available locally upon request 24 hours a day, seven days a week throughout the year. Due to scheduling conflicts and leave, at times an IMET from WFO Riverton may not be available for dispatch. If this is the case another IMET within the Rocky

Mountain Area, the Eastern Great Basin Area or the Northern Rockies Area will usually be available. IMET dispatches shall be coordinated through the National Interagency Fire Coordination Center (NIFC).

Training Services
There are three fire meteorologists available to assist the user agencies with training at fire behavior and other weather related courses. A request should be forwarded in writing to the office as early as possible to help ensure the request can be satisfied. Every attempt will be made to meet training requests. However, staffing limitations will need to be considered, and consequently, each request will be reviewed on a case by case basis.

Additional Information
The Riverton office maintains a Fire Weather Page on its web site home page. This Page contains links to forecasts (FWF), RFW, Spot Forecasts, FARSITE, RAWS observations, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative FWFs. Simply click on the map within the region of interest. To go directly to the Riverton fire weather web site, use the following url:

http://www.crh.noaa.gov/riw/?n=firewx

Back-Up
The primary service backup for NWS Riverton is NWS Cheyenne and the secondary backup is NWS Billings (Please See Service Area and Organizational Directory). NWS Riverton or the back-up office will notify the local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot, submit the request as usual. However, if a phone call is required, call the office that is providing back-up services.

5. **Big Horn National Forest, Big Horn Recreation Area, Sheridan County, WY – Billings, MT**

Unless otherwise mentioned, it is to be assumed that services provided by NWS Billings will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Billings is responsible for providing Fire Weather support for the Bighorn National Forest (zone 284), the remainder of Sheridan County (zone 274) and the Wyoming portion of the Bighorn Canyon Recreation Area (zone number 129). The Billings office is staffed with 13 meteorologists trained in fire weather forecasting, one of which is designated as Incident Meteorologist (IMET). All fire weather forecasters are certified to produce all the routine fire weather products and spot forecasts.

Fire Weather Planning Forecasts
Forecasts commence in late March or early April, ending in November. The active fire season typically lasts from July through October. All dates are flexible and determined with user input.

Typical forecast issuance times:
Early spring Morning Daily 0700
May1 thru October 31 Mornings Daily 0700

Afternoons Daily 1500 - 1530
November Mornings Daily 0700

Spot Forecasts
The Billings office will prepare spot weather forecasts for prescribed burns and wildfires as requested for locations within the office's fire weather service area. The primary means of requesting and disseminating spot forecasts will be through the NWS Spot internet forecast/reply program which can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=byz

When internet or computer capabilities are not available fax or phone will be used to request a spot forecast. During your follow-up telephone call to ensure receipt of the request, please be sure to tell the forecaster if your request is for a wildfire.

Red Flag Warnings / Fire Weather Watches
Red Flag Warnings and Fire Weather Watches will be issued as required for Billings narrative zones 129, 274 and 284 after coordination and collaboration with customers and adjacent NWS offices.

Smoke Management Forecasts
The Billings office issues a graphical Clearing Index Forecast which is available on the internet web site.

NFDRS Forecasts
This product is issued at 1515 during the fire season and is a separate product from the afternoon forecast. The forecasts are used as input to the National Fire Danger Rating System (NFDRS) through WIMS to compute fire danger indices.

IMET Services
The Billings office has one IMET available for dispatch.

Training Services
The office has a cadre of meteorologists that may be available to handle fire weather training requests from northern Wyoming customers. Training requests outside the area will be handled on case-by-case basis. Refer all training requests or technical support questions to the Focal Point or his Meteorologist in Charge.

Fire Weather Web Page
The Billings Fire Weather Web http://www.wrh.noaa.gov/firewx/main.php contains links to forecasts, Red Flag Warnings and Fire Weather Watches, Spot Forecasts, RAWS and other observations, digital and graphical products, planning tools and the annual operating plan.

FARSITE Data Support
FARSITE data will be available from the internet via the appropriate NWS office Fire Weather Page. From the NWS Billings Fire Weather Page select the FARSITE button from the list at the top of the page. This will take you to a point and click map. FARSITE data is available by

clicking a specific point on the map, selecting a RAWS station from the drop down menu, or entering a latitude/longitude coordinate.

BACK-UP
The primary service backup for NWS Billings is NWS Glasgow (Phone Number: (406) 228-9622, Fax: (406) 228-9627) and the secondary backup is NWS Riverton (Please See Service Area and Organizational Directory). The servicing NWS office will notify their local dispatch centers and RMACC when the office is in or plans to be in backup mode. Spot requests should continue to be requested on the internet from the Billings spot request page.

6. Southeast Wyoming-Nebraska Panhandle- Cheyenne, Wyoming

Unless otherwise mentioned, it is to be assumed that services provided by NWS Cheyenne will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Cheyenne is responsible for providing fire weather support for southeast Wyoming and portions of western Nebraska. Its area of responsibility covers Wyoming fire weather zones 301 through 310, and western Nebraska fire weather zones 311, 312 and 313. The Cheyenne office is staffed with 13 meteorologists trained in fire weather forecasting, one of which is designated as Incident Meteorologist (IMET). All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts.

Area Forecast Discussion
The Cheyenne office will continue to include a fire weather section in every issuance of the Area Forecast Discussion (AFD) product.

2011 changes
New Wyoming fire weather zones 301 through 310, and western Nebraska fire weather zones 311, 312, 313.

Fire Weather Planning Forecasts
The Cheyenne office will issue routine Fire Weather Planning Forecasts (FWF) for its zones by 7:00 a.m. and 3:00 p.m. local time during the prescribed burn and wildfire seasons outlined in this AOP. The Cheyenne office will also issue routine Fire Weather Planning Forecasts (FWF) by 7:00 a.m. outside of the regular prescribed burn and wildfire seasons.

Spot Forecasts
The Cheyenne office issues spot forecasts in support of wildfire and prescribed fire operations within its area of responsibility. Normally, spots forecasts will be provided to you within 30 to 45 minutes of the receipt of the request for wild fire and for prescribed burns when prior notification has been provided.

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=cys

Red Flag Warnings / Fire Weather Watches
NWS Cheyenne issues Red Flag Warnings and Fire Weather Watches as appropriate for the fire weather zones in its fire weather service area.

Smoke Management Forecasts (SMF)
The Cheyenne office does not issue a separate SMF. Smoke management forecast elements (transport winds, mixing height and ventilation) are located within the Fire Weather Planning Forecasts (FWF).

NFDRS Forecasts
National fire danger rating system trend forecasts are routinely issued seven days a week from May 1st to November 1st of each year as observations are provided by the Land Management Agencies. The trend forecasts shall be prepared by 1600 each afternoon. Requests for spot forecasts in the afternoon may delay the issuance of the trend forecasts, as spot forecasts shall take priority over the trend forecasts.

IMET Services
The Cheyenne office will not have a certified IMET on station this year.

Training Services
The fire weather program leader, assistant fire weather program leader, or IMET may be available to handle fire weather training requests from southeast Wyoming and western Nebraska Panhandle customers. Training requests outside the area will be handled on case-by-case bases. Refer all training requests or technical support questions to the Focal Point or his Assistant.

Additional Information
The Cheyenne office maintains a Fire Weather Page on its web site home page. This page contains links to forecasts (FWF), RFW, Spot Forecasts, RAWS observations, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative FWFs. Simply click on the map within the region of interest. To go directly to the Cheyenne fire weather web site, use the following url:

http://www.crh.noaa.gov/cys/firewx.php

BACK-UP
The primary service backup for NWS Cheyenne is NWS Riverton and the secondary backup is NWS Rapid City (Please See Service Area and Organizational Directory). The servicing NWS office will notify their local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

7. Northeast Wyoming – Western South Dakota- Rapid City, SD

Unless otherwise mentioned, it is to be assumed that services provided by NWS Rapid City will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information:

The National Weather Service in Rapid City, SD is responsible for providing fire weather support for portions of Northeast Wyoming and Western South Dakota. Its area of responsibility covers Northeast Wyoming Fire Weather Zones 259, 297, 298, and 299, and Western South Dakota Fire Weather Zones 260 through 266. The Rapid City office is staffed with 15 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce all fire weather products.

Changes for 2011:
WFO Rapid City will use a different calculation method, the Grassland Fire Danger Index (GFDI), to produce the Experimental Grassland Fire Danger Product (RFD) .

