Fire Weather Services

for

Virginia

Operating Plan

NWS Blacksburg, VA

NWS Charleston, WV

NWS Morristown, TN

NWS Sterling, VA

NWS Wakefield, VA

2024

This operating plan will be a semi-permanent document, specifying Fire Weather services provided by National Weather Service in Virginia. The plan incorporates procedures detailed in the Interagency Agreement for Meteorological Services.

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Introduction

Purpose of the AOP.

This Operating Plan serves as the official document governing the interaction and relationships between the National Weather Service, and the federal, state and local natural resource and land management agencies or cooperators in Virginia.

Explanation of relationship between the AOP and MOU.

This State Operating Plan is issued in lieu of a formal Memorandum of Understanding (MOU) between the National Weather Service, federal, state, and other agencies that rely on fire weather support. The plan will outline forecast operations and services available to users. This includes products and formats, dissemination and coordination, and the responsibilities of the partners.

This Operating Plan will be the governing document for fire weather procedures and cooperation among the following agencies:

- NOAA National Weather Service
- USDA Forest Service
- USDI National Park Service
- USDI Fish and Wildlife Service
- VA Department of Forestry

The Southern Area Mobilization Guide and the National Mobilization Guide further define the relationship between the natural resource agencies and the NWS Incident Meteorologist.

This Operating Plan for Fire Weather Services conforms with the **Interagency Agreement for Meteorological Services**, valid since 2017.

Service Area and Organizational Directory

NWS Service Area and Organizational Information

The service area covered by this AOP is the state of Virginia, which is served by the National Weather Service Weather Forecast Offices at Blacksburg, VA (RNK), Charleston, WV (RLX), Morristown, TN (MRX), Sterling, VA (LWX), and Wakefield, VA (AKQ).

Forecast areas are tied to the "radar umbrella" of the WSR-88D Doppler Radar. The umbrella is the area which is covered by the radar volume scan. This means that forecasts are not bound by state political borders, although county borders are generally

observed. As a result of this configuration, the Jefferson and George Washington National Forests, and the Blue Ridge Parkway, are covered by multiple National Weather Service offices. For a map of the fire weather zones in VA, see the appendix.

The **AKQ forecast area** covers portions of eastern Virginia.

The Virginia counties covered by WFO AKQ (Wakefield, VA) include:

County	Zone #	County	Zone #
Accomack	VAZ099	Western King William	VAZ517
Amelia	VAZ068	Eastern King William	VAZ518
Brunswick	VAZ079	Lancaster	VAZ078
Caroline	VAZ064	Western Louisa	VAZ509
Charles City	VAZ082	Eastern Louisa	VAZ510
Western Chesterfield	VAZ513	Lunenburg	VAZ066
Eastern Chesterfield	VAZ514	Mathews	VAZ086
Cumberland	VAZ061	Mecklenburg	VAZ065
Dinwiddie	VAZ080	Middlesex	VAZ085
Western Essex	VAZ521	New Kent	VAZ083
Eastern Essex	VAZ522	Northampton	VAZ100
Fluvanna	VAZ048	Northumberland	VAZ077
Gloucester	VAZ084	Nottoway	VAZ067
Goochland	VAZ062	Powhatan	VAZ069
Greenville	VAZ087	Prince Edward	VAZ060
Western Hanover	VAZ511	Prince George	VAZ081
Eastern Hanover	VAZ512	Richmond	VAZ076
Western Henrico	VAZ515	Southampton	VAZ092
Eastern Henrico	VAZ516	Surry	VAZ089
Isle of Wight	VAZ093	Sussex	VAZ088
James City	VAZ090	Westmoreland	VAZ075
Western King and Queen	VAZ519	York	VAZ523
Eastern King and Queen	VAZ520		

The Virginia independent cities covered by WFO AKQ (Wakefield, VA) include:

City	Zone #	City	Zone #
Chesapeake	VAZ097	Petersburg	VAZ081
Colonial Heights	VAZ514	Poquoson	VAZ525
Emporia	VAZ087	Portsmouth	VAZ095
Franklin	VAZ092	Richmond	VAZ515
Hampton	VAZ525	Suffolk	VAZ096
Hopewell	VAZ081	Virginia Beach	VAZ098
Newport News	VAZ524	Williamsburg	VAZ090

Norfolk	VAZ095

The **LWX forecast area** covers portions of northern Virginia.

The Virginia counties covered by WFO LWX (Sterling, VA) include:

County	**Zone #**	**County**	**Zone #**
Albemarle	VAZ037	Madison	VAZ539
Arlington	VAZ054	Nelson	VAZ036
Augusta	VAZ025	Orange	VAZ050
Clarke	VAZ031	Page	VAZ029
Culpeper	VAZ051	NW Prince William	VAZ526
Fairfax	VAZ053	SE Prince William	VAZ527
Northern Fauquier	VAZ501	Rappahannock	VAZ040
Southern Fauquier	VAZ502	Rockingham	VAZ026
Frederick	VAZ028	Shenandoah	VAZ027
Greene	VAZ038	Spotsylvania	VAZ056
Western Highland	VAZ503	Stafford	VAZ055
Eastern Highland	VAZ504	Warren	VAZ030
King George	VAZ057	Northern Blue Ridge	VAZ507
Western Loudoun	VAZ505	Central Blue Ridge	VAZ508
Eastern Loudoun	VAZ506		

The Virginia independent cities covered by WFO LWX (Sterling, VA) include:

City	**Zone #**	**City**	**Zone #**
Alexandria	VAZ054	Manassas	VAZ527
Charlottesville	VAZ037	Manassas Park	VAZ527
Fairfax	VAZ053	Staunton	VAZ025
Falls Church	VAZ054	Waynesboro	VAZ025
Fredericksburg	VAZ056	Winchester	VAZ028
Harrisonburg	VAZ026		

The **MRX forecast area** covers portions of southwest Virginia.

The Virginia counties covered by WFO MRX (Morristown, TN) include:

County	**Zone #**	**County**	**Zone #**
Lee	VAZ001	Washington	VAZ008
Russell	VAZ006	Wise	VAZ002
Scott	VAZ005		

The Virginia independent cities covered by WFO MRX (Morristown, TN) include:

City	Zone #	City	Zone #
Bristol	VAZ008	Norton	VAZ002

The **RLX forecast area** covers portions of southwest Virginia.

The Virginia counties covered by WFO RLX (Charleston, WV) include:

County	Zone #	County	Zone #
Buchanan	VAZ004	Dickenson	VAZ003

The **RNK forecast area** covers portions of southwest Virginia.

The Virginia counties covered by WFO RNK (Blacksburg, VA) include:

County	Zone #	County	Zone #
Alleghany	VAZ019	Giles	VAZ011
Amherst	VAZ035	Grayson	VAZ015
Appomattox	VAZ046	Halifax	VAZ058
Bath	VAZ020	Henry	VAZ043
Bedford	VAZ034	Montgomery	VAZ014
Bland	VAZ010	Patrick	VAZ032
Botetourt	VAZ023	Pittsylvania	VAZ044
Buckingham	VAZ047	Pulaski	VAZ013
Campbell	VAZ045	Roanoke	VAZ022
Carroll	VAZ016	Rockbridge	VAZ024
Charlotte	VAZ059	Smyth	VAZ009
Craig	VAZ018	Tazewell	VAZ007
Floyd	VAZ017	Wythe	VAZ012
Franklin	VAZ033		

The Virginia independent cities covered by WFO RNK (Blacksburg, VA) include:

City	Zone #	City	Zone #
Buena Vista	VAZ024	Lynchburg	VAZ045
Covington	VAZ019	Martinsville	VAZ043
Danville	VAZ044	Radford	VAZ014
Galax	VAZ015	Roanoke	VAZ022
Lexington	VAZ024	Salem	VAZ022

National Weather Service Headquarters

NWS Headquarters, located in Silver Spring, Maryland, establishes policies and coordinates the national fire weather program. The national program manager coordinates the program with the regional program managers. The national program manager also works with the national headquarters of the Federal forestry and other natural resource management agencies and the Association of State Foresters in determining overall requirements for meteorological support. The national program manager coordinates national training in forestry and fire weather for NWS forecasters.

National Weather Service Regional Headquarters

Regional Headquarters manage the technical operational aspects of the fire weather program within each region. They also provide guidance and assistance to meteorologists-in-charge (MIC) on program operations and developing issues through Supplements to the National Directives System (NDS) and conferences. Regional Headquarters advise National Headquarters on matters pertaining to technical planning and operations. The regional program managers coordinate the regions' fire weather programs and advise the Regional Directors on the operational and administrative aspects of the regions' programs.

Weather Forecast Offices (WFO)

Weather Forecast Offices prepare and disseminate forecast products for all sectors of the population, including those for the Fire Weather program. These offices are responsible for providing forecasts for user agencies within their County Warning Area (CWA). Most offices have a designated fire weather focal point or fire weather program leader.

The National Weather Service Weather Forecast Offices will provide 24-hour, 365 days a year service. The NWS WFOs can be reached at:

National Weather Service Blacksburg, VA
VA Tech Corporate Research Center
1750 Forecast Drive
Blacksburg, Virginia 24060

National Weather Service Charleston, WV
1754 Hendrickson Drive
South Charleston, West Virginia 25303

National Weather Service Morristown, TN
5974 Commerce Blvd.
Morristown, Tennessee 37814

National Weather Service Sterling, VA
43858 Weather Service Road
Sterling, Virginia 20166

National Weather Service Wakefield, VA
10009 General Mahone Highway
Wakefield, Virginia 23888

NOTE: Unlisted telephone numbers used for coordination cannot be listed here. All user agencies have been or will be provided voice and fax numbers to be used for official purposes only.

Meteorologists-in-Charge (MIC)

The Meteorologists-in-Charge is responsible for the provision of adequate weather services for the offices' assigned areas of program responsibility. The MIC will ensure that the focal points or program leaders are provided adequate time for user liaison and assistance activities. MICs can be reached via email or through contact with their respective office:

Douglas Butts, Blacksburg, VA

Jamie Bielinski, Charleston, WV

George Mathews, Morristown, TN

James Lee, Sterling, VA

Jeff Orrock, Wakefield, VA

Program Leaders (or Focal Points)

Fire weather focal points and program leaders are the "customer service representatives" for the program. The focal points or program leaders, as representatives of the MIC's, are in regular contact with the partner agencies, helping them assess their meteorological needs, informing them of NWS products and services available to meet these needs, and educating them in the most effective use of the various NWS products and resources, including NOAA Weather Radio (NWR). Focal points and program leaders will work with users to utilize existing NWS products and services produced for other programs that could meet the requirements of natural resource management. The focal points and program leaders are also tasked with ensuring staff meteorologists are trained and remain proficient in preparing forecast products for support of the fire weather program. Fire Weather Program Leaders can be reached via e-mail or through contact with their respective office:

Phil Manuel (phillip.manuel@noaa.gov), Blacksburg, VA

Simone Lewis (simone.lewis@noaa.gov), Charleston, WV

Sam Roberts (sam.roberts@noaa.gov), Morristown, TN

Cody Ledbetter (cody.ledbetter@noaa.gov), Sterling, VA

Andrew Zimmerman (andrew.zimmerman@noaa.gov), Wakefield, VA

Participating Agencies

The following agencies are participants of this operating plan:

NOAA National Weather Service

US Forest Service

US National Park Service

US Fish and Wildlife Service

VA Department of Forestry

Services Provided by the National Weather Service

Routine Services

Fire Weather Seasons

Wildfires can occur in the state of Virginia at any time. As a result, the fire weather forecast will be issued year-round. However, the peaks of the fire weather season are as follows:

February 15 - April 30 and October 15 – November 30

The annual hunting season also starts in mid-September, which leads to an increased risk of fire starts.