The Grassland Fire Danger Index (GFDI) is based on a mathematical formula that uses temperature, relative humidity, wind speed, and curing data. Curing is related to the "greenness" of the plant material. Grass is a light-weight fuel that reacts quickly to changing weather conditions, which have a large and immediate effect on fire potential. The GFDI also better represents the role of wind speed. Recent studies have shown that wind often has the greatest effect on the overall fire danger for grasslands.

Fire Weather Forecasts:
The Rapid City office will issue routine Fire Weather Planning Forecasts (FWF) for all of its fire zones by 0700 LT, March 15 through October 31, and both 0700 LT and 1430 LT July 1 through September 30. Requests for an early start or an extension to the FWF product season should be made in writing to:

David M. Carpenter
Meteorologist in Charge
300 East Signal Drive
Rapid City, SD 57701-3800

Spot Forecasts:
The Rapid City office issues spot forecasts in support of wildfire and prescribed fire operations within its area of responsibility. Normally, spots forecasts will be provided to you within 30 to 45 minutes of the receipt of the request. Please call the office once the request has been sent to confirm the spot request has made it through the system and has been received.

To request a spot forecast, go to:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=unr

Please fill out all sections highlighted in red, and any other pertinent information. Then provide a representative observation from the burn area. Again, please call to ensure that your spot request has arrived at our office. When internet or computer capabilities are not available, you can request a spot forecast using Spot Request Form D-1 via the telephone or fax. The NWS encourages land agencies to provide feedback with all follow-up spot requests.

Red Flag Warnings / Fire Weather Watches:
NWS Rapid City issues Red Flag Warnings and Fire Weather Watches as appropriate for the fire weather zones in its fire weather service area.

Experimental Grassland Fire Danger Index (RFD):
The Rapid City NWS issues a routine Grassland Fire Danger Statement each morning by 0700 am LT from April 1st through November 15th. Statements can be started prior to April 1st and after November 15th. In addition, a Grassland Fire Danger Statement will be issued outside of this time period if the index reaches the Very High or Extreme category. This statement serves the public, media, and other agencies with a product that defines burning conditions which are severe or extreme, but with conditions not as critical as under a Red Flag Warning. In addition to this statement, a Grassland Fire Danger Map can be found on the Rapid City NWS Fire Weather web page.

NFDRS Forecasts:
National fire danger rating system trend forecasts are routinely issued seven days a week from May 1st to November 1st of each year as observations are provided by the Land Management Agencies. The trend forecasts shall be prepared by 1515 LT each afternoon. Requests for spot forecasts in the afternoon may delay the issuance of the trend forecasts, as spot forecasts shall take priority over the trend forecasts.

Smoke Management Forecasts (SMF):
Smoke management forecast elements (transport winds, mixing height and ventilation) are included in the Fire Weather Planning Forecasts (FWF).

IMET Services:
There is not a trained IMET assigned to the Rapid City NWS office.

Training Services:
Fire Meteorologists are available for all training requests. Please send a letter to the Rapid City NWS Office requesting these services with the time, date, and place of the training. Requests should be made at least 4 weeks in advance of the scheduled training. Every attempt will be made to meet training requests. However, staffing limitations will need to be considered, and consequently, each request will be reviewed on a case by case basis.

David M. Carpenter
Meteorologist in Charge
300 East Signal Drive
Rapid City, SD 57701-3800

Additional Information:
The Rapid City office maintains a Fire Weather Page on its web site home page. This page contains links to fire weather planning forecasts (FWF), Red Flag Warning and Fire Weather Watch (RFW), Spot Forecasts (FWS), South Dakota Grassland Fire Danger, the Annual Operating Plan, and other fire weather related information. A clickable map is provided to obtain the narrative FWF for each Fire Zone. Simply click on the map within the region of interest. To go directly to the Rapid City NWS fire weather web site, use the following URL:

http://www.crh.noaa.gov/unr/?n=firewx

Back up:

Primary back up of the Rapid City office for all Fire Weather Products will be done by the North Platte NWS office, and the Cheyenne NWS office as a secondary back up office. Contact numbers for these offices can be found in the main body of the Rocky Mountain Area Fire Weather AOP.

To go directly to the North Platte NWS fire weather web site, use the following URL:

http://www.crh.noaa.gov/lbf/forecasts/firewx/firewx.php

To go directly to the Cheyenne NWS fire weather web site, use the following URL:

http://www.crh.noaa.gov/cys/?n=firewx

8. Central, North Central, and Northeast South Dakota – Aberdeen, SD

Unless otherwise mentioned, it is to be assumed that services provided by WFO Aberdeen for its area of responsibility in South Dakota will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information

The National Weather Service in Aberdeen is responsible for providing fire weather support for portions of central, north central and northeast South Dakota, and two counties in west central Minnesota. Its area of responsibility covers South Dakota fire weather zones 267 through 273 and Minnesota fire weather zones 039 and 046. The Aberdeen office is staffed with 9 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts.

Changes for 2011

WFO Aberdeen will use a different calculation method, the Grassland Fire Danger Index (GFDI), to produce the Experimental Grassland Fire Danger Product (RFD).

Fire Weather Planning Forecasts

The Aberdeen office will issue routine Fire Weather Planning Forecasts (FWF) for its zones by 0700 and 1630 during the prescribed burn and wildfire seasons -- typically April 1 through October 31. However, these dates are general guidelines and are flexible depending upon weather and fuels conditions, thus beginning and ending dates may be later or earlier than listed above.

Spot Forecasts

Aberdeen will issue spot forecasts upon request for locations within its fire weather service area. The primary means of requesting and disseminating spot forecasts will be through the internet based NWSpot forecast/reply program. NWSpot for WFO Aberdeen can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=abr

When internet or computer capabilities are not available, fax or phone will be used to request a spot forecast.

Red Flag Warnings / Fire Weather Watches

NWS Aberdeen issues Red Flag Warnings and Fire Weather Watches as appropriate for the counties in its fire weather service area. Appropriate fire weather products will contain a statement as to the impact of such warnings/watches on the applicable fire weather zones.

Experimental Grassland Fire Danger Index (RFD)

The Grassland Fire Danger Statements and South Dakota Grassland Fire Danger map are issued once a day during the fire season around 5 AM local time. The Grassland Fire Danger values use the following categories, which correspond to the likelihood that grass fires will get out of control:

- Low Fire Danger
- Moderate Fire Danger
- High Fire Danger
- Very High Fire Danger
- Extreme Fire Danger

The grassland fire danger forecasts can be used by emergency managers and fire officials for decision-making on issuing burn permits or burn bans. It may also be used for planning prescribed burns.

NFDRS Forecasts

National fire danger rating system trend forecasts are routinely issued seven days a week from April 1st to October 31st of each year as observations are provided by the Land Management Agencies. The trend forecasts shall be prepared by 1600 each afternoon. Requests for spot forecasts in the afternoon may delay the issuance of the trend forecasts, as spot forecasts shall take priority over the trend forecasts.

IMET Services

The Aberdeen office has no IMET services available.

Training Services

Fire Meteorologists may be available for training requests from customers within the WFO Aberdeen area of responsibility. Training requests outside the area will be handled on case-by-case bases. Refer all training requests or technical support questions to the fire weather program leader or Assistant fire weather program leader.

Additional Information

The Aberdeen office maintains a Fire Weather Page on its internet webpage. This page contains links to the FWF, RFW, RFD, Spot Forecasts, RAWS observations, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative FWF. Simply click on the map within the region of interest. To go directly to the Aberdeen fire weather web site, use the following URL:

http://www.crh.noaa.gov/abr/?n=fire_weather.php

Back-Up

The primary service backup for WFO Aberdeen is WFO Sioux Falls and the secondary backup is WFO Bismarck (Please See Service Area and Organizational Directory). During the prescribed burn and wildfire seasons, the servicing NWS office will notify their local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access NWSpot via the backup office's fire weather webpage.

9. South Central-Southeast South Dakota – Sioux Falls, South Dakota

Unless otherwise mentioned, it is to be assumed that services provided by NWS Sioux Falls will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information

The National Weather Service in Sioux Falls is responsible for providing fire weather support for the southeast quadrant, a small portion of south central South Dakota, southwest Minnesota, extreme northeast Nebraska, and northwest Iowa. Its area of responsibility covers South Dakota fire weather zones 255 through 258, and Minnesota fire zone 900, Nebraska fire weather zone 249 and Iowa fire weather zone 300 and 301. The Sioux Falls office is staffed with 10 meteorologists and one hydro-meteorological technician trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts.

Changes for 2011

WFO Sioux Falls will issue a morning only FWF from June 1st through August 14th. Morning and afternoon FWFs will continue to be issued from April 1st through May 31st, and again from August 15th through October 31st .

WFO Sioux Falls will use a different calculation method, the Grassland Fire Danger Index (GFDI), to produce the Experimental Grassland Fire Danger Product (RFD).

Fire Weather Planning Forecasts

The Sioux Falls office will issue routine Fire Weather Planning Forecasts (FWF) for its zones with "no later than" issuances times of 0700 and 1600 from April 1st through October 31st. Through interagency agreement, these dates can be extended in times of persistent dryness.

Spot Forecasts

Spot forecasts prepared by the Sioux Falls weather office are available by request, 24 hours a day, 7 days per week, for locations within the office's fire weather service area. The primary means of requesting and disseminating spot forecasts will be through the internet based NWSpot forecast/reply program. NWSpot for Sioux Falls can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=fsd

When internet or computer capabilities are not available, fax or phone will be used to request a spot forecast.

Red Flag Warnings / Fire Weather Watches

NWS Sioux Falls issues Red Flag Warnings and Fire Weather Watches as appropriate for fire weather zones within its fire weather service area. All attempts at coordination with involved user agencies are first attempted.

Experimental Grassland Fire Danger Index (RFD)
Sioux Falls issues a routine Grassland Fire Danger Statement each morning by 0700 from April 1st through November 15th. These dates can be extended in times of persistent dryness. In addition, a Grassland Fire Danger Statement will be issued during the winter months if the index reaches the very high or extreme categories. This statement serves the public, media and local and state user agencies with a product that defines burning conditions which are not as critical as Red Flag Warnings.

NFDRS Forecasts
National Fire Danger Rating System forecasts are routinely issued from April 1st through October 31st. These dates can be extended through interagency coordination in times of persistent dryness. The forecasts will be prepared and issued between 1500 and 1600 each day. A current 1300 LST observation will be required for a forecast to be issued.

IMET Services
The Sioux Falls office has an IMET in training

Training Services
The fire weather program leader is available for training services in resident courses with user agencies in the Sioux Falls forecast area. Specific user agency responsibilities in the reimbursement of costs associated with travel, per diem and overtime, are detailed in the National Interagency Agreement for Meteorological Services.

Additional Information
The Sioux Falls office maintains a Fire Weather Page on its web site home page. This page contains links to the Fire Weather Planning Forecast (FWF), Grassland Fire Danger Index, Spot Forecasts, Red Flag Warnings/Fire Weather Watches, products from the Storm Prediction Center, RAWS observations, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative FWF. Simply click on the map within the region of interest. To go directly to the Sioux Falls fire weather web site, use the following URL:

http://www.crh.noaa.gov/fsd/firewx.htm

BACK-UP
The primary service backup for NWS Sioux Falls is NWS Aberdeen and the secondary backup is NWS Minneapolis (Please See Service Area and Organizational Directory). The servicing NWS office will notify there local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

10. Western and North Central Nebraska – North Platte, Nebraska

Unless otherwise mentioned, it is to be assumed that services provided by NWS North Platte will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather

AOP.

General Information
The National Weather Service in North Platte is responsible for providing fire weather support for portions of Western and North Central Nebraska. Its area of responsibility covers Nebraska fire weather zones 204, 206, 208, 209, 210, and 219. The North Platte office is staffed with 9 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts.

2011 changes
None

Fire Weather Planning Forecasts
The North Platte office will issue routine Fire Weather Planning Forecasts (FWF) for it's zones twice daily by 0700 and 1600 during the prescribed and wildfire season. The FWF product may also be reduced to one issuance by 0700, or suspended, after coordination between NWS North Platte and our users. This most likely will occur during green up and abnormally wet periods when extreme fire behavior is minimal.

Spot Forecasts
The North Platte office prepares spot weather forecasts for prescribed burns and wildfires as requested for locations within the office's county warning area (CWA).

The primary means of requesting and disseminating spot forecasts is the NWSSpot Internet-based spot request and reply program. Internet requests are preferred and once sent, will alarm at the forecaster workstation. Phone calls to the WFO are welcome to ensure receipt of the spot request by the fire weather forecaster. If you have not received your spot forecast after 60 minutes, call the WFO to check on the status of your spot or to determine if there has been a communications system failure. The NWS strongly encourages land agencies to use the "REMARKS" section within NWSSpot to provide feedback with all follow-on spot requests. NWS Spot for North Platte can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=lbf

When internet or computer capabilities are not available, fax or phone can be used to request a spot forecast.

Red Flag Warnings / Fire Weather Watches
NWS North Platte issues Red Flag Warnings and Fire Weather Watches as appropriate for the fire weather zones in its fire weather service area.

Critical fire weather conditions occurring outside the normal fire season will be relayed to the local customers via the Hazardous Weather Outlook (OMAHWOLBF) product for RH values at 20 percent or less. A phone call to the users will be utilized if RH values drop below 15 percent.

NFDRS Forecasts
WFO North Platte currently has one forecast point located at the Bessey Ranger District, in the Nebraska National Forest near Halsey. This product is issued around 1530 during the fire season

and is used as input to the National Fire Danger Rating System (NFDRS) through WIMS to compute fire danger indices.

IMET Services
The North Platte office does not have a trained IMET.

Training Services
The fire weather program leader, SOO, or MIC may be available to handle fire weather training requests from customers within the WFO North Platte CWA. Training requests outside the area will be handled on a case-by-case basis. Refer all training requests or technical support questions to the fire weather program leader, SOO, or MIC.

Additional Information
The North Platte office maintains a Fire Weather Page on its web site home page. This page contains links to the FWF, Spot Forecasts, RAWS observations, this operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative forecasts. Simply click on the map within the region of interest. To go directly to the North Platte fire weather web site, use the following url:

http://www.crh.noaa.gov/lbf/firewx/firewx.php

BACK-UP
The primary service backup for NWS North Platte is NWS Rapid City and the secondary backup is NWS Hastings (Please See Service Area and Organizational Directory). The servicing NWS office will notify there local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

11. East Central CO/Northwest KS/SW Nebraska – Goodland, Kansas

Unless otherwise mentioned, it is to be assumed that services provided by NWS Goodland will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Goodland is responsible for providing fire weather support for portions of east central Colorado, extreme southwest Nebraska and northwest Kansas. Its area of responsibility covers Colorado fire weather zones 252, 253, and 254, Nebraska fire weather zones N79-N81, and Kansas fire weather zones K1-K4, K13-K16, K27-K29, and K41-K42. The Goodland office is staffed with 12 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce the routine fire weather products and spot forecasts.

2011 Fire Weather Changes
None

Fire Weather Planning Forecasts
The Fire Weather Planning Forecasts (FWF) will be issued once daily by 0600 year-round for fire weather zones N79-N81 in Nebraska, K1-K4, K13-K16, K27-K29 and K41-K42 in Kansas

and 252-254 in Colorado. The FWF will be updated as necessary.

Spot Forecasts
Goodland will issue a spot weather forecast upon request from all local, state, and federal land management agencies in support of wildland fires and prescribed burns. The NWS strongly encourages land agencies to use the "REMARKS" section within NSW Spot to provide feedback with all follow-up spot requests, or to provide additional information or updated observations. Spot forecasts are requested and retrieved using the following web address:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=gld.

When internet or computer capabilities are not available, spot requests may be made via fax or telephone.

Red Flag Warnings / Fire Weather Watches
NWS Goodland issues Red Flag Warnings and Fire Weather Watches as appropriate for fire weather zones within its fire weather service area.

NFDRS Forecasts
Not currently issued.

IMET Services
The Goodland office does not have a trained IMET.

Training Services
Fire Meteorologists are available for training requests.

Additional Information
The Goodland office maintains a Fire Weather Page on its web site home page. This page contains links to forecasts (FWF), RFW, Spot Forecasts, and other fire weather related sites. A clickable map is provided to obtain a FWF for each zone in Kansas. To go directly to the Goodland fire weather web site, use the following url:

http://www.crh.noaa.gov/gld/?n=/firewx/index.php

BACK-UP
The primary service backup for NWS Goodland is NWS Dodge City (phone number 620-227-3700) and the secondary backup is NWS Pueblo (Please See Service Area and Organizational Directory). The servicing NWS office will notify their local dispatch centers and RMACC when the office is in service backup or plans to be in service backup. To receive a spot forecast from a backup office, customers should access the web based spot program of the office that is providing the backup service.