Fire Weather Planning Forecast (FWF)

The Fire Weather Planning Forecast (FWF) is a zone-type product used by natural resource management personnel primarily for input in decision-making related to

pre-suppression and other planning or resource management activities, as well as for determining general weather trends that might impact burning conditions and thereby fire behavior of wildfires and prescribed fires. The decisions impact firefighter safety, protection of the public, property, and the natural resource, and resource allocation.

Product Overview and Issuance Criteria

The FWF provides a detailed prediction of weather elements for three specific 12-hour periods (four 12-hour periods with the afternoon forecast), a general 3 to 7 day forecast, and an 8 to 14 day extended outlook. The FWF is issued year round but may vary in issuance times. NWS Charleston issues a forecast every 3 hours to reflect the latest expectations. NWS Blacksburg, Sterling, Wakefield, and Morristown, issues a forecast at least twice daily (between 3:00-6:00 AM and between 2:00-4:00 PM) and will amend the forecast as needed. The morning forecast consists of three periods: "Today" (valid from issuance through 6 PM local time), "Tonight" (6 PM to 6 AM), and "Tomorrow" (6 AM to 6 PM). The afternoon version consists of four periods: "Tonight" (6 PM to 6 AM), "Tomorrow" (6 AM to 6 PM), "Tomorrow Night" (6 PM to 6 AM), and the "Following Day" (6 AM to 6 PM).

Format/Content of the FWF

Format - The format of the Fire Weather Forecast is specified in National Weather Service Directive 10-401. Some elements are optional and are not included by all National Weather Service offices.

Headlines - A headline is **required** when Red Flag Warnings and/or Fire Weather Watches are in effect. The headline will include the warning type, location, reason for issuance (e.g., high winds and low humidity), and effective time period(s). The headline is also included in the body of the FWF, in each appropriate zone grouping. Other headlines may be requested since the natural resource agencies are also considered "all risk agencies." When significant weather trends of locally-defined critical weather elements are forecast or observed during non-watch/warning periods, they will be identified in the headline.

Discussion - The discussion should be a brief, clear, non-technical description of the weather patterns that influence the weather in the forecast area.

Cloud Cover ("CLOUD COVER") - This is an indication of the expected sky condition. "Clear" or "Sunny" descriptors are designated when the forecast cloud cover is < 10%; "Mostly Clear" or "Mostly Sunny" are used when cloud cover is forecast to be >= 10% and < 30%; "Partly Cloudy" or "Partly Sunny" are used when cloud cover is forecast to be >= 30% and < 60%; "Mostly Cloudy" is used when cloud cover is >= 60% and < 80%; "Cloudy" is used when cloud cover is forecast to be >= 80%.

Precipitation Type ("PRECIP TYPE") - This refers to the predominant precipitation type during the forecast period, with an exception. When both "showers" and "thunderstorms" are included in the public forecast, "thunderstorms" will be designated as the precipitation type in the FWF.

Chance of Precipitation ("CHANCE PRECIP") - Refers to the probability of measurable precipitation (0.01 inches or more) during the forecast period. This will be rounded to

the nearest 10%. Note: Drizzle and snow flurries are not considered measurable precipitation and thus will not be given a probability.
Temperature ("MAX/MIN TEMP") - Refers to the forecasted maximum and minimum temperature for the zone, in degrees F, as measured at a standard 4.5 ft above the ground level.
Relative Humidity ("MAX/MIN RH") - Forecasted minimum relative humidity is provided during the daytime periods, while maximum RH is included at night. Relative humidity is highly variable from site to site, but for the purpose of the zone forecast will be the maximum or minimum relative humidity within the zone. In general, relative humidity values below 25 percent should deter a prescribed burn and cause a call to the National Weather Service to obtain a site specific forecast.

Note: The lowest average humidity typically occurs during the warmest part of the day. However, if it is expected to occur at a different time of the day, this will be noted in the "Remarks" portion of the forecast.

Surface Winds ("WND20FT/EARLY and WND20FT/LATE") - Surface wind speed and direction represent a two-minute average at 20 feet above the vegetative ground cover. Wind direction is the direction the wind blows from, to eight points of the compass. The "EARLY" designation refers to morning hours (before noon) during daytime periods, and also the evening hours (before midnight) during nighttime periods. "LATE" refers to the afternoon hours during the daytime periods, and also the pre-dawn hours (after midnight) during the nighttime periods. Wind gusts, which are rapid fluctuations in wind speed of usually less than 30 seconds in duration, are indicated in the forecast if gustiness is expected. Forecasts for the highest probable gust will be preceded by "G".
Precipitation Amount ("PRECIP AMOUNT") - Refers to the forecasted precipitation amount (in hundredths of an inch) whenever the chance of precipitation is 25% or greater.
Precipitation Duration ("PRECIP DURATION") - Refers to the duration of the measurable precipitation (in hours) when the probability of measurable precipitation is greater than or equal to 25%. A precipitation duration forecast of "1" is used for "1 hour or less" duration.
Precipitation Begin/End ("PRECIP BEGIN/END") - Refers to the time measurable precipitation begins or ends.
Mixing Height ("MIXING HGT") - Mixing height is defined as the atmospheric limit above which vigorous vertical mixing does not take place. Mixing height forecasts are given in either feet above the ground ("FT-AGL"), or feet above mean sea level (“FT-MSL”). Note: If forecast units are provided in FT-MSL, you must subtract your elevation height (terrain height above mean sea level) in order to obtain forecast units in FT-AGL.
Transport Wind ("TRANSPORT WND") - Defined as the average wind direction and speed from the surface to the top of the mixed layer. Direction of the transport wind (where the wind is blowing from) and speed will be given. The speed will be in MPH.
Ventilation Rate ("VENT RATE") - Refers to a multiplication of the mixing height and transport wind., With units in ft MPH. Ventilation rates, forecasted during the daytime, are used to calculate the Burn Category for each day. The ventilation rate gives the

potential for the atmosphere to disperse smoke. Refer to the appendix for further details regarding the correlation of the Ventilation Rate and Burn Category.

Dispersion ("DISPERSION") - Refers to the forecasted smoke dispersion category at night, based on the surface wind speed. The dispersion category gives a general indication of the state of the atmosphere with respect to its ability to disperse smoke. The dispersion forecast (nighttime) is analogous to the daytime Ventilation Rate, though only a forecast during the evening hours is provided as a large majority of controlled/prescribed fire operations are completed before midnight. A spot forecast is recommended for critical operations that might involve smoke drift towards a populated area. Refer to the appendix for further details on Dispersion categories.

Lightning Activity Level ("LAL") - A numerical value, which is used to describe the expected lightning activity for that day. Refer to the appendix for further details on the LAL.

Haines Index ("HAINES INDEX")- The index infers the stability of the atmosphere. In Virginia, for areas east of the Blue Ridge, "low elevation" is assumed for the calculation of the Haines Index. It utilizes the atmospheric temperature at 950 MB and 850 MB as well as taking into account the moisture levels (dew point depression) at 850 MB. For areas along and west of the Blue Ridge, the "mid level" Haines Index is calculated using the temperatures at 850 MB and 700 MB, and the dew point depression at 850 MB. Haines Index values range from 2 through 6. On western fires Haines Index values of 5 or 6 serve as an alert that fires or prescribed burns can experience control challenges. Local regional studies in North Carolina have shown that a Haines Index of 4 represents the initiating threshold whereby the atmosphere can support large fire growth. In the absence of strong winds, fire growth will be primarily "plume dominated", with crowning and spotting on all sides. As wind speeds increase, coupled with a Haines Index of 4 or greater, there is an increased threat for large wind-driven fires.

Atmospheric Dispersion Index ("ADI") - A lower atmospheric dispersion index (ADI) forecast computed from the 20-foot wind speed, mixing height, transport wind, and cloud cover. The value reported is the average maximum value for the fire zone, which filters out extremes. Refer to the Appendix for further details.

Low Visibility Occurrence Risk Index ("LVORI") - An index derived from the ADI and the relative humidity, that gages the probability of visibility restrictions in fog or smoke. The index is based on a study of traffic accidents in Florida. The value reported is the maximum value for the zone grouping, in order to capture the highest values. Refer to the Appendix for further details on LVORI categories.

3 through 7 Day Forecast - The outlook period is an extended forecast for the zone, or the entire forecast area, provided in narrative form (non-digital, non-tabular), and appended at the bottom of each zone grouping (for just that zone).

Outlook 8 to 14 Days - This section will only include temperature and precipitation forecasts and will provide forecasts with respect to seasonal normal values for the specific time of year.

Update Criteria for the Fire Weather Planning Forecast

The Fire Weather Forecaster will maintain a weather watch to ensure that the forecast remains accurate. When unexpected changes occur, or are forecast to occur, which significantly deviate from the previous forecast, the forecast will be updated. The decision to update, to an extent, is at forecaster discretion. The update criteria for various elements are listed in the Appendix. It is a shared responsibility for the WFO's and the natural resource agencies to monitor the need to update a forecast. Respective agency personnel will also provide feedback as to the updating of an FWF, NFDRS Point, or Spot Forecast.

Fire Weather Point Forecast Matrix (PFW)

The Fire Weather Point Forecast Matrix (PFW) is a tabular-type product used by natural resource management personnel for decision support related to pre-suppression and other planning or resource management activities at or near a specific point. These points are predetermined by the customers, and are semi-permanent in nature, meaning they can be changed from time to time, but not on a daily basis.

Generally, the forecast points listed in the PFW are those that are included in the National Fire Danger Rating System (NFDRS) Forecasts (i.e. RAWS locations). If an agency has a critical burn they are planning or there is a prolonged wildfire, they may request to have a point added to the PFW to aid in their planning and decision making processes. If an agency would like to have a point added to the PFW, contact the NWS Fire Weather program manager responsible for the location. A name, elevation, latitude, and longitude for the location is required to have the point added. It may take 2-3 days (sometimes longer) to have a point added to the PFW, so it is not advantageous to make a request for a near-term project or short-lived wildfire where a Spot Forecast is more appropriate.