12. Central and South Central Nebraska and North Central Kansas, Hastings, NE

Unless otherwise mentioned, it is to be assumed that services provided by NWS Hastings for units in central and south central Nebraska and north central Kansas will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information

The National Weather Service in Hastings, NE is responsible for providing fire weather support for central and south central Nebraska and north central Kansas. The area of responsibility covers fire weather zones 39–41, 46–49, 60–64, 72–77, and 82–87 in central and south central Nebraska, and zones 5–7 and 17–19 in north central Kansas. The Hastings office is staffed with 12 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts. A Fire Weather Forecaster will be on duty 24 hours a day, seven days a week year-round.

2011 Changes:

None

Fire Weather Planning Forecasts (FWF)

The Fire Weather Planning Forecast (FWF) will be issued once daily by 0600 year-round for fire weather zones 39–41, 46–49, 60–64, 72–77, and 82–87 in central and south central Nebraska, and zones 5–7 and 17–19 in north central Kansas. The FWF will be updated as necessary.

Smoke Management Forecasts (SMF)

Not issued.

NFDRS Forecasts

Not issued.

Spot Forecasts

The Hastings office will prepare spot weather forecasts for prescribed burns and wildfires upon request for locations within the office's county warning area (CWA). The primary means of requesting and disseminating spot forecasts is the NWS Spot Internet-based spot request and reply program. To ensure receipt of a spot request by the fire weather forecaster, the requester should call the NWS after submitting the spot request. During this follow-up telephone call to ensure receipt, please tell the forecaster if the request is for a wildfire so it can be handled with the proper priority. If you have not received your spot forecast after 60 minutes, call the WFO to check on the status of your spot or to determine if there has been a communications system failure. The NWS strongly encourages land agencies to use the "REMARKS" section within NWS Spot to provide feedback with all follow-up spot requests. NWS Spot for Hastings can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=gid

When internet or computer capabilities are not available, fax or phone will be used to request a spot forecast.

Red Flag Warnings / Fire Weather Watches

Red Flag Warnings and Fire Weather Watches will be issued as required for Nebraska fire weather zones 39–41, 46–49, 60–64, 72–77, and 82–87, and Kansas fire weather zones 5–7 and 17–19 after coordination and collaboration with customers and adjacent NWS offices.

Grassland Fire Danger Statement (RFD)

The Grassland Fire Danger Statement (RFD) will be issued for Nebraska fire weather zones 39–41, 46–49, 60–64, 72–77, and 82–87, and Kansas fire weather zones 5–7 and 17–19. The RFD will be issued once daily by 0600 year-round, and updated as necessary.

IMET Services
The Hastings office is not staffed with an IMET.

Training
The fire weather program leader or assistant fire weather program leader may be available to handle fire weather training requests from central and south central Nebraska and north central Kansas customers. Training requests outside the area will be handled on case-by-case bases. Refer all training requests or technical support questions to the fire weather program leader or assistant fire weather program leader.

Additional Information
The Hastings office maintains a Fire Weather Page on its web site home page. This page contains links to the FWF, RFW, RFD, Spot Forecasts, Graphical Fire Weather Forecasts, the annual operating plan, and other fire weather related sites. To go directly to the Hastings fire weather web site, use the following url:

http://www.crh.noaa.gov/gid/?n=firewx

BACK-UP
The primary service backup office for NWS Hastings is NWS Omaha and the secondary backup office is NWS North Platte. The servicing NWS office will notify their local dispatch centers and RMACC when the office is in, or plans to be in, backup mode. To receive a spot forecast from a backup office, customers should access the web-based spot program of the office that is providing the backup service.

13. Southwest Kansas - Dodge City, KS

Unless otherwise mentioned, it is to be assumed that services provided by
NWS Dodge City for units in southwest Kansas will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Dodge City, KS is responsible for providing Fire Weather support for southwest Kansas. The area of responsibility covers Fire Weather Planning Forecast zones 030, 031, 043-046, 061-066, 074-081, 084-090. The Dodge City office is staffed with 13 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts. A Fire Weather Forecaster will be on duty 24 hours a day…seven days a week year round.

2011 Changes
None

Fire Weather Planning Forecasts

The Fire Weather Planning Forecast (FWF) will be issued once daily by 0400 year-round for fire weather zones 030, 031, 043-046, 061-066, 074-081, 084-090. The FWF will be updated as necessary.

Spot Forecasts

The Dodge City office will prepare spot weather forecasts for prescribed burns and wildfires upon request for locations within the office's county warning area (CWA). The primary means of requesting and disseminating spot forecasts is the NWSSpot Internet-based spot request and reply program. During your follow-up telephone call to ensure receipt, tell the forecaster that your reply is for a wildfire. If you have not received your spot after 60 minutes, call the WFO to check on the status of your spot or to determine if there has been a communications system failure. The NWS strongly encourages land agencies to use the "REMARKS" section within NWSSpot to provide feedback with all follow-up spot requests. NWSSpot for Dodge City can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=ddc

When internet or computer capabilities are not available, fax, phone or telefax will be used to request a spot forecast.

Red Flag Warnings / Fire Weather Watches

Red Flag Warnings and Fire Weather Watches will be issued as required for Kansas narrative zones 030, 031, 043-046, 061-066, 074-081, 084- 090 after coordination and collaboration with customers and adjacent NWS offices.

Smoke Management Forecasts (SMF)

Not currently issued.

NFDRS Forecasts

Not currently issued.

IMET Services

The Dodge City office does not have a trained IMET.

Training

The fire weather program leader or assistant fire weather program leader may be available to handle fire weather training requests from southwest Kansas customers. Training requests outside the area will be handled on a case-by-case basis. Refer all training requests or technical support questions to the fire weather program leader or assistant.

Additional Information

The Dodge City office maintains a Fire Weather Page on its web site home page. This page contains links to the FWF, RFW, Spot Forecasts, Public Fire Danger Statements, RAWS observations, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative FWF. Simply click on the map within the region of interest. To go directly to the Dodge City fire weather web site, use the following url:

http://www.crh.noaa.gov/ddc/?n=firewx

BACK-UP
The primary service backup for NWS Dodge City is NWS Goodland and the secondary backup is NWS Wichita (Please See Service Area and Organizational Directory). The servicing NWS office will notify their local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

14. Eastern Nebraska and Southwestern Iowa – Omaha, NE

Unless otherwise mentioned, it is to be assumed that services provided by NWS Omaha for units in eastern Nebraska and southwestern Iowa will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Omaha, NE is responsible for providing Fire Weather support for eastern Nebraska and southwestern Iowa. The area of responsibility covers Fire Weather Planning Forecast zones 11, 12, 15-18, 30-34, 42-45, 50-53, 65-68, 78, and 88-93 in Nebraska; and zones 43, 55, 56, 69, 79, 80, 90 and 91 in Iowa. The Omaha office is staffed with 14 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts. A Fire Weather Forecaster is on duty 24 hours a day…seven days a week year round.

2011 Changes
None

Fire Weather Planning Forecasts (FWF)
The fire weather planning forecast (FWF) will be issued by 0600 year round.

Spot Forecasts
The Omaha office will issue a spot weather forecast upon request from all local, state, and federal land management agencies in support of wildland fires and prescribed burns in eastern Nebraska. Spot forecasts are requested and retrieved using the following web address:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=oax

The NWS strongly encourages land agencies to use the "REMARKS" section within NWS Spot to provide feedback with all follow-up spot requests.

When internet or computer capabilities are not available, fax or phone will be used to request a spot forecast.

Red Flag Warnings / Fire Weather Watches
Red Flag Warnings are issued as required for Nebraska and Iowa Fire Weather Zones served by WFO Omaha after coordination and collaboration with customers and adjacent NWS offices.

Grassland Fire Danger (RFD)
The Grassland Fire Danger Forecast is issued by 0700 and updated by 1200 throughout the year.

Smoke Management Forecasts (SMF)
Not issued.

NFDRS Forecasts
Not issued.

IMET Services
The Omaha office does not have a trained IMET.

Training
The fire weather program leader may be available to handle fire weather training requests from customers served by WFO Omaha. Training requests outside the area will be handled on case-by-case basis. Refer all training requests or technical support questions to the fire weather program leader.