Product Overview and Issuance Criteria

The PFW provides a detailed prediction of elements for three days out at 3-hour intervals, including smoke management parameters through day 2, and a more general 3 to 7 day forecast without smoke management parameters. The winds given in this forecast are not terrain corrected winds. The PFW is issued twice daily, once in the morning (between 3:00 and 6:30 AM), and the other in the afternoon (between 2:00 and 4:00 PM). For an example and information on decoding the product, click on PFW Guide.

Site Specific Forecasts (Spot Forecasts)

Criteria

Spot forecasts are special, non-routine forecasts prepared upon request of any federal agency, or state agency when there is some aspect of federal resources involved and/or interagency protection agreements currently exist, that needs site specific weather forecasts for: 1) controlling the spread of wildfire; 2) planning and managing prescribed fires; or 3) other specialized forest management activities. In the event of an emergency which threatens life and/or property, spot forecasts can also be provided to any federal, state, or local agency.

Spot forecast requests for wildfires and hazardous material emergencies are considered high priority, and can be obtained at any time. Spot forecasts may be obtained for prescribed burns; however, the response may be delayed due to higher priority responsibilities of the forecaster on duty.

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Spot forecasts are highly detailed forecasts for a specific location within the forecast area. The format of the spot forecast is specified in National Weather Service Directive 10-401. The forecasts will be **headlined** for a **Red Flag Warning** or **Fire Weather Watch**. The forecasts will begin with a discussion, and may contain any or all of the following weather elements: sky conditions; maximum and minimum temperatures, minimum and maximum relative humidity values, wind speed and direction; probability of precipitation; precipitation type, duration and amount; mixing heights; transport wind; inversion height; inversion onset and burnoff times or temperatures; ventilation and smoke management levels; wind profiles; stability indices (IE., Haines Index), and lightning activity levels (LAL). Since these are site specific and can be initiated because of critical circumstances, tailored products can be requested (e.g. temperature, relative humidity, and wind speed forecasts on a two hour incremental time period).

Procedures for Requesting a Spot Forecast

Spot forecasts will be prepared when requested by a user agency. Federal, state and local agencies may request spot forecasts in support of wildfire suppression or other emergencies where lives and/or property may be threatened. Due to the detailed and specific nature of this forecast product, it is imperative that the user provide the forecaster with necessary and sufficient information so that a reliable forecast can be prepared.

Requests for spot forecasts should be made using the web based spot forecast request form. This form, along with instructions on how to use it, is available on the local NWS fire weather web pages. The web based spot forecast request form should be filled out as completely as possible (required parameters are listed in red) by the user agency prior to submitting the request. Use Latitude/Longitude for your location, and this should be entered in either decimal degrees, or degrees/minutes/seconds. If you are using

decimal degrees enter as standard (e.g. 37.52). If degrees/minutes/seconds, use a second decimal (e.g. 37.31.12), or leave a space between each number (e.g. 37 31 12).

Requests for and retrieval of completed Spot forecasts for any location should be made through the NWS National Spot Forecast Request web page found at http://www.weather.gov/spot.

In times when internet access is hindered or not possible, spot forecasts may be requested and disseminated via fax or phone. If faxing a request, users should use the Fire Weather Special Forecast Request Form, WS Form D-1. Section I of WS Form D-1 should be filled out as completely as possible by the user agency prior to submitting the request by the fax to the forecast office. If the request is made by phone, all information in Section I should be provided to the forecast office.

While there is no dedicated fire weather forecaster, the forecast office will give a high priority to spot forecasts in the absence of weather phenomena in the CWA that pose a threat to life and property. To ensure that the request for a spot forecast is handled properly and appropriately, users should adhere to the following guidelines:

1) Allow adequate time for the forecaster to prepare the forecast. This will normally be about 30 minutes. On particularly busy fire weather days, spot forecasts will be handled on a first-come, first-serve basis, with wildfires or other life threatening events taking the highest priority.

2) Provide as much on-site or near-site weather information as possible. At a minimum, the user should provide at least one observation within an hour of the request. This observation must contain the following: location of the observation; elevation at the observation site; time of the observation; wind direction, speed, and level (eye or 20 foot); dry and wet bulb temperatures; any remarks about the state of the weather, particularly anything that may affect fire behavior. If possible, include some observations from the previous day that might give the forecaster an indication of daily trends.

3) As much as possible, specify the time period for which the forecast is needed.

4) As much as possible, specify the weather elements of most importance for which a forecast is needed, and/or critical values of these elements.

5) Provide a contact point name and phone number where the forecaster can call with questions about the spot request or if the NWS needs to notify the requesting official about a forecast update or impending significant weather.

6) In order to receive prompt attention for a fax request, please phone the office to let the forecaster know the request is on the way.

7) Natural resource agency personnel should contact the NWS forecast office for a spot update if the forecast conditions appear unrepresentative of the actual weather

conditions. Whenever possible, users should provide feedback, positive or negative, to the NWS forecast office concerning the performance of the spot forecast during or shortly after an event. This will assist forecasters in subsequent forecasts for the same or similar conditions.

National Fire Danger Rating System (NFDRS) Forecasts

Issuance

NFDRS forecasts will be issued by NWS for all RAWS stations on a daily basis no later than 1945Z (245 PM EST or 345 PM EDT) and is a 7-day forecast. Initiation of NFDRS forecasts for a new site will be coordinated with the NWS, and the agency requesting new NFDRS service will provide the NWS with information about the site location.

NFDRS V4 (2016) will require a continuum of observations spanning 24 hours every day. Short term outages of an hour or so will generally not pose too much of a problem in the computation of indices; however, long term outages of eight hours or more could lead to significant errors. This is due to the fact that every observation throughout the day is needed to accurately model fuel moisture values.

NFDRS V4 (2016) is now live and the legacy fuel models from the 1978 and 1988 systems have been turned off. This has resulted in fundamental changes to the way NFDRS is both computed and enacted. Given that NFDRS V4 is a much more automated system it may eventually render the WIMS collective (FWO) obsolete. Many of the changes in NFDRS will be largely transparent to the NWS, with the exception that the NFDRS forecast (FWM) will span seven days instead of the single day forecasts that have been issued over the past several years.

The NWS will still need to notify the station owner if they deem the data received from a RAWS to be bad, especially if it is internally inconsistent with general meteorological practices. An example of internal inconsistency would include: a negative humidity, an abnormally high temperature, or an abnormally low temperature for the season. These things, when they occur, are normally an indication that sensors need to be replaced.

The information needed by the NWS to produce the NFDRS forecast can be supplied by either the GACC meteorologist or the agency representative within the state or local area. This data is readily available from the WIMS catalog.

WIMS access for NWS personnel is also available. The GACC meteorologist can assist with that as needed. WIMS access is through the National Application Portal (NAP) and a username and password is required for each individual that requires access. NAP does not allow for group accounts due to security concerns and regulations.

In the state of Virginia there are 16 NFDRS RAWS.

Five are in the Blacksburg service area:

Station ID | Name | County | Elevation | Site Latitude | Longitude
441101 | Appomattox C.H. | Appomattox | 804 ft | 37.39N | 78.80W
441631 | Glenped | Rockbridge | 865 ft | 37.63N | 79.51W
441801 | Lime Kiln | Bath | 2580 ft | 37.99N | 79.76W
444002 | Craig Valley | Craig | 2702 ft | 37.56N | 80.18W
447502 | Stony Fork | Wythe | 2540 ft | 37.01N | 81.18W

One is in the Morristown service area:

Station ID | Name | County | Elevation | Site Latitude | Longitude
448502 | Flatwoods | Wise | 2308 ft | 37.01N | 81.18W

Four are in the Sterling service area:

Station ID | Name | County | Elevation | Site Latitude | Longitude
440402 | Fort Valley | Shenandoah | 800 ft | 38.84N | 78.42W
440901 | Headquarters | Page | 1200 ft | 38.67N | 78.37W
441531 | Prince William | Prince William | 200 ft | 38.56N | 77.37W
441906 | Sawmill Ridge | Augusta | 2072 ft | 38.10N | 78.79W

Seven are in the Wakefield service area:

Station ID | Name | County | Elevation | Site Latitude | Longitude
443301 | FAPH_DELOS (Fort Walker) | Caroline | 196 ft | 38.10 | 77.27
443302 | FAPH_EODTC (Fort Walker) | Caroline | 80 ft | 38.13 | 77.18
443303 | FAPH_NORTH1 (Fort Walker) | Caroline | 201 ft | 38.19 | 77.30
443304 | FAPH_SOUTH1 (Fort Walker) | Caroline | 206 ft | 38.04 | 77.24
446801 | James River USFW/NWR | Prince George | 50 ft | 37.26N | 77.14W
449801 | Great Dismal USFW/NWR | Suffolk | 38 ft | 36.61N | 76.55W
449905 | Back Bay USFW/NWR | Virginia Beach | 5 ft | 36.67N | 75.92W

Contents

The NFDRS forecast will be a forecast of the next day observation at 1300 LT. The format of the NFDRS forecast is specified in National Weather Service Directive 10-401. The forecast will include the following elements:

a. ZONE/FCST: Shows whether this forecast is for an NFDRS zone or individual station. Zone average trends are forecast when enough observations are available for the zone area. Individual site forecasts are done where only a few observations are available.

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

c. YYMMDD: Year, month and day of valid forecast time.

d. 13: Valid forecast time. Always 1300 LST.

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

0 = clear
1 = scattered clouds (1/8 to 4/8)
2 = broken clouds (5/8 to 7/8)
3 = overcast clouds (more than 7/8)
4 = fog
5 = drizzle
6 = rain
7 = snow or sleet
8 = showers (in sight or at the station)
9 = thunderstorm

Note: Categories 5, 6 or 7 sets NFDRS index to 0.

f. TEMP: Temperature in degrees F valid at 1300 LST (or temperature trend + or - degrees F).

g. RH: Relative Humidity in percent valid at 1300 LST (or RH trend + or - percent).

h. LAL1: Lightning Activity Level 1400 LST to 2300 LST.

i. LAL2: Lightning Activity Level 2300 LST to 2300 LST.

j. WDIR: Wind Direction. Used only for point forecast (FCST) version. Enter direction using a sixteen point compass (N, NNE, NE, ENE, etc.) valid at 1300 LST (20 ft level, 10 minute average).

k. WSPD: Wind Speed. Enter wind speed in mph (or wind speed trend + or - mph) valid at 1300 LST (20 ft, 10 minute average).

l. 10HR: 10 hour time lag fuel moisture in percent valid at 1300 LST (or trend + or - percent).

m. Tx: Maximum temperature from 1300 LST to 1300 LST tomorrow.

n. Tn: Minimum temperature from 1300 LST to 1300 LST tomorrow.

o. RHx: Maximum relative humidity from 1300 LST to 1300 LST tomorrow.

p. RHn: Minimum relative humidity from 1300 LST to 1300 LST tomorrow.

q. PD1: Precipitation duration in hours 1300 LST to 0500 LST.

r. PD 2: Precipitation duration in hours 0500 LST to 1300 LST.

s. WETFLAG: Y or N. Indicates whether liquid water will be on the fuels at 1300 LST tomorrow.(Use with caution. A "Y" will set all the NFDRS indices to zero!).

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

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

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

Procedures

The Land Management Agencies are responsible for taking, quality controlling, transmitting, and the archiving of NFDRS observations from RAWS sites. Forecasts will be prepared for all sites, unless obvious errors are transmitted or the observation is internally inconsistent for prolonged periods of time. The observation(s) should be received by the NWS in a timely manner.

Missing observations sometimes occur due to signal override, satellite outages, or other elements beyond the control of the station owner. In these types of situations, NFDRS forecasts should still be issued. Suspension of the NFDRS forecast should be coordinated with the GACC meteorologist, the Regional RAWS coordinator for that geographic area, and the station owner.

If the station owner, typically a Land Management employee, is unable to service the sensors on his station, the NFDRS forecast can be suspended until the station comes back into service. When regular maintenance is being performed on a timely basis, long term outages beyond five days should not occur, or at least occur very infrequently. The Land Management Agencies do not have a mandatory turn-around time on maintenance issues. An NFDRS forecast can be made based on conditions in the surrounding area, even though a particular RAWS site may be temporarily out of service.

NFDRS V4 (2016) will require a continuum of observations spanning 24 hours every day. Short term outages of an hour or so will generally not pose too much of a problem in the computation of indices; however, long term outages of eight hours or more could lead to significant errors. This is due to the fact that every observation throughout the day is needed to accurately model fuel moisture values.

NFDRS V4 (2016) is now live and the legacy fuel models from the 1978 and 1988 systems have been turned off. This has resulted in fundamental changes to the way NFDRS is both computed and enacted. Given that NFDRS V4 is a much more automated system it may eventually render the WIMS collective (FWO) obsolete. Many of the changes in NFDRS will be largely transparent to the NWS, with the exception that the NFDRS forecast (FWM) will span seven days instead of the single day forecasts that have been issued over the past several years.

Fire Weather Watch and Red Flag Programs

During periods in which critical fire weather conditions are expected or imminent, the NWS will issue statements, watches and warnings to describe the level of urgency to the appropriate user agencies. These issuances will be coordinated with natural resource agencies.

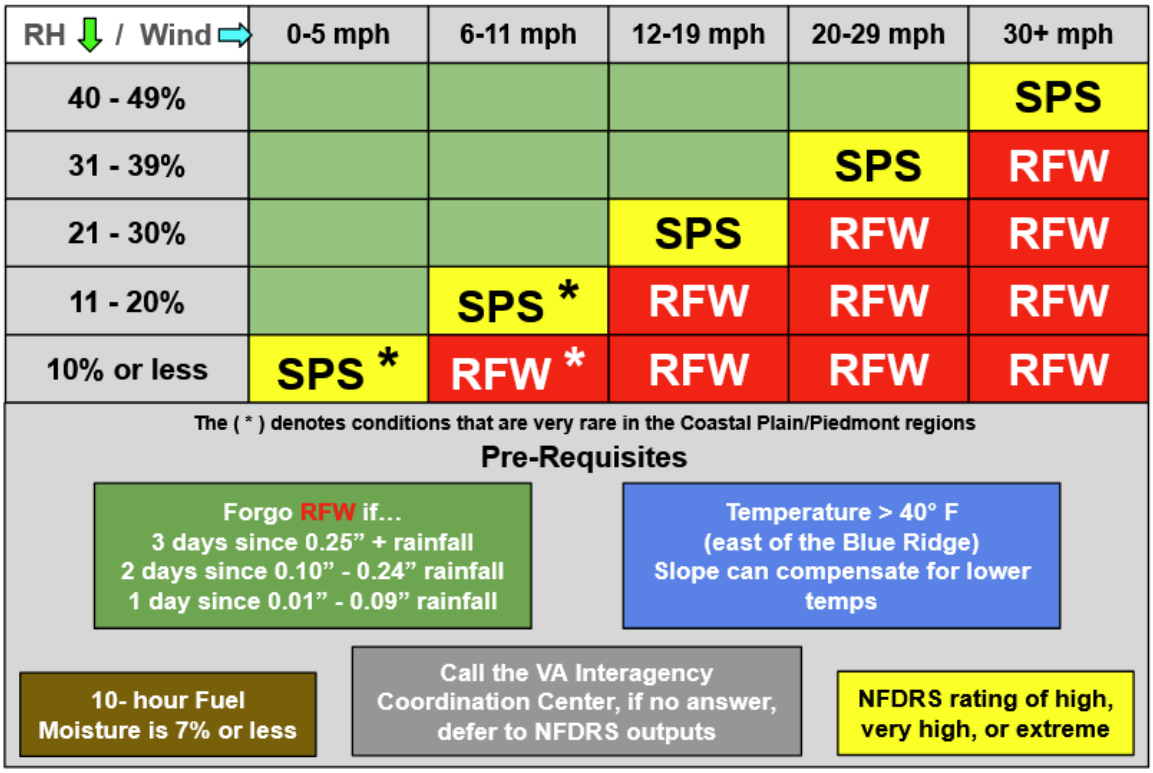
Definition of a Red Flag Event

A Red Flag Event occurs when critical weather conditions develop which could lead to extensive wildfire occurrence or to extreme fire behavior. Red Flag Events represent a threat to life and property, and may adversely impact fire fighting personnel and resources. Critical weather conditions include combinations of the following: strong, gusty winds; very low relative humidity; high to extreme fire danger (very low fuel moisture).

Historically, the highest risk of significant fire starts and blow-ups occur when fuels are sufficiently dry, and dry cold fronts pass over the region. Dry cold fronts typically cause lower humidity levels and produce shifting and increasing wind. In an effort to simplify the Red Flag Warning process, forecasters at the NWS offices will mainly be concerned with the specific weather conditions and critical weather patterns necessary to produce Red Flag conditions. Tracking fuel moisture will be the responsibility of the fire product user agencies. As a result, coordination will be necessary with the Virginia Interagency Coordination Center (VICC) when a NWS forecaster considers a Red Flag Warning or Fire Weather Watch. If the VICC Coordinator (Center Manager) cannot be reached then coordination will be necessary with the federal land management agency having the greatest fuels responsibility within the affected area (e.g. the USFS, NPS, or FWS), and the Virginia Dept. of Forestry central office in Charlottesville, VA.

For 2024, a new method is being used to determine the need for the issuance of a Red Flag Warning (RFW) or Fire Weather Watch, as well as the Special Weather Statement (SPS) for increased fire danger. The below matrix will be used to make an initial determination on the threat for the dangerous spread of wildfires. The new approach uses a matrix, which takes into account enhanced fire danger in conditions with stronger winds but higher RH, but also in instances with lower wind speed given low enough RH, especially in the mountains where terrain effects can cause localized changes in wind speed and direction. Wind represents the wind speed at 20 feet above the vegetative cover. Humidity is an eye level measurement. The old criteria (Wind above 20 mph, Rh

below 30% and Fuel Moisture 7% or less) were incorporated within the matrix and are still valid.



During periods of extended drought or when wildland fires are occurring, modifications to these criteria may be required. Any change will be coordinated through the Virginia Interagency Coordination Center, or with the Fire Behavior Analyst (FBAN) and Incident Commander (IC) on an existing large project burn. We recognize there are seasonal variabilities that may stress live fuels differently, in addition to other weather phenomena (such as, a frontal passage or thunderstorm downburst), that may result in extreme fire behavior and pose a hazard to wildland firefighters.

Red Flag Warning

A Red Flag Warning will be issued, after coordination with the appropriate natural resource agencies, when a Red Flag Event is occurring or is imminent. The warning will be issued for all or a portion of the forecast area. It will be issued immediately once the forecaster and the appropriate natural resource agency have determined that a Red Flag Event is ongoing. Otherwise, it shall be issued for impending Red Flag conditions when there is a high degree of confidence that conditions will develop within 24 hours. The warning will continue until the conditions cease to exist or fail to develop as forecast. At such time, the warning will be canceled. The format of the Red Flag Warning is specified in National Weather Service Directive 10-401. **A sample Red Flag Warning is in the Appendix.**

Fire Weather Watch

A Fire Weather Watch will be issued, after coordination with the appropriate natural resource agencies, to advise of the possible development of a Red Flag Event in the near future. It will be issued for all or part of the forecast area. A Fire Weather Watch is issued when the forecaster and appropriate natural resource agencies are reasonably confident that a Red Flag Event will occur. A watch should be issued 12 to 48 hours in advance of, but not more than 72 hours in advance of, the expected onset of the critical weather conditions. The watch will remain in effect until either it is determined the Red Flag Event will not develop, or that the watch should be upgraded to a warning. If conditions are not expected to occur as forecast, the watch will be canceled. The format of the Fire Weather Watch is specified in National Weather Service Directive 10-401.

Fire Danger Statements

When fire danger or fire occurrence is high and is coupled with near critical weather conditions, the National Weather Service may issue a Fire Danger Statement. These statements will be issued in coordination with the Virginia Inter-agency Coordination Center. The statements will normally be issued 12 to 24 hours in advance (or for the next operational day time period). The NWS will use the Special Weather Statement (SPS) for these issuances.

Participation in Interagency Groups

At a minimum, one NWS representative (usually the State Liaison WFO Fire Weather Program Leader or MIC) will attend the State Interagency meetings or working groups where fire weather or smoke management policy is discussed as an integral part of the meeting. However, it is strongly recommended that all NWS offices with fire weather responsibility attend the meetings to ensure uniform representation.

Special Services

Special fire weather services are those services that are uniquely required by natural resource agencies and go beyond the normal forecast operations of the NWS. Special services include Incident Meteorologist (IMET) deployment, station visits, training, and other pertinent meteorological services that are designated as non-routine.

Typically, special services require NWS personnel to be away from the Forecast Office and, in some instances, be in overtime status. User agencies are responsible for covering the cost of NWS overtime, travel and per diem expenses. Reimbursement of costs for special services will be as outlined in the **Interagency Agreement for Meteorological Services**.

Incident Support

On-site forecast service support is available for wildfires and prescribed burns. This includes the deployment of an Incident Meteorologist (IMET) and related service equipment such as the All Hazards Meteorological Response System (AMRS), and the Incident Remote Automated Weather Station (IRAWS). The IMET, AMRS, and the IRAWS are considered national firefighting resources, and can be requested through the Virginia Interagency Coordination Center.