Additional Information
The Omaha office maintains a Fire Weather Page on its web site home page. This page contains links to the FWF, RFW, RFD, Spot Forecasts, the annual operating plan, and other fire weather related sites. A clickable map is provided to obtain a narrative FWF. Simply click on the map within the region of interest. To go directly to the Omaha fire weather web site, use the following url:

http://www.crh.noaa.gov/oax/?n=oaxfirewx

BACK-UP
Primary service backup for NWS Omaha is NWS Hastings and the secondary backup is NWS Sioux Falls. The servicing NWS office will notify their local dispatch centers and RMACC when the office is in, or plans to be in, backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

15. Northeast Kansas- Topeka, KS

Unless otherwise mentioned, it is to be assumed that services provided by NWS Topeka will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Topeka is responsible for providing fire weather support for portions of north central, east central, and northeast Kansas. Its area of responsibility covers Kansas fire weather zones 8>12, 20>26, 34>40, 54>56, 58 and 59. The Topeka office is staffed with 12 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts.

2011 Changes
None

Fire Weather Planning Forecasts
The Topeka office will issue routine Fire Weather Planning Forecasts (FWF) for its zones once daily by 0600 during the prescribed burn and wildfire seasons outlined in this AOP. Forecasts will be updated as appropriate.

Spot Forecasts
Topeka will issue a spot weather forecast upon request from all local, state, and federal land management agencies in support of wildland fires, and for agencies in the interagency agreement for prescribed burns.

Spot forecasts are requested and retrieved using the following web address:
http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=top

Internet requests are preferred. Phone calls to the WFO are welcome to ensure receipt of the spot request by the fire weather forecaster. If you have not received your spot forecast after 60 minutes, call the WFO to check on the status of your spot or to determine if there has been a communications system failure. The NWS strongly encourages agencies to use the "REMARKS" section within NWSSpot to provide feedback with all follow-on spot requests, or to provide additional information or updated observations. Phone calls to the NWS with updated on site weather information during the burn are also appreciated.

Red Flag Warnings / Fire Weather Watches
NWS Topeka issues Red Flag Warnings and Fire Weather Watches as appropriate for fire weather zones within its fire weather service area.

Rangeland Fire Danger Statement
The Rangeland Fire Danger Statement represents the grassland fire danger across the Topeka CWA. NWS Topeka produces a Rangeland Fire Danger Statement to represent this information. Until more space is available on the Kansas NLETS systems, NWS Topeka will append the Grassland Fire Danger Index from the NWS Wichita area to the end of this product. The statement will be issued by 0500 each day, and updated as necessary.

Fire Weather Point Planning Forecast
The Point Planning forecast is issued by 0600, for Kansas fire zones 058, 024 and 012.

NFDRS Forecasts
Not currently issued.

IMET Services
The Topeka office does not have a trained IMET.

Training Services
The fire weather program leader, SOO, or MIC may be available to handle fire weather training requests from customers within the WFO Topeka CWA. Refer all training requests or technical support questions to the fire weather program leader, SOO, or MIC.

Additional Information

The Topeka office maintains a Fire Weather Page on its web site home page. This page contains links to the Fire Weather Planning forecast, Spot Forecasts, Fire Weather Watches / Red Flag Warnings, Rangeland Fire Danger Statement, Graphical Fire Weather forecasts, and other fire weather related sites. A clickable map is provided to obtain a narrative FWF. Simply click on the map within the region of interest. To go directly to the Topeka fire weather web site, use the following url:

http://www.crh.noaa.gov/top/?n=fire

BACK-UP
The primary service backup for NWS Topeka is NWS Wichita and the secondary backup is NWS Pleasant Hill (Please See Service Area and Organizational Directory). To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

16. Central-Southeast Kansas – Wichita, Kansas

General Information
The National Weather Service in Wichita, KS is responsible for providing Fire Weather support for central and southeast Kansas. The area of responsibility covers Fire Weather Planning Forecast zones 32,33, 47-53, 67-72, 82-83, 91-96, and 98-100. The Wichita office is staffed with 14 meteorologists trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts. A Fire Weather Forecaster will be on duty 24 hours a day…seven days a week year round.

2011 Changes:
None.

Fire Weather Planning Forecasts (FWF)
The fire weather planning forecast (FWF) will be issued by 0600 daily year round.

Grassland Fire Danger Index
The Grassland Fire Danger Index will be issued twice each day by 4am and 4pm, and updated as needed. A graphical version of the product will be available on the NWS Wichita Local Digital Forecast Database (http://www.crh.noaa.gov/ndfd/graphical/sectors/ictFireDay.php#tabs). The text product will include 3-hourly forecasts for each county for 6 days.

Spot Forecasts
The Wichita office will prepare spot weather forecasts for prescribed burns and wildfires upon request for locations within the office's county warning area (CWA). The primary means of requesting and disseminating spot forecasts is the NWSSpot Internet-based spot request and reply program. During your follow-up telephone call to ensure receipt, tell the forecaster that your reply is for a wildfire. If you have not received your spot after 60 minutes, call the WFO to check on the status of your spot or to determine if there has been a communications system failure. The NWS strongly encourages land agencies to use the "REMARKS" section within NWSSpot to provide feedback with all follow-up spot requests. NWSSpot for Wichita can be accessed at:

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=ict

When internet or computer capabilities are not available, fax, phone or telefax will be used to request a spot forecast.

Red Flag Warnings / Fire Weather Watches
Red Flag Warnings and Fire Weather Watches will be issued as required for Kansas narrative zones 32-33, 47-53, 67-72, 82-83, 91-96, and 98-100 when the maximum value of the Grassland Fire Danger Index is "Extreme".

Training
The fire weather program leader or assistant fire weather program leader may be available to handle fire weather training requests from central/southeast Kansas customers. Training requests outside the area will be handled on case-by-case bases. Refer all training requests or technical support questions to the fire weather program leader or assistant.

Additional Information
The Wichita office maintains a Fire Weather Page on its web site home page. This page contains links to the FWF, RFW, Grassland Fire Danger Index, Spot Forecasts, Public Fire Danger Statements, RAWS observations, the annual operating plan, and other fire weather related sites. To go directly to the Wichita fire weather web site, use the following url:

http://www.weather.gov/ict/?n=firewx

BACK-UP
The primary service backup for NWS Wichita is NWS Topeka and the secondary backup is NWS Dodge City (Please See Service Area and Organizational Directory). The servicing NWS office will notify their local dispatch centers and RMACC when the office is in or plans to be in backup mode. To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service.

17. Extreme Northeast Kansas- Pleasant Hill, MO

Unless otherwise mentioned, it is to be assumed that services provided by NWS Pleasant Hill will follow the regional policies and procedures set forth in the Rocky Mountain Area Fire Weather AOP.

General Information
The National Weather Service in Pleasant Hill is responsible for providing fire weather support for portions of extreme northeast, and east central Kansas. Its area of responsibility covers Kansas fire weather zones 25, 57, 60, and 102>105. The Pleasant Hill office is staffed with 10 forecasters and 3 managers trained in fire weather forecasting. All fire weather forecasters are trained to produce all the routine fire weather products and spot forecasts.

2011 Changes
Pending…start-up of the Grassland Fire Danger Index product for all Kansas counties in area of responsibility.

Fire Weather Planning Forecasts
The Pleasant Hill office will issue routine Fire Weather Planning Forecasts (FWF) for its zones twice daily year by 0600 and 1630. Forecasts will be updated as appropriate.

Spot Forecasts
Pleasant Hill will issue a spot weather forecast upon request from all local, state, and federal land management agencies in support of wildland fires, and for agencies in the interagency agreement for prescribed burns.

Spot forecasts are requested and retrieved using the following web address:
http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=eax

Internet requests are preferred. Phone calls to the WFO are welcome to ensure receipt of the spot request by the fire weather forecaster. If you have not received your spot forecast after 60 minutes, call the WFO to check on the status of your spot or to determine if there has been a communications system failure. The NWS strongly encourages agencies to use the "REMARKS" section within NWSSpot to provide feedback with all follow-on spot requests, or to provide additional information or updated observations. Phone calls to the NWS with updated on site weather information during the burn are also appreciated.

Red Flag Warnings / Fire Weather Watches
NWS Pleasant Hill issues Red Flag Warnings and Fire Weather Watches as appropriate for fire weather zones within its fire weather service area.

Rangeland Fire Danger Statement
The NWS Pleasant Hill produces the GFDI product for all Kansas counties in the Pleasant Hill area of responsibility.

NFDRS Forecasts
National fire danger rating system forecasts are routinely issued everyday year round by 2000 GMT for 4 sites, including the State Line site TRDK1, ID 145801.