The AMRS is a modularized mobile system of equipment used by an Incident Meteorologist (IMET) for data collection and forecast preparation. Only trained personnel will operate the AMRS, and this service equipment will only be dispatched to an incident when a certified IMET is requested. The IMET is responsible for arranging shipment of the AMRS.

AMRS workstations are collocated with Weather Forecast Offices that have certified IMETs. These AMRS workstations are maintained by the IMETs and are typically shipped with the IMET being mobilized. Certified IMET and associated AMRS to the state of Virginia are located in Blacksburg, VA (RNK), Sterling, VA (LWX), and Wakefield, VA (AKQ).

The AMRS is also composed of two pelican cases, one large shipping box and one medium size. The large case contains a laptop computer, extra monitor, belt weather kit, smartphone with wireless internet connectivity for obtaining weather data, a printer and office supplies. The volume is about 7 cubic feet, and its weight is about 90 pounds. The medium case consists of an upper air balloon sounding system, radiosondes with balloons, a nozzle and regulator for a helium tank, and miscellaneous expendables. Its volume is about 3 cubic feet and it weighs 55 pounds.

Total weight of the AMRS is 145 lbs with a volume of 10 cubic feet. The cubic feet are necessary for shipment by air.

Requests for the IMET should be made through the Virginia Interagency Coordination Center. Typically, the IMET nearest the incident will be deployed. However, during times of limited resources, IMETs from other areas of the country may be called. The decision will be made by the National Fire Weather Operations Coordinator (NFWOC) in conjunction with the MIC and IMET from the affected offices. It is the responsibility of the IMET to arrange shipment of the AMRS workstation.

The success of the operation depends in part on the user agency providing shelter and logistical support. Prior to the use of this equipment, the IMET is expected to have coordinated with the local user agency to ensure proper field support. If an IMET determines that IRAWS is desirable, it is the IMET's responsibility to ensure the IRAWS have also been ordered for the incident.

The requesting agency is responsible for any storage of service equipment while in transit, and shelter for the IMET and service equipment at the site. A sheltered work area, of at least 50 square feet with a table and chair, must be protected from excessive dust, free of standing water or condensation, and must be heated and/or cooled sufficiently to allow efficient operation of equipment. Power (120V AC) must be provided for the AMRS's electrical equipment, and priority telephone access during certain short periods each day must be made available.

The procedure for requesting IMETs will follow the guidelines outlined in the national MOA, the National Mobilization Guide, and the Southern Area Interagency Mobilization Guide. 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 the location of ICP.

4. Name of Incident Commander, Plans Chief, and FBAN, if available.

5. Request and Resource Order number for IMET.

Upon arrival at the incident and after going through the appropriate check-in procedures, the IMET will:

1. Brief the Fire Behavior Analyst (FBAN), Planning Section Chief (PSC), and the Incident Commander (IC) on current and expected weather as it affects the fire.
2. Establish a schedule with the IC and the FBAN for written forecasts and formal briefings.
3. Request a briefing of the fire situation and potential behavior problems from the FBAN. As time and resources permit, incident management should arrange for an aerial inspection trip for the meteorologist and should provide the forecaster with current fire line maps. If possible, the IMET should be assigned a radio with the fire line frequency.
4. Arrange for a schedule of observations from key points around the fire and from nearby lookouts and fire danger stations, in cooperation with the FBAN and PSC. On large fires, some personnel (at least two) should be permanently assigned to this duty. On smaller fires, this information can be provided by Division Supervisors equipped with belt weather kits.

IMET duties will vary with incident management team requirements, but the IMET is expected to provide daily weather forecasts for the incident, participate in shift briefings, planning and strategy meetings, and coordinate daily with the local Weather Forecast Office (WFO) and /or other IMETs at nearby incidents.

Demobilization is initiated at the incident, and will be coordinated through the Virginia Interagency Coordination Center. Upon release, the user agency will arrange transport of the Fire RAWS back to its cache location or to the controlling fire weather office. The user agency will also arrange transport of any peripheral equipment (e.g. helium tanks for supporting the AMRS) back to the local vendor. Travel arrangements will be made for the IMET back to his or her home office. The IMET is responsible for arranging transport of the AMRS workstation back to the home office. If the AMRS unit resides at a different location than the IMET, the IMET must make arrangements to ship the equipment to the proper office, and charge any shipping cost to the fire.

Other Special Services

Other special services may include weather station visits by partner agency personnel, RAWS site surveys and inspections, weather observer training, and course development work or related program work. These activities would typically be at the full expense of the requesting agency unless other arrangements have been made.

NWS meteorologists may also be asked to assist in other non-routine services (e.g. briefings or coordination calls) during periods of high fire danger or fire occurrence. MICs and Fire Program Leaders are to ensure the natural resource agency needs are met with little expense to either agency.

Fire Weather Training

NWS meteorologists will be available to assist in user-oriented training. This includes fire behavior courses, such as S-190 and S-290, where the meteorologist will serve as part of the cadre for that course. Requests for training assistance should be made through the NWS office's Fire Weather Program Leader or Meteorologist-in-Charge (MIC). Sufficient advance notice should be given to allow for scheduling and proper preparation. Costs incurred by the NWS in providing training assistance will be borne by the requesting agency.

Natural Resource Agency Responsibilities

Operational Support and Predictive Services

Program Management

The natural resource agencies will oversee the fire weather observation program, including the siting and maintenance of the observing equipment, fire weather training of their personnel, and the proficiency of their personnel in the use of the NWS Spot software.

Monitoring, Feedback and Improvement

Natural resource agencies will monitor the quality and timeliness of NWS fire weather products, and provide feedback to the NWS in order to improve services to the agencies.

Technology Transfer

The natural resource agencies may, from time to time, advise the NWS of new technologies being implemented to monitor meteorological or fuel parameters, or to improve communication, coordination, training or reference. Natural resource agency personnel may, with prior arrangement, visit an NWS office to acquire a knowledge of NWS technologies used in the monitoring of weather, or the preparation of products.

Agency Computer Resources

The Internet will be the primary method of obtaining the Fire Weather Forecast, Red Flag Warning, Fire Weather Watch, and for both requesting and receiving a Spot Forecast. As a backup method, a request can be made to the NWS for a product to be faxed to the customer agency. NFDRS observations will be entered into WIMS, and forecasts and calculations based on these observations will be received by WIMS, or by internet via a WIMS website.

Fire Weather Observations

Fire weather observation stations provide the specialized weather observations for fire weather forecasts, wildfire control and suppression, and various other land management operations. These stations were selected very carefully in each state and federal district. Sites were chosen to represent homogeneous weather conditions across a district. Stations may either be manned sites operated by land management agencies, or unmanned, Remote Automatic Weather Stations (RAWS) maintained by any of the federal or state land management agencies in the area.

All observation stations are assigned a 6-digit identification/location number. The first two digits indicate the state, the second two digits indicate the county, and the last two digits indicate the consecutively-assigned station number for that county. Land managers who wish to have a number assigned to a station should contact the GACC meteorologist at SACC in Atlanta.

RAWS stations are also assigned an 8 character alphanumeric identifier based on satellite transmission time. The NESDIS ID, transmit channel and time are assigned by the US Forest Service National RAWS program.

Observations from a satellite telemetered RAWS will automatically flow into WIMS via the NESDIS ID. If a station is not satellite telemetered, the data must be manually entered into WIMS. As NFDRS V4 is implemented, the previous requirement of changing R to O will no longer be present. All 24 observations will be needed to

accurately compute fire danger indices. State of the Weather will no longer be needed as that part of the computation is handled by an algorithm that utilizes Solar Radiation data. NFDRS V4 will feature a much higher degree of automation than the previous system. For those stations that do not embrace NFDRS V4, the manual change from R to O will still be required. However, the state of the weather is computed by the Nelson Model. The station owner has an opportunity to edit that value if he deems it inappropriate or erroneous on a given day. Non-NFDRS stations are exempt for these procedures.

Even with automated observations, the responsibility still rests with the RAWS owner to ensure that observations are being transmitted, recorded, and archived properly in WIMS. Automation greatly simplifies the daily process; however, there will still be the need for observations to be checked for integrity and consistency. Managing the NFDRS model parameters will still be a manual process in WIMS prior to the implementation of NFDRS V4. Once the station owner opts to implement NFDRS V4, the manual model management will be greatly reduced or possibly eliminated altogether. Automation helps streamline the WIMS collective that is distributed to the NWS via AWIPS. NFDRS forecasts are based on RAWS observations that appear on the daily collective and it is important these observations are accurate.

Sensor failure will often result in erroneous or (at best) suspicious values. If the NWS becomes aware of such a situation, it is prudent to contact the station owner. Similarly, if a station owner becomes aware of a sensor failure, he should relay that information to the appropriate NWS office. It is the station owner's responsibility to make sure that their station is and remains in good working order and repairs are made in a timely manner. Owners of NFDRS stations can still (and should) correct any errors in their respective observations.

It is important to note, observations are the most important single effort the control agencies put into the Fire Weather Program. Potential fire danger is derived from these observations. The Fire Danger Rating System is the guidance tool that, together with the weather forecast, is used to make a variety of management decisions. It is important that observers be well trained and informed of the necessity for accurate, timely, and representative observations.

On - Site Support

The user agencies are also responsible for maintaining observation site equipment. NWS personnel may accompany the user on maintenance trips or for annual inspection visits, which could also serve as liaison with the users.

Training

The responsibility of training natural resource agency employees will be that of the agencies themselves. However, the NWS will be available to assist when requested to

do so. Any expenses incurred by the NWS will normally be charged to the user agency, unless other arrangements have been made.

Joint Responsibilities

Joint responsibilities include the following:

Meetings between the NWS offices and the natural resource agencies.

The Virginia Interagency Coordination Center conducts at least two meetings per year, roughly every spring and fall, with all natural resource agencies and NWS offices serving Virginia invited to attend. These meetings typically will be held at the Virginia Department of Forestry Headquarters in Charlottesville, to minimize travel distance. Although the agenda includes many internal division matters they are of interagency consequence. Therefore, the NWS is a Strategic Partner and is invited to these meetings since topics often include NWS operations.

Conference Calls.

During times of very high or extreme fire danger, the Virginia Interagency Coordination Center (VICC) may initiate a conference call to discuss fire danger and weather. This call may include various partner agencies, and either some, or all of the NWS offices serving Virginia, depending on the extent of the area of concern. When more than one NWS office is participating, VICC will ask one NWS office to lead the weather discussion, which may be followed by input from the other NWS offices for their area. At times when the entire state is the area of concern, the NWS State Liaison Office in Wakefield will normally lead the discussion, but this may vary if the area of concern is skewed toward another NWS office's area. Conference calls will normally be held in the late morning, when NWS offices are beginning to consider their afternoon forecast package.

Maintenance and Revision of the Annual Operating Plan.

The AOP should be revised each year by the end of January, with cooperation and participation from each NWS office and each natural resource agency. The National Weather Service Office in Wakefield, Virginia, will be custodian of the plan.