IMET Services
The Pleasant Hill office does not have a trained IMET.

Training Services
The fire weather program leader, SOO, WCM, or MIC may be available to handle fire weather training requests from customers within the WFO Pleasant Hill CWA. Refer all training requests or technical support questions to the fire weather program leader, SOO, WCM, or MIC.

Additional Information
The Pleasant Hill office maintains a Fire Weather Page on its web site home page. This page contains links to the Fire Weather Planning forecast, Spot Forecasts, Fire Weather Watches / Red Flag Warnings, and other fire weather related sites. To go directly to the Pleasant Hill fire weather web site, use the following url:

http://www.crh.noaa.gov/eax/?n=firewx

BACK-UP
The primary service backup for NWS Pleasant Hill is NWS Springfield and the secondary backup is NWS Topeka (Please See Service Area and Organizational Directory). To receive a spot from a backup office, customers should access the web based spot program of the office that is providing the backup service. If a spot forecast is not received in a timely manner, the customer requesting the spot forecast should call the primary office to see if there was a problem with the receipt of the request, or if the office is in service back-up mode.

V. WILDLAND FIRE AGENCY SERVICES AND RESPONSIBILITIES

A. Predictive Services Products and Services

Wildland Fire Agencies' programs provide Geographic Area and national products for the strategic role of resource prioritization and utilization. Some specific responsibilities of Wildland Fire Agencies are listed below. Interagency Fire Meteorologists at RMCC combine forecast information from NWS, local weather analysis, and other sources into area-wide summaries and briefings (briefings to fire management on a local or geographical level). The meteorologists work in conjunction with Fire Intelligence to form the Predictive Services group, which produces integrated fire weather/fire danger assessments for the entire Rocky Mountain Area. The intent of Predictive Services is to provide strategic, regional and sub-regional information to assist in the preparedness, movement and allocation of firefighting resources. RMA Predictive Services is the exclusive provider of fire danger and potential forecasts within the Rocky Mountain Area beyond the next day NFDRS forecasts provided by NWS. All products and services are available online and can be obtained from the RMA Predictive Services homepage at:

http://gacc.nifc.gov/rmcc/

1. **Day 1 Thru 7 RMA Fire Potential Outlook Maps:** This is a graphical based product that contains both fuel dryness and weather, and a corresponding map for large fire risk. This product is used in briefings and is used for long term strategic resource planning.

   http://gacc.nifc.gov/rmcc/predictive/outlooks.html

   Issuance Schedule: Issued twice daily by 800 a.m. and 4:00 pm, from approximately mid May – September 30 (or as wildfire potential warrants outside the core dates).

2. **7-Day Significant Fire Potential Outlook Table:** Forecast Dryness Levels that's correlated to historical fire data. A three tier system is used including "Moist" (Green), "Dry" (Yellow), and "Very Dry" (Brown). Additionally, the product will include high risk events that increase the probability of new large fires or large fire growth on existing fires.

   Issuance Schedule: Approximately mid May – September 30, (or as wildfire potential warrants outside the core dates).

3. **Southwest Monsoon Outlook:** This product is a combination of graphics and text that outlines and discusses the current and forecasted moisture flux and patterns associated with the Southwest Monsoon. The Southwest Monsoon plays a significant role the severity of the RMA fire season. RMA Predictive Services analysis is solely responsible for this product.

Issuance Schedule: Approximately mid June – late August/early September. Updated every Wednesday and Sunday afternoon by 1500 MDT.

4. **30 Day, 90 Day, and Seasonal Fire Potential Outlooks:** Utilizes all available weather, climate and fire danger information to make longer-term predictions of fire business potential. Outlooks will highlight time frames and potential for large fire activity and resource utilization relative to normal. The product will be issued by National Predictive Services, however RMA Predictive Services will provide input

   Issuance Schedule: Year round, a few days before the end of each month.

5. **Multi-Media RMA Fire Potential Briefing:** RMA Predictive Services unit will post a multi-media fire potential briefing on their homepage by 0900 daily from approximately late May through September.

B. Program Management - Management of federal land management and fire agencies' fire weather programs and responsibilities.

1. **RAWS** – Station owners will quality control RAWS data and adhere to NWCG guidelines and agency specific program guidance.

2. **Liaison** - Predictive Services Fire Weather Program Manager will act as a liaison between fire managers and various service providers, including NWS, the private sector and the research community. Fire Managers and the NWS will try to resolve conflicts at the local level. Predictive Services will be notified by the NWS and Fire Managers of all conflicts and resolutions. Fire Managers may choose to have Predictive Services Meteorologist represent them or act as a liaison when conflicts arise.

C. Monitoring, Feedback and Improvement of Fire Weather Information – RMCC meteorologists will monitor all sources of fire weather information to ensure consistency, quality and applicability. Where issues arise, data will be archived and brought to the attention of the provider to enhance awareness and work towards improvement. Some priorities include:

1. General forecast parameter consistency across the Rocky Mountain Area, especially across forecast area and land management unit boundaries.
2. Accuracy and applicability of Red Flag Warnings
3. Overall adherence to policies and procedures set forth in AOP

D. Technology Transfer – RWCC meteorologists will work to integrate advanced technology analytical and prediction systems into fire management planning and operations. Some efforts will include:

1. Regional numerical modeling of weather and smoke dispersion
2. Proper use of RAWS and NFDRS
3. Research and development to advance fire meteorology

E. Agency Computer Systems - Where fire management computer systems like WIMS are locally

available, access to the systems will be granted to NWS to provide or develop services, as needed. Costs will be borne by the Interagency Wildland Fire Agencies for requirements that are beyond the distribution of weather information through a central communications gateway.

F. Fire Weather Observations

1. **RAWS & NFDRS Observations**
   Fire weather observations for stations that desire next day forecasts will be entered into WIMS no later than 1350 LST (1450 LDT). Observations from Remote Automated Weather Stations (RAWS) sites will be the latest data available from the satellite interrogation. RAWS and NFDRS stations are expected to be sited and maintained according to NWCG PMS 426-3 "National Fire Danger Rating System Weather Station Standards". Proper siting of all stations is a goal in the Rocky Mountain Area rather than an operational reality. In practice, some long standing NFDRS stations will remain improperly sited due to extensive fire danger histories. Any new or relocated stations will be correctly sited in a long-term effort to address this issue. Regardless of station age or location, annual RAWS maintenance requirements will be strictly adhered to.

2. **Fire-line Observations**
   Fireline observations should be taken prior to requesting a spot forecast. Fire management agency personnel should take standard fireline observations of temperature, humidity, wind speed and direction and weather/sky condition consistent with guidance provided in NFES 2140 "Weather Station Handbook - an Interagency Guide for Wildland Managers". Under limited circumstances RAWS observations may be provided to the NWS for an initial spot forecast request on a multi-day project, but only if the RAWS site is located at a similar elevation, aspect, and sheltering as the burn site and has been shown to have weather conditions that are representative of the at the burn site.

G. Technical Specialist- Land Agency Meteorologist can be dispatched to incidents or prescribed burns as a Technical Specialist

H. Reimbursement for NWS Provided On-site Support and Training Assistance – Federal agencies will reimburse NWS for all costs incurred by the agency for IMET support and training assistance, per the procedures set forth in the National Agreement. Non-federal agencies do not have blanket reimbursable agreements under the national agreement.

http://radar.srh.noaa.gov/fire/admin/IMET%20RER%20Handbook%202009%20final.pdf

I. Fuel Information Support-
Land Agencies will provide fuel information in support of the NWS Red Flag Program. See fuel criteria on page 13-14.

VI. JOINT RESPONSIBILITIES

A. Training – Meteorological training assistance for NWCG and other courses will be provided jointly. Requests for training from NWS offices should be directed to that office's fire weather program leader or assistant fire weather program leader, followed by a generic written request sent to the Meteorologist-in-Charge. Requests for training from RMA fire meteorologists should be directed to

the Predictive Services Group Fire Weather Program Manager. In all cases, the requesting agency will provide dates of service needed and sufficient advance notice to allow for scheduling and proper preparation. Costs incurred by NWS in providing training assistance will be borne by the requesting agency.