Notification of NWS Changes in Operating Procedures.

From time to time, NWS headquarters, or NWS Eastern Region Headquarters, will send draft versions of future directives to their forecast offices for review and comment. To ensure that the natural resource partner agencies have an opportunity to review and comment on proposed changes, the NWS State Liaison Office in Wakefield will forward a copy of draft directives to VICC when they are received. VICC will then forward draft NWS directives to the rest of the natural resource partner agencies for review.

Comments and suggestions can be forwarded to the NWS State Liaison Office in Wakefield, which will forward them to NWS Eastern Region Headquarters.

Agreements on Services Provided.

Agreements on services and standards are normally reached at statewide meetings, but may be achieved at a series of local meetings or by other means such as telephone or e-mail. NWS offices and land managers should be aware of the ripple effect an agreement might have on other NWS offices and their customers, particularly when service areas cross state lines.

Workplace Visits.

Natural resource agencies and the NWS collaborate on familiarization of personnel in each other's fields of expertise, operations and equipment. Visits to offices and work centers, as well as field job sites can meet part of these requirements.

Service Evaluation.

Services provided by the NWS, and delivery of observations and information from the natural resource agencies to the NWS in support of these services, shall be under constant evaluation by both parties.

Numbering and archiving of observation stations.

The GACC, when requested to do so by a natural resource agency, shall assign a station ID number for fire weather observation platforms.

The land management agency will provide the station name, location (county, latitude, and longitude), and elevation to the GACC meteorologist.

The GACC meteorologist will assign the number and assist the station owner in establishing a station catalog in WIMS.

The numbering convention uses a six digit number, starting with 44 (for VA). The following two digit number designates the county, and the counties are numbered from 01 in the northwest, to 99 in the southeast.

The GACC meteorologist is responsible for maintaining a database of RAWS stations in their area. This information can be provided to the NWS regional program manager upon request.

The master list for the state of Virginia can be found in the appendix of this operating plan, which will be updated at least annually with any new or changed stations.

Effective Dates on the AOP

The effective dates of this Annual Operating Plan will be from January 1 through December 31 of the current calendar year. This plan will be subject to review and revision by all signatory parties each year, or more frequently as operations warrant.

This plan will be available on the WFO fire weather web pages. A copy of this plan will be sent to NWS Eastern Region Headquarters by March 31 of the current year. Eastern Region Headquarters will forward a copy of the plan to NIFC and NWS Headquarters.

Signatory Page

The following signatories have agreed to the terms and conditions of this Annual Operating Plan, which is subject to revision on at least an annual basis, or more frequently as operations necessitate. Actual signatures are maintained on file.

Signed Electronically _____ XXXXXXXXXX
Douglas Butts - Meteorologist-in-Charge
Phillip Manuel - Fire Weather Program Leader
NWS Blacksburg, VA

Signature on File _____ XXXXXXXXXX
James Lee - Meteorologist-in-Charge
Cody Ledbetter - Fire Weather Program Leader
NWS Sterling, VA

Signature on File _____ XXXXXXXXXX
Jamie Bielinski - Meteorologist-in-Charge
Simone Lewis - Fire Weather Program Leader
NWS Charleston, WV

Signed Electronically _____ XXXXXXXXXX
George Mathews - Meteorologist-in-Charge
Same Roberts - Fire Weather Program Leader
NWS Morristown, TN

Signed Electronically _____ XXXXXXXXXX
Jeff Orrock - Meteorologist-in-Charge
Andrew Zimmerman - Fire Weather Program Leader
NWS Wakefield, VA

Signed Electronically _____ XXXXXXXXXX
Derek Casbon
Acting Fire Management Officer
National Park Service
MTTS - Shenandoah

_____ XXXXXXXXXX
Steven Ippoliti
Predictive Service Program Manager
Southern Area Coordination Center

Signed Electronically _____ XXXXXXXXXX
Gene Nawrot
Fire Management Officer
Virginia-West Virginia Zone
Great Dismal Swamp NWR
USDI Fish and Wildlife Service

_____XXXXXXXXXX
VACANT
Fire Manager
VA District Ranger
USDI National Park Service

_____XXXXXXXXXX
VACANT
Fire Management Officer
GW JEFF National Forest
USDA Forest Service

_____XXXXXXXXXX
Natalie Broce
Center Manager
Virginia Interagency Coordination Center

_____XXXXXXXXXX
John D. Miller
Director of Fire and Emergency Response
VA Dept. of Forestry

_____XXXXXXXXXX
Jeffrey Seabright
Fire Manager
National Capital Region
USDI National Park Service

Appendices

Interagency Agreement for the Meteorological Services in Support of Agencies with Land and Fire Management Responsibilities can be found at: Interagency Agreement for Meteorological Services.

Fire Weather Zone Maps

Fire weather zones consist of groups of counties (or occasionally single counties) selected based on homogeneous climatology and expected weather. These groupings may change from forecast issuance to forecast issuance, and may contain counties from adjacent states served by the same NWS office. For a map of the VA fire weather forecast zones, click here.

Remote Automated Weather Stations within the State of Virginia

Station Name	County	Office	Station #	Lat	Lon	Elevation
APPOMATTOX	Appomattox	RNK	221602	37.29N	78.80W	773 ft
BACK BAY	VA Beach	AKQ	449905	36.67N	75.13W	5 ft

CRAIG VALLEY	Craig	RNK	444002	37.56N	80.18W	2702 ft
FAPH_DELOS	Caroline	AKQ	443301	38.1N	77.27W	196 ft
FAPH_EODTC	Caroline	AKQ	443302	38.13N	77.18W	80 ft
FAPH_NORTH 1	Caroline	AKQ	443303	38.19N	77.3W	201 ft
FAPH_SOUTH 1	Caroline	AKQ	443304	38.04N	77.24W	206 ft
FORT VALLEY	Shenandoah	LWX	440402	38.84N	78.42W	800 ft
FLATWOODS	Wise	MRX	448502	36.89N	82.46W	2308 ft
GLENPED	Rockbridge	RNK	441631	37.63N	79.51W	865 ft
GREAT DISMAL	Suffolk	AKQ	449801	36.61N	76.55W	38 ft
HEADQUARTERS	Page	LWX	440901	38.67N	78.37W	1200 ft
JAMES RIVER	Prince George	AKQ	446801	37.26N	77.14W	50 ft
LIME KILN	Bath	RNK	441801	37.99N	79.76W	2580 ft
PRINCE WILLIAM	Prince William	LWX	441531	38.56N	77.37W	200 ft
SAWMILL RIDGE	Augusta	LWX	441906	38.10N	78.79W	2072 ft
STONY FORK	Wythe	RNK	447502	37.01N	81.18W	2540 ft

ASOS Observation Sites

Station Name	ID	Lat	Lon	Elevation
Charlottesville-Albemarle Airport	CHO	38.1373 N	78.4551 W	640 ft
Danville Regional Airport	DAN	36.5742 N	79.3358 W	572 ft
Hanover County Municipal Airport	OFP	37.7078 N	77.4364 W	205 ft
Lynchburg Regional Airport	LYH	37.3267 N	79.2006 W	938 ft
Newport News/Williamsburg International Airport	PHF	37.1319 N	76.4930 W	43 ft
Norfolk International Airport	ORF	36.8944 N	76.2017 W	27 ft

Reagan National Airport	DCA	38.8483 N	77.0341 W	13 ft
Richmond International Airport	RIC	37.5050 N	77.3200 W	168 ft
Roanoke Regional Airport	ROA	37.3314 N	79.9813 W	1176 ft
Shenandoah Valley Regional Airport (Staunton)	SHD	38.2667 N	78.9000 W	1201 ft
Wakefield Municipal Airport	AKQ	36.9872 N	77.0011W	113 ft
Wallops Flight Facility	WAL	37.9402 N	75.4664 W	40 ft
Washington Dulles International Airport	IAD	38.9347 N	77.4475 W	312 ft

AWOS Observation Sites

Station Name	ID	Lat	Lon	Elevation
Accomack County Airport (Melfa)	MFV	37.6469 N	75.7611 W	47 ft
Bridgewater Air Park	VBW	38.37N	78.96W	1165 ft
Brookneal/Campbell County Airport	0V4	37.1417 N	79.0164 W	596 ft
Chase City Municipal Airport	CXE	36.7883 N	78.5016 W	503 ft
Chesapeake Regional Airport	CPK	36.6656 N	76.3207 W	20 ft
Chesterfield County Airport	FCI	37.4064 N	77.5248 W	236 ft
Clarksville Airport; KW63	W63	36.6000 N	78.5667 W	420 ft
Crewe Municipal Airport	W81	37.1810 N	78.0983 W	420 ft
Culpeper Regional Airport	CJR	38.5261 N	77.8574 W	295 ft
Davison Army Airfield (Fort Belvoir)	DAA	38.7167 N	77.1833 W	69 ft

Dinwiddie County Airport (Petersburg)	PTB	37.1838 N	77.5074 W	193 ft
Eagles Nest Airport	W13	38.0769 N	78.9444 W	1437 ft
Emporia-Greensville Regional Airport	EMV	36.6869 N	77.4828 W	127 ft
Farmville Regional Airport	FVX	37.3575 N	78.4378 W	417 ft
Fentress Naval Auxiliary Landing Field	NFE	36.7008 N	76.1283 W	10 ft
Fort Eustis Airport	FAF	37.13N	76.62W	13 ft
Fort Pickett/Blackstone Airport	BKT	37.0833 N	77.9500 W	427 ft
Franklin Municipal Airport	FKN	36.6981 N	76.9038 W	41 ft
Front Royal/Warren County Airport	FRR	38.9175 N	78.2535 W	709 ft
Gordonsville Municipal Airport	GVE	38.1560 N	78.1658 W	453 ft
Ingalls Field Airport	HSP	37.9514 N	79.8342 W	3792 ft
Lake Anna Airport	7W4	37.9658 N	77.7459 W	351 ft
Langley AFB	LFI	37.08W	76.35W	10 ft
Lawrenceville Airport	LVL	36.7728 N	77.7943 W	329 ft
Leesburg Executive Airport	JYO	39.0833 N	77.5667 W	390 ft
Lonesome Pine Airport	LNP	36.9875 N	82.5300 W	2684 ft
Louisa County Airport	LKU	38.0098 N	77.9701 W	493 ft
Lunenburg County Airport	W31	36.9601 N	78.1850 W	526 ft
Luray Caverns Airport	LUA	38.6671 N	78.5006 W	902 ft

Mecklenburg-Brunswick Regional Airport	AVC	36.6883 N	78.0454 W	442 ft
Middle Peninsula Regional Airport (West Point)	FYJ	37.5212 N	76.7647 W	24 ft
Manassas Regional Airport	HEF	38.7166 N	77.5167 W	194 ft
Martinsville Airport	MTV	36.6333 N	80.0167 W	942 ft
Mountain Empire Airport	MKJ	36.8947 N	81.3500 W	2559 ft
New Kent County Airport	W96	37.5032 N	77.1255 W	123 ft
New Market Airport	8W2	38.6557 N	78.7081 W	975 ft
New River Valley Airport	PSK	37.1372 N	80.6786 W	2105 ft
Norfolk Hampton Roads Executive Airport	PVG	36.7801 N	76.4488 W	23 ft
Norfolk Naval Station	NGU	36.9377 N	76.2893	15 ft
Oceana Naval Air Station	NTU	36.8207 N	76.0335 W	22 ft
Orange County Airport	OMH	38.2472 N	78.0456 W	466 ft
Quantico Marine Corps Airport	NYG	38.5033 N	77.3013 W	7 ft
Saluda Hummel Field Airport	W75	37.6024 N	76.4467 W	30 ft
Shannon Airport (Fredericksburg)	EZF	38.2667 N	77.4500 W	85 ft
Stafford Regional Airport	RMN	38.3981 N	77.4553 W	213 ft
Suffolk Executive Airport	SFQ	36.6824 N	76.6019 W	72 ft
Tangier Island Airport	TGI	37.87N	76.0W	5 ft
Tappahannock-Essex County Airport	XSA	37.8596 N	76.8941 W	135 ft

Tazewell County Airport	JFZ	37.0636 N	81.7983 W	2651 ft
Twin County Airport	HLX	36.7661 N	80.8239 W	2693 ft
Virginia Highlands Airport	VJI	36.6869 N	82.0336 W	2087 ft
Virginia Tech Airport	BCB	37.2075 N	80.4083 W	2132 ft
Warrenton Airport	HWY	38.5877 N	77.7150 W	302 ft
William M Tuck Airport	W78	36.7100 N	78.8480 W	420 ft
Winchester Regional Airport	OKV	38.1500 N	78.1500 W	728 ft

All Hazards NOAA Weather Radio Transmitters Serving the State of Virginia

For a map of each transmitter reception area, click here.

Location	Call Sign	Frequency	VA Counties Served
Accomack, VA	KJY-99	162.525 MHz	Accomack, Northampton
Beckley, WV	WWM-71	162.550 MHz	Tazewell
Bristol (Tri-Cities), TN	WXK-47	162.550 MHz	Lee, Russell, Scott, Smyth, Washington, Wise
Charlottesville (Covesville/Fan Mountain), VA	KZZ-28	162.450 MHz	Albemarle, Amelia, Amherst, Appomattox, Augusta, Buckingham, Charlotte, Culpeper, Cumberland, Fluvanna, Goochland, Greene, Louisa, Lunenburg, Madison, Nelson, Nottoway, Orange, Powhatan, Prince

			Edward, Rockingham, Spotsylvania
Fredericksburg, VA	WZ-2527	162.425 MHz	Caroline, Culpeper, Essex, Fauquier, City of Fredericksburg, King George, Cities of Manassas and Manassas Park, Orange, Prince William, Spotsylvania, Stafford, Westmoreland
Gilbert, WV	WXM-75	162.475 MHz	Buchanan and Dickenson
Hagerstown, MD	WXM-42	162.475 MHZ	Clarke, Frederick, Page, Warren
Heathsville, VA	WXM-57	162.400 MHz	Accomack, Essex, Gloucester, King and Queen, Lancaster, Mathews, Middlesex, North Hampton, Richmond, Westmoreland
Harlan, KY	WWG-68	162.450 MHz	Lee and Wise
Henderson, NC	WNG-586	162.500 MHz	Brunswick and Mecklenburg
Hinton (Keeney Mtn.), WV	WXM-72	162.425 MHz	Alleghany, Bath, Bland, Craig, Giles, Tazewell
Lynchburg (Madison Heights), VA	WXL-92	162.550 MHz	Amherst, Appomattox, Bedford, Buckingham, Campbell, Charlotte, Halifax, Prince Edward, Rockbridge
Manassas (Independent Hill), VA	KHB-36	162.550 MHz	Arlington, Clarke, Culpeper, Fairfax, Fauquier, King George, Loudoun, Madison, Orange, Prince William, Rappahannock, Spotsylvania, Stafford, Warren

Margarettsville NC	WWG-33	162.450 MHz	Brunswick, Dinwiddie, Greensville, Isle of Wight, Lunenburg, Mecklenburg, Southhampton, Sussex
Mount Jefferson, Ashe Co., NC	WNG-588	162.500 MHz	Grayson and Washington
Moorefield, WV	WXM-73	162.400 MHz	Augusta, Frederick, Highland, Page, Rockingham, Shenandoah
Norfolk (Driver), VA	KHB-37	162.550 MHz	Isle of Wight, James City, Surry, York
Pikeville, KY	WWG-69	162.400 MHz	Buchanan, Dickenson, Wise
Phelps, KY	WWG-81	162.500 MHz	Buchanan and Dickenson
Richmond, VA	WXK-65	162.475 MHz	Amelia, Charles City, Chesterfield, Cumberland, Fluvanna, Goochland, Hanover, Henrico, King William, Louisa, New Kent, Nottoway, Prince Edward, Prince George, Powhatan
Roanoke (Poor Mtn), VA	WXL-60	162.475 MHz	Alleghany, Appomattox, Bedford, Bland, Botetourt, Campbell, Caroll, Craig, Floyd, Franklin, Giles, Halifax, Henry, Montgomery, Patrick, Pittsylvania, Pulaski, Roanoke, Rockbridge, Wythe
Salisbury, MD	KEC-92	162.475 MHz	Delmarva Peninsula, Accomack

South Boston, VA	KJY-86	162.525 MHz	Campbell, Charlotte, Halifax, Mecklenburg, Pittsylvania
Washington, DC	WNG-736	162.450 MHz	Arlington, Fairfax, Loudoun, Prince William
Winston-Salem, NC	WXL-42	162.400 MHz	Carroll, Grayson, Henry, Patrick, Pittsylvania
Wytheville, VA	WZ-2500	162.450 MHz	Bland, Carroll, Giles, Grayson, Montgomery, Pulaski, Smyth, Wythe

Red Flag Criteria

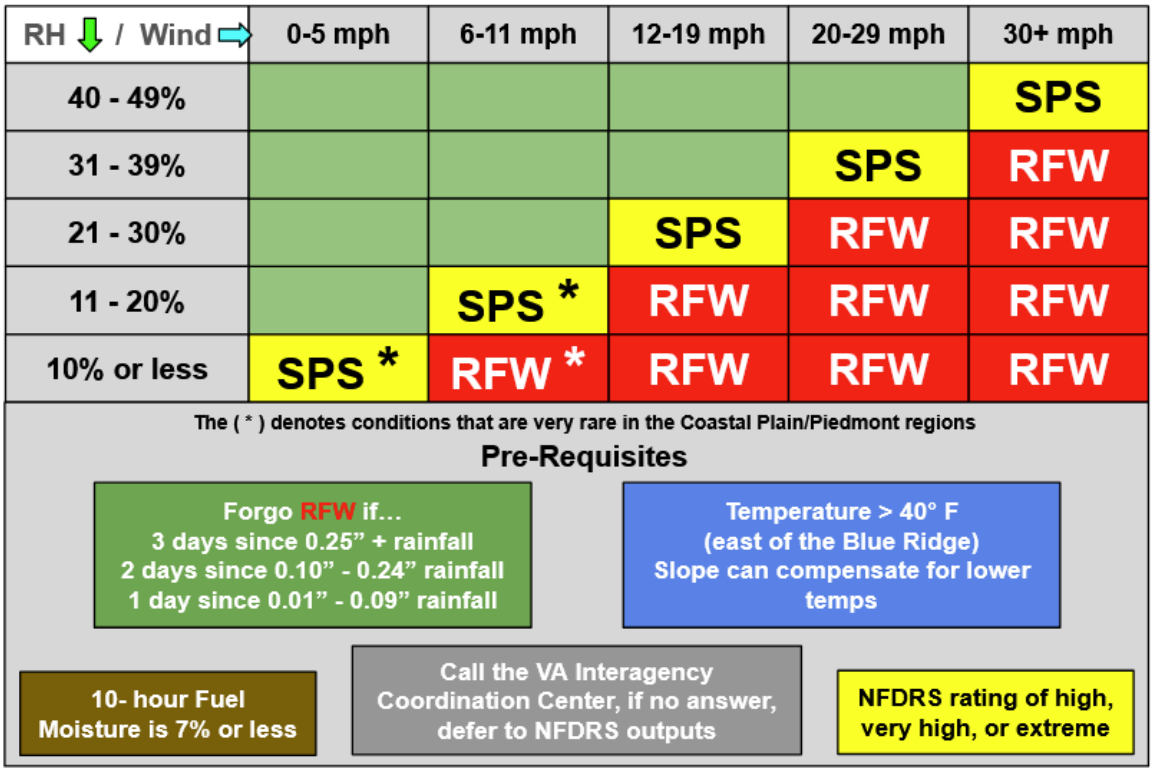
Red Flag Decision Matrix. A Red Flag Warning (RFW) will be issued for weather conditions that exceed weather and fuel moisture thresholds which have been identified as supportive of extreme fire behavior. In general, these criteria were developed for fire behavior on flat ground. Slope may result in higher Rates of Spread (ROS) and Flame Length (FL). There are certain pre-requisites that must be met before considering the matrix:

1. 10-hour Fuel Moisture of 7% or less
2. NFDRS ratings of high, very high, or extreme
3. Temperatures greater than 40 degrees F east of the Blue Ridge

Additional considerations are also applied if recent rainfall has occurred.

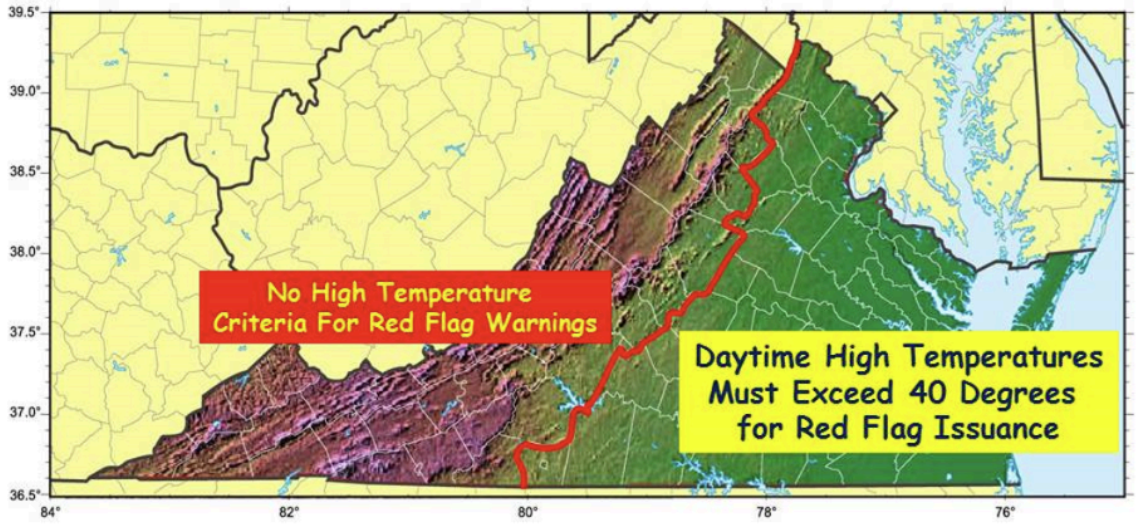
Once the prerequisites are met, then 20 foot wind speed and eye level humidity are considered using the table. Weather conditions or forecasts which meet or exceed the boxes highlighted with RFW will require a Red Flag Warning or Fire Weather Watch. Boxes highlighted with SPS indicate near critical fire weather conditions. A Special Weather Statement for increased fire danger should be considered.