B. <u>Incident Response</u> - Costs incurred by NWS in providing IMET support will be borne by the requesting agency. Qualified (Under NWS or Land Agency Qualifications) fire management agency IMETs may be utilized under special circumstances, and to maintain qualifications. All requests for IMETs will be processed through normal dispatch procedures. The following information will be provided to the requested IMET:

1. Name of fire
2. Location of fire
3. Directions to location where the IMET is to report and Fire Camp Location
4. Name of Incident Commander, Plans Chief and Fire Behavior Analyst if available, and telephone contacts at the ICP.
5. Request and Resource Order number for IMET
6. If the IMET resource order is delayed, NWS offices may call the RMCC meteorologists, who will ensure the order process is expedited.

Note: If the IMET resource order is delayed, NWS offices may call the RMCC meteorologists, who will insure the order is expedited.

Additionally, the user agency is responsible for providing adequate shelter to allow the equipment and fire weather meteorologist to function efficiently. This would include a location free of excessive dust, heat and moisture, protection from wind and other elements, table and chair. Transportation and shelter arrangements should be made at the time of request. 120 volt AC power is desirable.

IMETs will carry their own communications equipment and will no longer need a separate order for an All Hazards Meteorological Response System (AMRS). An Atmospheric Theodolite Meteorological Unit (ATMU) may be ordered by the IMET from the incident. Below is a list of IMETs and ATMUs in the Rocky Mountain Area.

<u>Rocky Mountain Area Incident Meteorologists</u>

Location	Name	Agency
Boulder, CO	Lisa Kreiderman	NWS
Pueblo, CO	Makoto Moore	NWS
Pueblo, CO	Eric Petersen	NWS
Grand Junction, CO	Mike Chamberlain	NWS
Grand Junction, CO	Joe Ramey	NWS
Riverton, WY	Dave Lipson	NWS
Riverton, WY	Todd Baker	NWS
Riverton, WY	Kelly Allen (Trainee)	NWS
Cheyenne, WY	No Trained IMET	NWS
Billings, MT	Dan Borsum	NWS
CRH, Kansas City	Jennifer Zeltwanger	NWS
Sioux Falls, SD	James Murray	NWS
RMCC	Tim Mathewson	BLM
Rapid City, SD	Darren Clabo	SD State (For Joe Lowe Type 2 Team)

Rocky Mountain Area ATMUs

CACHE	RESOURCE
Pueblo NWS	CO-01

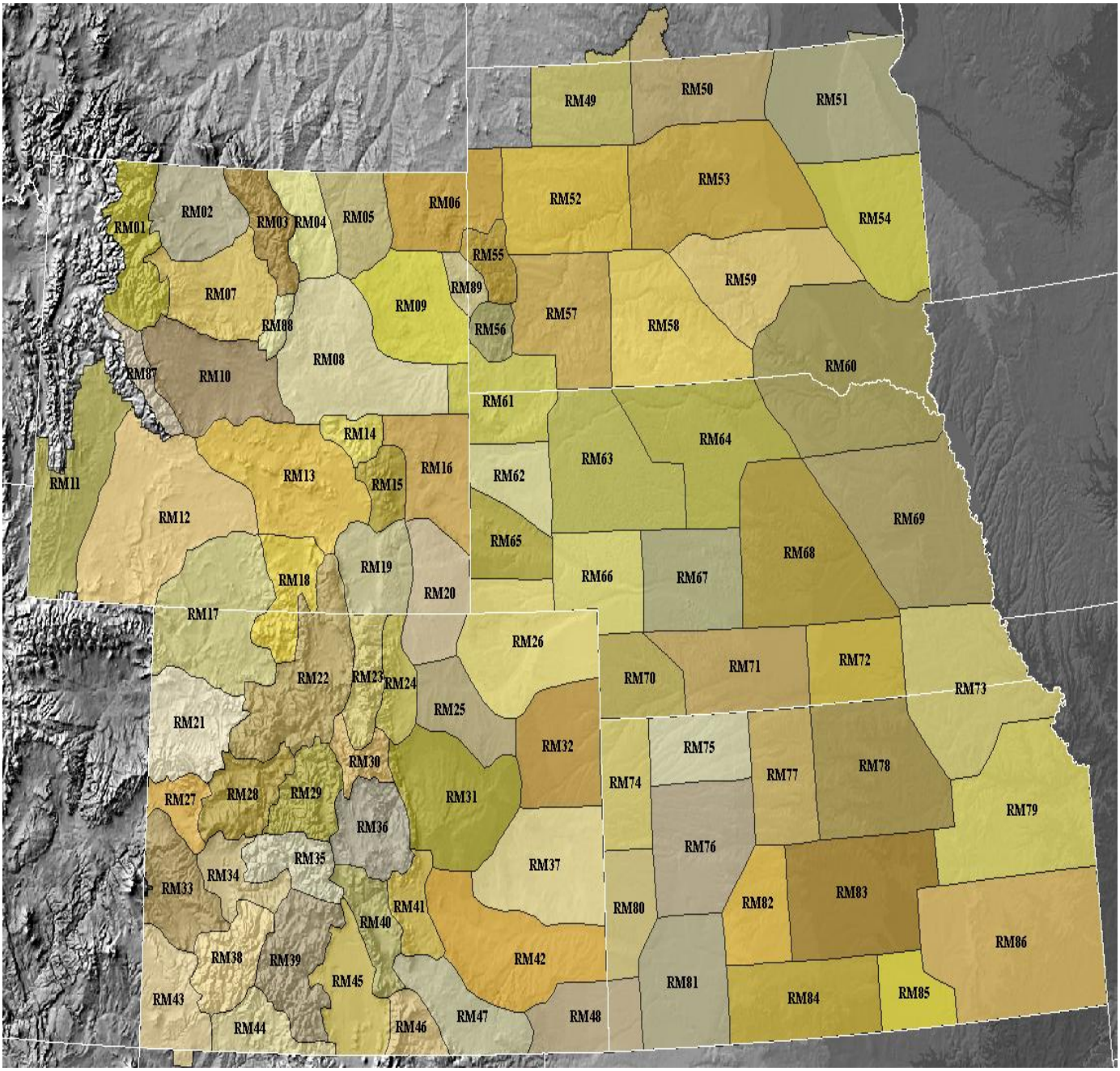
C. Briefings – Either NWS or RMCC meteorologists will conduct briefings upon request, time and resources permitting. RMCC meteorologists will provide briefings for strategic planning during organized RMA MAC.

D. Conference Calls – April 1 through October 31 RMA NWS offices and RMA Predictive Services may conduct daily or weekly conference calls to discuss the current and forecasted fire weather situation during periods of significant fire activity. These dates and times are flexible and may change based on the fire situation.

E. WIMS IDs for NFDRS Stations – All NFDRS observation stations are assigned a 6-digit NWS station identification number for use in WIMS. Land agencies will coordinate with their local NWS office and Regional fire weather program leader to obtain the 6-digit ID. The NWS will coordinate the new station and 6-digit ID to RMA Predictive Services. A listing of current NFDRS stations and IDs is included in the appendices.

VII. 2011 Predictive Services Area Map and NWS Fire Weather Zones

Predictive Services Area Map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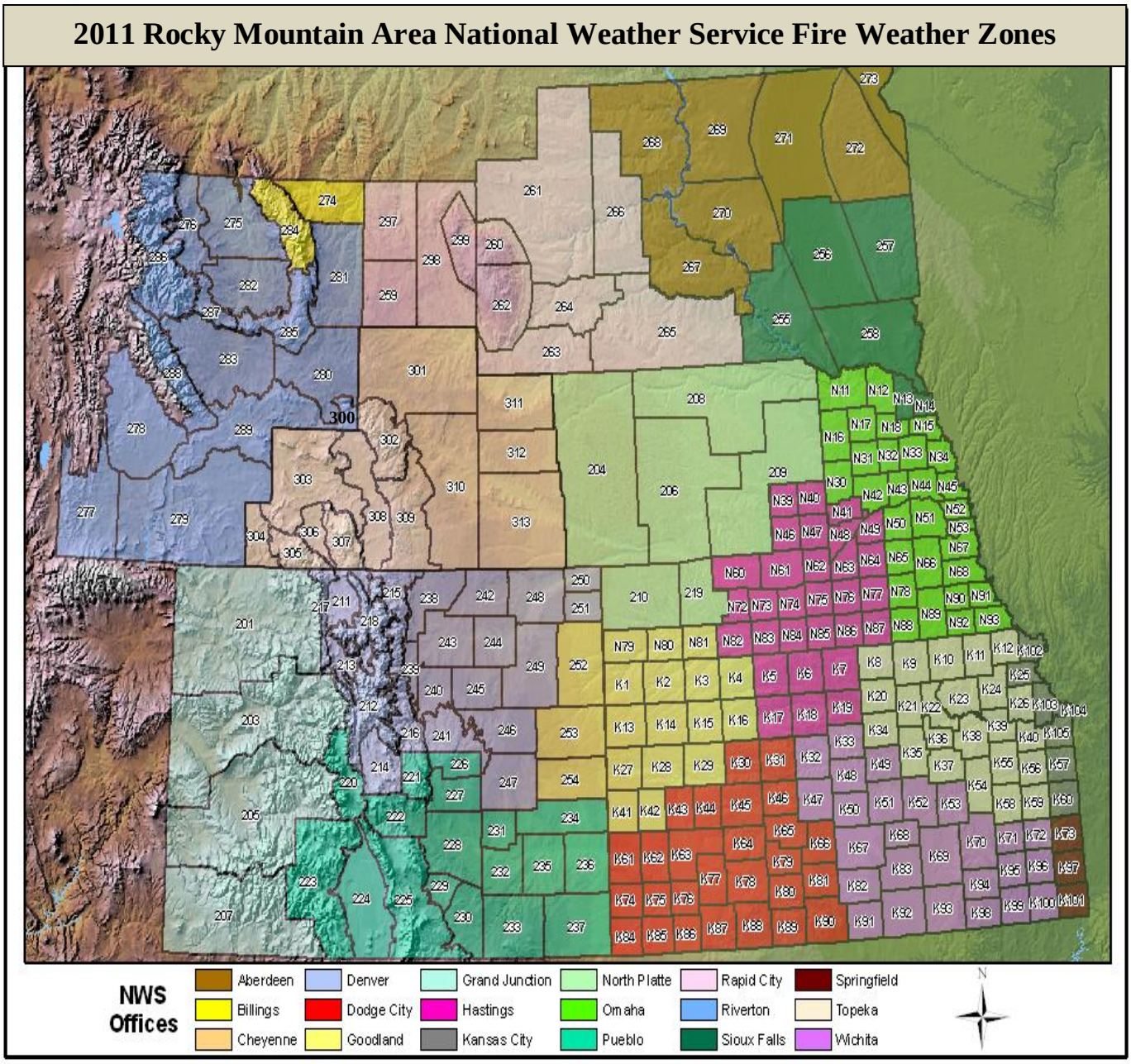
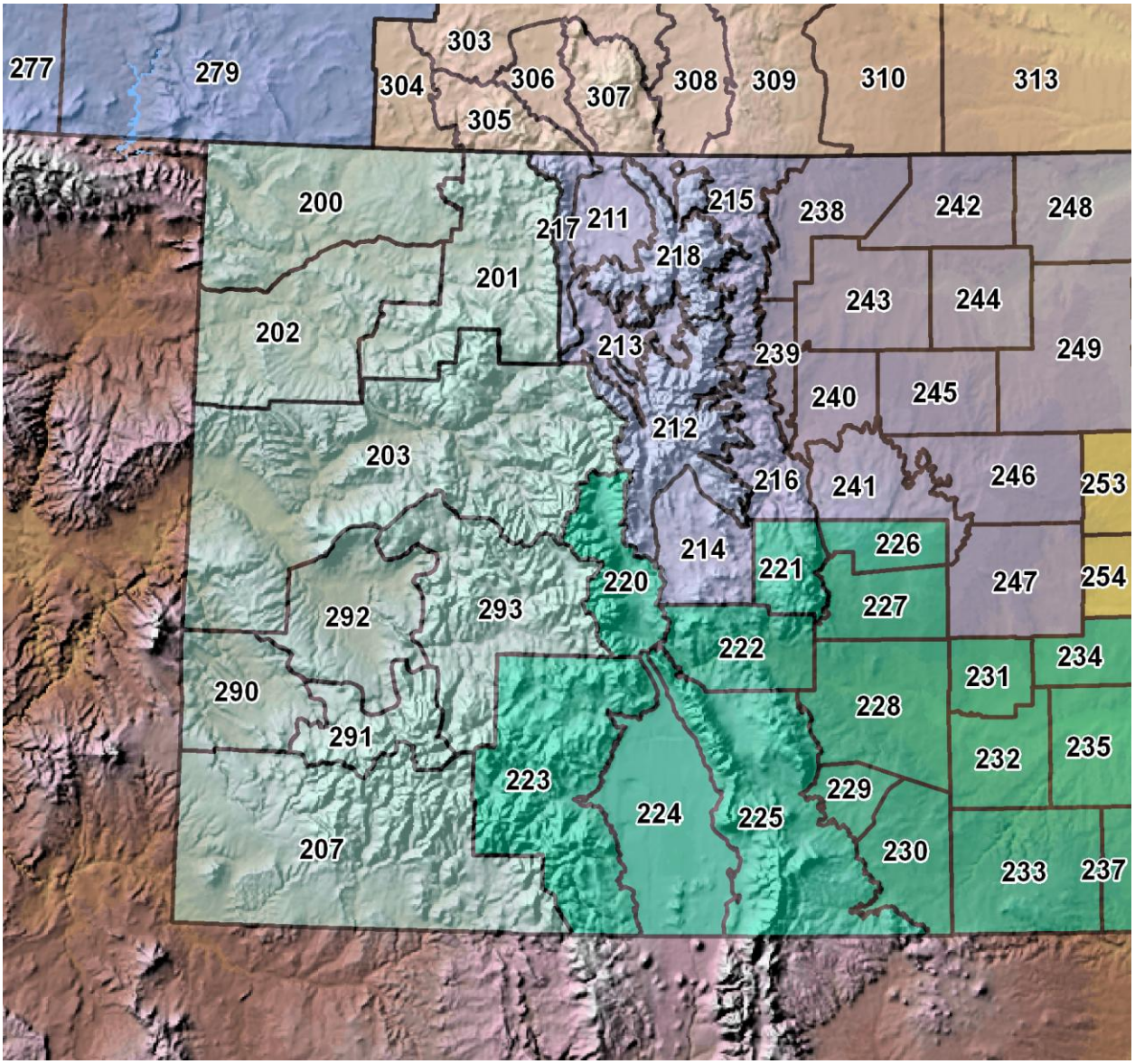
2011 NWS Fire Weather Zones



***Note: Changes to the fire weather zones in the NWS GJT Forecast Area will take place on approximately June 7, 2011 (Please see map on page 54)**

2011 Zone Changes for Grand Junction, Colorado Forecast Area
New Zones Include: 200, 202, 201, 290, 291, 292, 293



VIII. Interagency Change of Service Procedures

Recommended NWS fire weather service changes must be reviewed and agreed upon by land agency user groups, Rocky Mountain Area Predictive Services, and National Weather Service. Review, discussions and agreements can take place through annual Land Agency/NWS meetings, AOP meetings, email, or conference calls. Service changes include adding experimental products, new "official" fire weather products, and new formats to routine and non-routine fire weather products (FWF, SPOTs, etc). Additionally, when recommending local or regional fire weather service changes, the National Weather Service will act in accordance with policies and procedures outlined in NWSI 10-102 and 10-1805 and will be responsible for:

1. contacting local user groups (i.e. Local Fire Management Officers and Dispatch Centers) to discuss and come to agreement on recommended service changes.
2. contacting Rocky Mountain Area Predictive Services to discuss and come to agreement on recommended service changes.
3. obtaining internal approval for such changes.

A consensus must be reached among interagency user groups prior to the implementation of service changes.

IX. EFFECTIVE DATES ON THE AOP

May 5, 2011 to May 5, 2012

This AOP shall be effective on the date the last signature is placed on the signature section and it will remain in effect until the date the last signature is placed on the signature page the following year. Updates or amendments may be added in the interim upon agreement of all signatories.

X. AGENCY SIGNATURES (*On file*)

/s/Joseph Lowe ____5/511_
Chair — Date
Rocky Mountain Area Coordinating Group

/s/Kim Runk ___ 5/4/11__
Chief, Meteorological Services Division — Date
NWS Central Region Headquarters

/s/ Jennifer Zeltwanger ____5/4/11__
Manager, Regional Fire and Aviation Programs — Date
NWS Central Region Headquarters

/s/ James Fletcher_____ _____5/4/11_
Rocky Mountain Area Coordination Center Manager — Date
Rocky Mountain Coordination Center

/s/Timothy O. Mathewson_____ ____5/4/11__
Fire Weather Program Manager, RMA Predictive Services — Date
Rocky Mountain Coordination Center