All headlines should be coordinated with the Virginia Interagency Coordination Center (VICC). If VICC cannot be contacted then defer to NFDRS outputs for guidance.



Note: During periods of extended drought or when wildland fires are occurring, modifications to these criteria may be required. Any change will be coordinated through the Virginia Interagency Coordination Center, or with the Fire Behavior Analyst (FBAN) and Incident Commander (IC) on an existing large project burn. We recognize there are seasonal variabilities that may stress live fuels differently, in addition to other weather phenomena (such as, a frontal passage or thunderstorm downburst), that may result in extreme fire behavior and pose a hazard to wildland firefighters.

Temperature Criteria East of the Blue Ridge



This includes all counties in Wakefield's (AKQ) service area. For Sterling's (LWX) service area this includes Arlington, Culpeper, Fairfax, Fauquier, King George, Loudoun, Orange, Prince William, Spotsylvania, and Stafford. For Blacksburg's (RNK) service area Appomattox, Buckingham, Campbell, Charlotte, Halifax, Henry and Pittsylvania.

Fire Weather Product Examples

Click here for the latest products from:
Blacksburg, VA (RNK): Red Flag ; Fire Weather Forecast ; Spot Forecast
Charleston, WV (RLX): Red Flag ; Fire Weather Forecast ; Spot Forecast
Morristown, TN (MRX): Red Flag ; Fire Weather Forecast ; Spot Forecast
Sterling, VA (LWX): Red Flag ; Fire Weather Forecast ; Spot Forecast
Wakefield, VA (AKQ): Red Flag ; Fire Weather Forecast ; Spot Forecast
Click here for an example of a Fire Danger Statement .
Click here for an example of a Point Forecast Matrix.

NOTE: Red Flag Warning and Fire Weather Watch products are only available if they have been recently issued. Make sure to check the date for validity.

Burn Category Table

Ventilation Rate (ft-mph)	Burn Category
0 to 13999	0
14000 to 33499	1
33500 to 44999	2

44500 to 59999	3
60000 to 111999	4
112000 and above	5

Dispersion Table

Surface Wind (mph)	Dispersion Category
Near Calm	Stagnant
2 to 4	Very Poor
5 to 8	Poor
9 to 12	Fair
13 and higher	Good

Lavdas Atmospheric Dispersion Index (ADI)

(Derived from 20ft wind speed, mixing height, transport wind, and cloud cover)

Daytime ADI	Category
1 to 6	Very Poor
7 to 12	Poor
13 to 20	Generally Poor
21 to 40	Fair
41 to 49	Generally Good
50 to 59	Good
60 to 69	Very Good
>70	Excellent

Nighttime ADI	Category
1 to 4	Very Poor
5 to 7	Poor
8 to 12	Poor to Fair
13 to 20	Good

Lightning Activity Level

LAL Category	Interpretation
1	No Thunderstorms.
2	Cumulus clouds are common, but only a few reach the towering cumulus stage. A single thunderstorm must be confirmed in the rating area. The clouds mostly produce virga, but light rain will occasionally reach the ground.
3	Cumulus clouds are common. Swelling and towering cumulus cover less than 2/10ths of the sky. Thunderstorms are few, but two or three must occur within the observation area. Light to moderate rain will reach the ground, and lightning is infrequent.
4	Swelling cumulus and towering cumulus cover 2/10ths to 3/10ths of the sky. Thunderstorms are scattered, but more than three must occur within the observation area. Moderate rain is commonly produced, and lightning is frequent.
5	Towering cumulus and thunderstorms are numerous, they cover more than 3/10ths of the sky and occasionally obscure it. Rain is moderate to heavy, and lightning is frequent and intense.
6	Same as #3, but dry (little or no rain reaching the ground).

Lightning Strokes

	strokes per minute	strokes per 5 minute	strokes per 15 minute

1	0	0	0
2	1	1-5	1-8
3	1-2	6-10	9-15
4	2-3	11-15	16-25
5	3	15	25
6	1-2	6-10	9-15

Low Visibility Occurrence Risk index (LVORI)
(Derived from ADI and RH; gages probability of visibility restriction)

LVORI Category	Interpretation
1	Lowest proportion of accidents with smoke and/or fog reported (130 of 127,604 accidents, or just over 0.0010 accidents)
2	Physical or statistical reasons for not including in category 1, but proportion of accidents not significantly higher.
3	Higher proportion of accidents than category 1, by about 30 to 50 percent, marginal significance (between 1 and 5 percent).
4	Significantly higher than category 1, by a factor of 2.
5	Significantly higher than category 1, by a factor of 3 to 10.
6	Significantly higher than category 1, by a factor of 10 to 20.
7	Significantly higher than category 1, by a factor of 20 to 40.
8	Significantly higher than category 1, by a factor of 40 to 75.
9	Significantly higher than category 1, by a factor of 75 to 125.
10	Significantly higher than category 1, by a factor of 150.

FWF Update Criteria

Parameter	Update Criteria

Standard Air Temperature	+/- 5 degrees F
Relative Humidity	+/- 5%
20 ft AGL Wind Speed and Direction	+/- 5 mph and/or 45 degrees
Precipitation (POP, Duration and Amount)	same as for public zones Note: Duration guideline for NFDRS is +/- 2 hrs
Transport Winds	+/- 5 mph and/or 45 degrees
Mixing Height	+/- 300 m or 984 ft
Dispersion	One category of change

Note: Morning upper air soundings from nearby weather balloon sites should be examined for update criteria.

Record of Changes to the AOP the past 5 years

March 2020

Under “NWS Service Area and Organizational Information”, the Meteorologist-In-Charge for NWS Blacksburg was noted as Vacant.

Under “National Fire Danger Rating System (NFDRS) Forecasts”, the Flatwoods RAWS station information is updated.

Under "Appendix," added 2 AWOS sites:

Fort A.P. Hill North 1	TT281	38.1895N	77.2984W	201 ft

Fort A.P. Hill QD 1	TT216	38.0743N	77.3229W	116 ft

Under "Appendix," updated 1 AWOS site:

Fort A.P. Hill South 1	FAPV2	38.0426N	77.237W	206 ft

Revamped some of the tables in the “Appendices” section. All content remained the same.

Under “Services Provided by the National Weather Service”, added a description of the Fire Weather Point Forecast Matrix (PFW) product. Also, in “Appendices” and under “Fire Weather Product Examples”, added a link to an example of a Fire Weather Point Forecast Matrix.

March 2021

Under “National Fire Danger Rating System (NFDRS) Forecasts”, updated verbiage with input from SACC and to show that the NFDRS forecast is now 7 days.

Under “Fire Weather Observations”, updated verbiage based on input from SACC.

March 2022

Under “NWS Service Area and Organizational Information”, the Meteorologist-In-Charge for NWS Blacksburg was noted as Douglas Butts.

Under "Signatory Page", VACANT was listed as the Predictive Services Program Manager and signatory for the Southern Area Coordination Center.

Under "Signatory Page" and “Program Leaders”, the Fire Weather Program Leader for NWS Sterling, VA was changed to Brendon Rubin-Oster.

Under "Signatory Page" and “Program Leaders”, the Fire Weather Program Leader for NWS Wakefield, VA was changed to Andrew Zimmerman.

Additionally, minor edits were made to the RAWS and ASOS/AWOS stations with respect to updating coordinates and elevations.

March 2023

Under “Signatory Page” Steven Ippoliti was added as the Predictive Services Program Manager and signatory for the Southern Area Coordination Center.

Under “Signatory Page” Gene Nawrot replaced Gregg Buckalew as the Fire Management Officer for the Great Dismal Swamp NWR

Under “Signatory Page” Ted Docev replaced Carrie Powell as Center Manager Virginia Interagency Coordination Center

Under “NWS Service Area and Organizational Information” a zone split of Prince William county was added for NWS Sterling’s forecast area

The address was updated for the NWS Charleston, WV office as they have moved to a new building

Appomattox RAWS was added.

NWS Morristown now produces Vent Rate

Additionally, minor edits were made to the RAWS and ASOS/AWOS stations with respect to updating coordinates and elevations.

Under “Service Area and Organizational Directory” a zone split was added for Prince William County (county divided into two zones)

Added throughout that NFDRS V4 is operational

Under "Signatory Page" and “Program Leaders”, the Predictive Service Program Manager Southern Area Coordination Center was changed to Steven Ippoliti

Under "Signatory Page" and “Program Leaders” the Fire Management Officer Virginia-West Virginia Zone Great Dismal Swamp NWR was changed to Gene Nawrot

Under "Signatory Page" and “Program Leaders” the Fire Manager VA District Ranger USDI NPS was changed to VACANT

Under "Signatory Page" and “Program Leaders” the Fire Management Officer GW Jeff National Forest was changed to VACANT

Under "Signatory Page" and “Program Leaders” the Center Manager was changed to Natalie Broce

Additionally, minor edits were made to the RAWS and ASOS/AWOS stations with respect to updating coordinates and elevations.

February 2024

Added the Red Flag/IFD decision matrix

Under “Fire Weather Watch and Red Flag Programs” the matrix for wind and RH was added to replace the former wind and RH criteria

Cody Ledbetter was added as the Fire Weather Program Leader at NWS Sterling, VA (LWX)

The MICs were added under “Signatory Page” as co-signers of the AOP along with the Fire Weather Program Leaders

The Fort Walker (formerly Fort A.P. Hill) RAWS sites were added as NFDRS RAWS stations under “National Fire Danger Rating System (NFDRS) Forecasts”

The Fort Walker (formerly Fort A.P. Hill) RAWS sites were changed from the AWOS table to the RAWS table in the Appendix

An image was added to the Appendix to show the area east of the Blue Ridge where The 40 degree Fahrenheit temperature criteria is utilized. There was previously a broken link.

Under "Signatory Page" and “Program Leaders” Derek Casbon was added as MTTS Zone AFMO Shenandoah National Park